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# Sandia National Laboratories, California Waste Management Program Annual Report February 2009



**Mark E. Brynildson (Waste Management Program Lead)**

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# **Sandia National Laboratories, California Waste Management Program Annual Report February 2009**

Mark E. Brynildson (Waste Management Program Lead)  
Environmental Management Department  
Sandia National Laboratories, California

## **ABSTRACT**

The annual program report provides detailed information about all aspects of the Sandia National Laboratories, California (SNL/CA) Waste Management Program. It functions as supporting documentation to the *SNL/CA Environmental Management System Program Manual*. This annual program report describes the activities undertaken during the past year, and activities planned in future years to implement the Waste Management (WM) Program, one of six programs that supports environmental management at SNL/CA.

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## 0 Summary of Document Changes

Significant changes made to the February 2009 update of the Waste Management Program Report are summarized in Table 0-1.

**Table 0-1 Summary of Significant Changes to the Waste Management Program Report**

| Section | Page  | Change   |
|---------|-------|--|
| 0       | 6     | Summary of Document Changes updated  |
| 1.2     | 7     | Radioactive and Mixed Waste Management Process updated                       |
| 3.4     | 14-15 | Expiration/Effective Dates updated in Table 3.1                              |
| 4.2     | 15    | OP471636 was retired and the information was combined with OP471787          |
| 7.1     | 24    | Program Risk Assessment narrative updated                                    |
| 8.1     | 26    | 8.1 Follow-up on 2007 Program Assessments updated                            |
| 9       | 28    | Accomplishments updated  |
| 11      | 30    | Goals and Objectives updated   |
| App. A  | 35    | Personnel Assignments updated  |
| App. B  | 36    | Waste Management Program Risk Assessment updated                             |
| App. C  | 42    | Waste Management Program Quality Significant Purchases Determination updated |
| App. D  | 45    | Waste Management Program Self-Assessment updated                             |
| App. E  | 59    | Waste Management Program Self-Assessment Document Checklist updated          |
| App. F  | 61    | Environmental Programs Representative – Waste Management Issues              |

## 1 Program Description

The Waste Management (WM) Program is one of six programs under the Environmental Management Department at SNL/CA. The program oversees the management of hazardous, radioactive and mixed waste at SNL/CA. The WM Program is part of the corporate Sandia (SNL) WM Program. It is funded through an Integrated Enabling Services (IES) service center chargeback of the WM customers at SNL/CA and partially supported through the WM Project managed at Sandia National Laboratories/New Mexico (SNL/NM).

This program description provides detailed information about all aspects of the WM Program activities. It functions as supporting documentation to the *SNL/CA EMS Program Manual*. The Program Description is updated annually to reflect the dynamic nature of program operations, accomplishments, and goals.

### 1.1 Hazardous Waste Management Process

The effective management of hazardous waste requires a strong partnership between the hazardous waste generators and WM personnel. Under the Resource Conservation, and Recovery Act (RCRA) and the California Health and Safety Code (H&SC) all hazardous waste generators are required to properly characterize, label, store, and dispose of their waste.

The management of hazardous waste begins with the process and trained personnel that generate the waste. Key to waste management is a generator that has knowledge of the process that generated the waste and the material composition of the waste. The generator on a Waste

Description and Disposal Request (WDDR), usually using process knowledge, before WM personnel approve the characterization and pick up the waste. Once the waste meets the Waste Acceptance Criteria and is packaged and stored correctly for pickup, the waste is brought into the Waste Management Facility (WMF, Buildings 961/9611). In the WMF it is managed according to regulatory requirements appropriate for that specific waste stream and packaged to meet all Department of Transportation (DOT) requirements for transport to the off-site Treatment, Storage and Disposal Facility (TSDF). Shipments are accompanied by a Uniform Hazardous Waste Manifest and Land Disposal Restriction (LDR) certifications, as needed. Receipts for wastes received at off-site waste disposal facilities are returned to SNL/CA to document transfer on the signed manifest copy from the TSDF and ultimate disposition of waste documented on the Certification of Destruction from the TSDF.

Key to the Waste Management process is the Waste Information Management System (WIMS). It is a Sandia corporate information system that tracks the management of hazardous waste on-site from cradle-to-grave. The generators of the hazardous waste begin the data processing when they initiate a Waste Description and Disposal Request (WDDR) in WIMS. This allows the generator to print an electronic waste tag to place on the waste container. After the container is considered full by the generator, the generator submits the WDDR electronically to WM personnel for review. WM personnel review and approve the WDDR and the waste is picked up and transferred to the WMF. WM personnel use the WIMS to track the waste into the WMF to its temporary storage location. WIMS also generates the shipping documentation and the hazardous waste manifest. The Land Disposal Restrictions (LDR) document is hand prepared by the WM personnel to complete the document package for the waste to be transported offsite to a TSDF.

## **1.2 Radioactive and Mixed Waste Management Process**

The oversight and management of the SNL/CA Radioactive Waste Management Program was transitioned to SNL/NM Regulated Waste/Nuclear Material Disposition Department (RWNMDD) in the 2008. SNL/NM RWNMDD provides the program oversight and directs the shipment of Low-Level Radioactive and Mixed Waste from SNL/CA. SNL/CA Radiation Protection (RP) Program personnel supports the on-site management and the activities necessary to ship the LLW and MW from SNL/CA. The official transition of the program oversight with notification to DOE Sandia Site Office and the DOE Nevada Test Site occurred in November 2008.

The management of radioactive and mixed waste also requires a strong partnership between the radioactive/mixed waste generators and WM personnel. Waste that is radioactive at SNL/CA includes both low-level radioactive waste and mixed waste. Under the Atomic Energy Act (AEA), low-level radioactive waste is defined as radioactive waste that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, radioactive by-product waste, or naturally occurring radioactive materials. Mixed waste has radioactive constituents and contains hazardous chemical constituents. Under DOE Order 435.1 *Radioactive Waste Management* all radioactive and mixed waste generators must manage their radioactive and mixed waste in a manner that protects the environment and protects the worker and public health and safety.

The management of radioactive and mixed waste begins with the process and trained personnel that generate the waste. The generator has the most knowledge of the process that created the waste and the material composition of the waste and is responsible for the characterization of the waste before it is transferred to WM. The radioactive waste is characterized on a Disposal Request (DR) by the generator. Once the waste is adequately characterized to meet the acceptance criteria of the WMF, the waste is picked up and transferred to the WMF. The waste is then packaged and certified by the Waste Certification Official (WCO) for shipment. After the certification is completed, the waste is transported to a TSDF for disposal.

### **1.3 Transportation of Hazardous and Radioactive Waste On-site**

The WM Program personnel pick up hazardous and radioactive waste from the generator's location and transport it to the WMF. The waste must be transported onsite in accordance with DOE Order 460.2A *Departmental Materials Transportation and Packaging of Management* and the SNL Transportation Safety Document.

### **1.4 Medical Waste Management and Transportation Process**

SNL/CA accumulates medical waste at the on-site Medical Facility, (Building 925), where it is picked up for transportation to an off-site TSDF. By permit, medical waste cannot be stored at the WMF.

### **1.5 Waste Management Facility**

SNL/CA operates an on-site RCRA Part B permitted storage facility for hazardous waste and mixed waste. By design, the WMF also stores low-level radioactive waste. The planned lengths of time for storage at the WMF cannot exceed one year unless the regulating authority approves an extension. The facility consists of two buildings. The low-level radioactive and mixed waste is stored in Building 961 as shown in Figure 1-1 and the hazardous waste is stored in Building 9611 as shown in Figure 1-2.



**Figure 1-1 Waste Management Facility Building 961**



**Figure 1-2 Waste Management Facility Building 9611**

## **2 Program Drivers**

Environmental compliance drivers include laws, regulations, orders, directives and other corporate and site-specific requirements. The drivers that are applicable to the WM Program are listed in Table 1-1.

### **2.1 Compliance Driver Monitoring Process**

The WM Program uses a variety of sources to stay current on applicable compliance drivers. The primary source used is the SNL corporate notification service provided by the legal staff. SNL 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. The WM Program also receives information on regulatory changes from additional sources. These 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 (IDT) process, self-assessments, targeted presentations and program documents.

During 2008, no significant changes occurred in compliance drivers applicable to WM Program responsibilities.

DOE, SNL, Lockheed Martin and other external regulating agencies periodically audit the WM Program. Under the Nevada Test Site Waste Acceptance Criteria (NTSWAC), DOE Nevada is free to audit the Low Level Waste (LLW) program at any time and generally conducts announced audits every two years. Under California law, the state of California Department of Toxic Substances Control (DTSC) is free to audit the program at any time and conducts unannounced audits annually. Also under California law, the Alameda County Department of Environmental Health is free to audit the tiered-permit program and the medical waste program at any time and also conducts unannounced audits every three years.

The WM Program Lead communicates with DOE/NNSA/SSO (SSO) counterparts regularly to keep them informed of issues and trends of importance to the program. WM 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 WM Program and SSO maintain an open and cooperative relationship.

**Table 2-1 Compliance Drivers for the Waste Management Program**

| <b>Driver</b>                                 | <b>Summary</b>   | <b>Regulating Authority</b>                          |
|---|--|--|
| <b><i>Federal Laws</i></b>                    |  |  |
| Resource Conservation and Recovery Act (RCRA) | RCRA regulates the generation, treatment, storage, and disposal of hazardous chemical waste, non-hazardous chemical waste, non-hazardous solid waste and hazardous or petroleum products stored in Underground Storage Tanks (UST).                      | California Environmental Protection Agency (Cal/EPA) |
| Toxic Substances Control Act (TSCA)           | TSCA regulates a few wastes such as Poly Chlorinated Biphenyls (PCBs) and Asbestos.  | EPA  |
| Federal Facility Compliance Act (FFCA)        | FFCA waives sovereign immunity with respect to RCRA for federal facilities; gives EPA and authorized states the authority to conduct annual inspections of federal facilities; and establishes requirements for management of hazardous and mixed waste. | EPA  |
| Atomic Energy Act (AEA)                       | AEA assures the proper management of nuclear materials and radioactive waste.  | DOE  |
| <b><i>Federal Regulations</i></b>             |  |  |
| 40 CFR 260-280                                | Implementing regulations for managing waste under RCRA.  | EPA  |

| <b>Driver</b>   | <b>Summary</b>   | <b>Regulating Authority</b>                       |
|---|--|---|
| 49 CFR, subchapter C, Parts 171-178   | Implementing regulations for transporting waste.   | DOT   |
| 29 CFR 1910.120   | Implementing regulations for the safety and health of hazardous waste workers by setting and enforcing standards.  | OSHA  |
| <b><i>DOE Directives</i></b>  |  |   |
| DOE Order 435.1, Radioactive Waste Management   | Establishes requirements to manage radioactive waste in a manner that protects the environment, and worker and public health and safety.   | DOE   |
| DOE Order 5400.5, Radiation Protection of the Public and the Environment                                  | Establishes radiation protection standards for DOE operations so that radiation exposures to members of the public and the environment are as low as reasonably achievable (ALARA) and maintained within established limits of the order.      | DOE   |
| DOE Order 460.2B Departmental Materials Transportation and Packaging Management                           | Establishes requirements and responsibilities for management of DOE materials including waste, transportation and packaging.   | DOE   |
| <b><i>California Laws</i></b>   |  |   |
| California Health and Safety Code, Div 20, Ch 6.5, §§ 25100-25250.) Hazardous Waste Control Law           | Hazardous Waste Control Law provides a separate regulatory framework for hazardous waste management in California. The state law incorporates all RCRA requirements and imposes additional requirements that are stricter than RCRA standards. | Department of Toxic Substances Control (DTSC)     |
| (California Health and Safety Code, Division 104, Part 14, §§ 117600-118360) Medical Waste Management Act | Medical Waste Management Act provides for regulation of medical waste generators, transporters, and treatment facilities.  | Alameda County Department of Environmental Health |
| <b><i>California Regulations</i></b>  |  |   |
| Title 22 California Code of Regulations (CCR)   | Implementing regulations for hazardous waste management, incorporating all RCRA requirements and imposes additional stricter standards.  | DTSC  |

### **3 Operational Controls**

The WM Program uses technical work documents, administrative and specialized equipment as operational controls. In addition, the WM Program operates under several Permits that specify operational controls.

#### **3.1 Hazardous Waste Facility Permit**

The primary driver for the WM Program is the California Environmental Protection Agency, Department of Toxic Substances Control (CAL/EPA, DTSC) Waste Management Facility Permit. The permit includes the Hazardous Waste Operations Plan (Part B Permit) for the Waste Management Facility (Bldg. 961 and Bldg. 9611) and all additional storage outside of the actual facility buildings.

The Part A Application is the SNL/CA application to permit the operation. The Part B Permit incorporates the waste acceptance criteria, as defined by Federal and State Codes, and quantities allowed in each building and the bays within Bldg. 9611. It also defines waste analyses and sampling procedures, chain of custody procedures, certification and transportation requirements. The permit also incorporates specific information on the physical equipment used to handle or transport hazardous waste.

#### **3.2 Hazardous Waste Tiered Permits**

SNL/CA has several tiered permits with the Alameda County Department of Environmental Health. A tiered permit authorizes a facility to treat or store hazardous waste, usually a specific waste stream, but does not require a hazardous waste permit under federal law.

SNL/CA has the following tiered permits:

- Two permit by rule permits (both in Building 910 and currently in a closure process due to be complete in 2009) and
- Two conditionally authorized permits for neutralization (at the sewer outfall and Building 968).

#### **3.3 Medical Waste Permits**

SNL/CA has two medical waste permits with Alameda County Department of Environmental Health. The medical waste permits authorize a facility to manage medical waste. SNL/CA is registered as a small quantity generator with no onsite treatment occurring at the medical facility (Building 925). SNL/CA is also registered as a small quantity generator with onsite treatment occurring at Building 968.

### 3.4 Administrative Controls

The WM Program prevents accidents, incidents, exceedances and violations through both administrative controls and engineering controls. The administrative controls are various Technical Work Documents (TWD) which include (but are not limited to) Corporate Process Requirements (CPR), Operating Procedures (OP), Preliminary Hazard Screening (PHS), Safe Work Permits (SWP), activity-specific plans, department guidance and other management directives. The WM program always follows the most recent version of the specific TWD. The TWDs applicable to the WM Program are presented in Table 3-1.

**Table 3-1 Technical Work Documents Applicable to Waste Management**

| <b>TITLE</b>   | <b>Expiration Date</b> |
|--|------------------------|
| <b>OPERATING PROCEDURES</b>  |                        |
| AP8000000 Building Security Plan for the Waste Management Facility (WMF), Buildings 961 and 9611 | November 04, 2009      |
| AP800008 SNL/CA Environmental Program Representative (EP Rep) Program                            | July 31, 2009          |
| OP471125 Nonconforming Item Identification and Tracking  | November 17, 2011      |
| OP471131 Data Validation and Verification for the Environmental Operations                       | July 01, 2011          |
| OP471310 Control of Samples by the Environmental Operations Department                           | November 29, 2009      |
| OP471613 Verification of Laboratory Chemical Analysis Data                                       | January 14, 2011       |
| OP471619 Building 961 LECS Sump Operation  | July 14, 2011          |
| OP471787 Hazardous Waste Operations at SNL/CA  | November 13, 2011      |
| OP472236 Management of Low-Level Radioactive and Mixed Waste at SNL/CA                           | November 13, 2011      |
| <b>STANDARD OPERATING PROCEDURE</b>  |                        |
| SP473525 Standard Operating Procedure for the Hazardous Waste Facility, Bldg. 9611               | September 6, 2009      |
| SP485007 Low-Level Radioactive Waste, Bldg. 961  | November 12, 2011      |
| <b>PRIMARY HAZARD SCREENING</b>  |                        |
| SNL7A00686-018 Waste Management Program at SNL/CA  | October 20, 2009       |
| <b>ES&amp;H MANUAL SECTIONS</b>  |                        |
| <b>Effective Date</b>  |                        |
| ES&H Manual Section 6K Hazardous Waste Operations and Emergency Response (HAZWOPER)              | October 31, 2008       |
| ES&H Manual Section 10A Pressurized Drums  | September 25, 2008     |
| ES&H Manual Section 10D Polychlorinated Biphenyl (PCBs) Management                               | September 25, 2008     |
| ES&H Manual Section 10E Chemical Spills  | April 11, 2008         |
| ES&H Manual Section 10F Oils, Greases, and Fuels   | October 31, 2008       |
| ES&H Manual Section 10L Management of Excess Metallic Lead                                       | December 22, 2008      |
| ES&H Manual Section 19B Radioactive Waste Management   | December 19, 2008      |
| ES&H Manual Section 19C Mixed Waste Management   | October 31, 2008       |
| ES&H Manual Section 20 Waste Management at SNL/CA  | September 26, 2008     |
| ES&H Manual Section 20A Hazardous Waste Management at SNL/CA                                     | September 26, 2008     |
| ES&H Manual Section 20B Radioactive Waste Management at SNL/CA                                   | September 26, 2008     |
| ES&H Manual Section 20C Mixed Waste Management at SNL/CA   | September 26, 2008     |
| ES&H Manual Section 20D Radioactive Material Management Areas (RMMAs) at SNL/CA                  | September 26, 2008     |
| ES&H Manual Section 20E Treatability Studies for Hazardous and Mixed Waste at SNL/CA             | September 26, 2008     |
| ES&H Manual Section 20F Other Waste Management at SNL/CA   | September 26, 2008     |
| ES&H Manual Section 20G Recycle or Reuse Waste Management at SNL/CA                              | September 26, 2008     |
| <b>OTHER DOCUMENTS</b>   |                        |

| <b>TITLE</b>                                    |               |
|---|---------------|
| SNL Transportation Security Plan                | April 6, 2006 |
| NTS Waste Acceptance Criteria DOE/NV-325-REV. 7 | June, 2008    |

## **4 Documents Produced**

The WM Program produces a large number of electronic and paper documents in the normal course of business. A description of the routine documents follows. Other non-routine documents are also generated during the year.

### **4.1 Data Management**

The Waste Description and Disposal Request (WDDR) is the primary document the customer uses to request hazardous waste pickup and disposal. This is an electronic document accessed through the Waste Information Management System (WIMS) on the Sandia Restricted Network (SRN). The customer initiates the document and the WM personnel review and approve the forms prior to pickup. These forms produce the requisite documents for processing the waste (e.g., waste ID tags for the waste containers and the shipping documents). The WDDR information is maintained in the WIMS database on a corporate server at SNL/NM. In addition to the review and approval of the WDDRs, WM personnel and the Environmental Programs Representative train the customers and provide ongoing support as needed.

A similar process exists for radioactive waste. The Disposal Request (DR) is the primary document the customer uses to request radioactive waste pickup and disposal. This is an electronic document with primary generator support provided by WM personnel. The customer initiates the DR, the WM program personnel at SNL/CA and SNL/NM review and approve the forms and the pickup is done. The information is maintained in the RadTrack database on a corporate server at SNL/NM. In addition to the review and approval of the DRs, WM personnel and the Environmental Programs Representative train the customers and provide ongoing support as needed.

Examples of the electronic forms created by the databases are:

- Waste Description and Disposal Request (WDDR)
- Radioactive or Mixed Waste Disposal Request Form (DR)
- Uniform Hazardous Waste Manifest
- Lab Pack and Drum Content Forms- lab pack/drum inventory
- Emergency Response Guidelines Numbers
- Bill of Lading

### **4.2 Internal Documents**

The WM operating procedures (OP) require specific documentation for Program management and to meet regulatory requirements. The types of documentation are listed below under each OP.

OP461613 Verification of Laboratory Chemical Analysis Data

Documents produced according to this OP are:

- Chemical Analysis Report Verification Record Form
- Chain-of-Custody Report
- Applicable Limits List
- Analysis Data Report

OP471619 Building 961 LECS Sump Operation

Documents produced according to this OP are:

- Health Physics Survey Form
- Analytical analysis package
- Sump Logbook
- Chain of Custody Record and Analytic Instructions
- WDDR

OP471787 Hazardous Waste Operations at SNL/CA

Documents produced according to this OP are:

- Building 9611 Security Briefing
- Building 961 Security Briefing
- Forklift Inspection Report
- Waste Management Vehicle Inspection Report
- Building 961 Inspection Report
- Building 9611 Inspection Report
- Monthly Inspection Verification Report
- Compactor Log Sheet
- Drum Compactor Log Sheet
- Hazardous Waste Disposal Tag
- Chain of Custody Record and Analytic Instructions
- Shipper, current year file
- Chemical Analysis Report Verification record
- The analytical results from the contract laboratory
- Training Certificates or class enrollment records
- Profiles
- WM-Hazards Communication Summary
- Uniform Hazardous Waste Manifest
- Land Disposal Restrictions
- SNL/CA Bill of Lading
- DOT Exemption
- Waste Management Emergency Response Record
- Purchase Requisition
- Emergency Response Guides
- Certificate of Disposal
- SNL/CA Hazardous Waste Shipment Checklist
- Waste Management Facility Weekly Inventory Report
- SNL/CA Hazardous Waste Transporter Vehicle Checklist

## Weekly Waste Management Facility Restricted Chemicals Inventory

### OP472236 Management of Low-Level Radioactive and Mixed Waste at SNL/CA

Documents produced according to this OP are:

- Radioactive and mixed waste disposal tags
- Radioactive Waste Accumulation Sheets
- SNL/CA LLW/MW Pickup Form
- Photographs
- Waste Information Management System Printouts
- Scale Functional Check
- Reject Tag
- Nonconforming Item Tag

## 4.3 Document Control

Program documents and other technical work documents are managed in accordance with governing OPs and OP471347 *Administrative Procedures for Managing SNL/CA ES&H Recorded Information*.

Electronic documents such as the WDDR are maintained in WIMS but a paper information copy may be kept in the WMF for the convenience of the WM personnel while waste is in the facility. Once shipped, the paper documents are filed in the ES&H Record Center.

Electronic documents such as the DR are maintained in RadTrack but a paper information copy may be kept in the WMF for the convenience of the WM personnel while waste is in the facility. Once shipped, the paper documents are filed in the ES&H Record Center at SNL/NM or SNL/CA as appropriate.

## 4.4 External Reports

**Table 4-1 Waste Management Reports**

| Document                         | Due Date             | Frequency of Distribution | Distribution | Requirements |
|----------------------------------|----------------------|---------------------------|--------------|--------------|
| Annual Hazardous Waste Report    | March 1              | Annual                    | CA/EPA/DTSC  | Regulatory   |
| Biennial Generators Report       | March 1              | Every 2 years             | CA/EPA/DTSC  | Regulatory   |
| Hazardous Waste Facility Permit  | March 30, 2014       | Every 10 years            | CA/EPA/DTSC  | Regulatory   |
| Part B Permit Modifications      | As needed            | As needed                 | CA/EPA/DTSC  | Regulatory   |
| Transporter Permit               | April 30             | Annual                    | CA/EPA/DTSC  | Regulatory   |
| Site Treatment Tiered Report     | 30 days from receipt | Annual                    | CA/EPA/DTSC  | Regulatory   |
| Waste Minimization Certification | March 1              | Annual                    | CA/EPA/DTSC  | Regulatory   |

## 5 Approved Job Descriptions / Current Assignments

Job assignments in the WM Program include Program Lead, Waste Program Engineer, Hazardous Waste Technician, Radioactive Waste Representative, and Field Chemist. Job descriptions and qualifications for each assignment follow. Appendix A provides a list of personnel supporting each job assignment. In general:

The Department Manager overseeing WM is responsible for ensuring the completeness of qualification requirements as defined.

The Waste Program Lead is responsible for verifying and ensuring that WM Program personnel are trained and qualified to perform their job responsibilities.

WM personnel are responsible for maintaining their training as current and providing updated information (including completion certificates, cards, and course content information) to the designated technician within 20 working days after completion of their training or receipt of certification.

Before personnel may work independently in any of the Hazardous Waste Treatment and Storage Facilities, the individual must be qualified to work proficiently and safely. This is accomplished by completing and passing 40 hours of Hazardous Waste Operator Training to meet the requirements of 29 CFR 1910.120. Additionally, three days of on-site supervised training must be completed and documented.

### 5.1 Waste Program Lead

The Waste Program Lead directs the WM Program to assure SNL/CA compliance with EPA, OSHA, DOT, DTSC and DOE regulations and orders for hazardous, radioactive and mixed wastes by providing regulatory and permitting requirement assistance. The Waste Program Lead is the staff point-of-contact between SNL/CA WM and SNL/NM Waste Management programs in Organization 04139 - *Regulated Waste/Nuclear Material Disposition*. Additionally, the Waste Program Lead secures funding to support the required activities for WM operations on-site. Problem solving of technical issues relative to waste generation, minimization, waste treatment options, disposal and permitting are necessary. Regulatory and technical assistance is provided to researchers, maintenance and support personnel to implement the WM program.

#### Qualifications:

The Waste Program Lead should meet the following minimum requirements:

B. S. degree in Environmental Management or equivalent (M. S. degree preferred)

Member of Technical Staff/Contractor

DOE "Q" Clearance

Knowledge of hazardous and radioactive materials

Working knowledge of the following:

DOT (49 CFR 171-178)

EPA (RCRA and 40 CFR 260-280)

OSHA (29 CFR 1910.120)

DTSC (H&SC and Title 22 CCR)

DOE Orders

**Training:**

The Waste Program Lead will also serve as a Waste Program Engineer and meet all the training requirements for that position (see below). The Waste Program Lead Backup is an administrative position similar to the Manager of Environmental Management Department and does not require any specific training.

## **5.2 Waste Program Engineer**

The Waste Program Engineer supports the WM Program Lead to assure SNL/CA compliance with EPA, OSHA, DOT, DTSC and DOE regulations and orders for hazardous, radioactive and mixed wastes by providing regulatory and permitting requirement assistance. Additionally, the Waste Program Engineer solves problems of technical issues relative to waste generation, waste minimization, waste treatment options, disposal and permitting are necessary. Regulatory and technical assistance is provided to researchers, maintenance and support personnel to implement the WM program.

**Qualifications:**

The Waste Program Engineer should meet the following minimum requirements:

- B. S. degree in Environmental Management or equivalent (M. S. degree preferred)

- Member of Technical Staff/Contractor

- DOE "Q" Clearance

- Knowledge of hazardous and radioactive materials

- Working knowledge of the following:

  - DOT (49 CFR 171-178)

  - EPA (RCRA and 40 CFR 260-280)

  - OSHA (29 CFR 1910.120)

  - DTSC (H&SC and Title 22 CCR)

  - DOE Orders

**Training:**

The Waste Program Engineer will attend professional training courses offered by specialists at least once per year. This includes at least one course in environmental issues and regulations. Eight hours of annual refresher training is required to keep the Hazardous Waste Operators Training certification current. Additionally the Waste Program Engineer is responsible for completing DOT training to meet the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

## **5.3 Field Chemist**

The Field Chemist reviews hazardous waste disposal requests, assists generators in the chemical characterization of hazardous waste, coordinates the packaging, storage, and shipment of lab pack, non-bulk and bulk quantities of hazardous wastes. The Field Chemist works with other Environmental Management personnel to ensure that the hazardous waste that are stored and processed in the Waste Management Facility are in compliance with the Part B Permit and current local, State and Federal regulations. The Field Chemist is a key customer support

position interacting with on-site hazardous waste generators. The Field Chemist also supports the on-site Radioactive/Mixed Waste, Hazardous Materials Management and Pollution Prevention Programs including state regulated Universal Waste.

**Qualifications:**

The Field Chemist should meet the following minimum requirements:

- Bachelors Degree in a scientific field or 10 or more years of applicable experience,
- Working knowledge of regulations and hazards associated with hazardous materials/wastes,
- DOE Level Q Clearance (have or able to obtain).

**Training:**

The Field Chemist must be qualified to work at the SNL/CA Waste Management Facility. Eight hours of annual refresher training is required to keep the Hazardous Waste Operators Training certification current. Additionally the Field Chemist is responsible for completing DOT training to meet the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

## **5.4 Hazardous Waste Technician**

The Hazardous Waste Technician provides assistance to waste generators; collects, transports, and packages waste; and supports the general WMF operations. The Field Chemist and the Hazardous Waste Technician work closely together in a variety of WM activities. The technician may not necessarily be trained in all aspects of the listed responsibilities, as training is function-specific. As new responsibilities are added to a technician's duties, the technician will be trained accordingly.

**Qualifications:**

The Hazardous Waste Technician should meet the following minimum requirements:

- High School Equivalency

**Training:**

The Hazardous Waste Technician must be qualified to work at the Waste Management Facility. Additionally, the technician is required to complete an annual review of classroom and on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the EPA, OSHA, DTSC and DOE. Eight hours of annual refresher training is required to keep the Hazardous Waste Operators Training certification current. Additionally the Hazardous Waste Technician is responsible for completing DOT training to meet the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

## **5.5 Radioactive Waste Representative**

The Radioactive Waste Representative conducts waste operations to assure compliance with state and federal regulations governing the handling, treatment, storage, and disposal of

radioactive and mixed wastes. The Radioactive Waste Representative also performs support activities for the hazardous waste operations in compliance with OSHA, EPA, DOT, DTSC and DOE. The Radioactive Waste Representative will have knowledge of basic health physics as it applies to collecting samples and safe handling techniques for radioactive and mixed wastes.

**Qualifications:**

The Radioactive Waste Representative should meet the following minimum requirements:

- High School Equivalency
- Meet the training requirements of a Hazardous Waste Technician
- Complete RAD Worker II training

**Training:**

Before Radioactive Waste Representatives are permitted to handle radioactive and mixed wastes, that individual must meet the requirements of a Hazardous Waste Technician in addition to receiving 8 hours of Radiation Safety Training. Once determined that the employee/contractor meets the training requirements of the operating procedures, that person will be permitted to work without direct supervision.

## **5.6 Emergency Response Backup**

The Emergency Response Backup serves as a backup to WM personnel as needed.

**Qualifications:**

The Emergency Response Backup should meet the following minimum requirements:

- High School Equivalency
- 24 hour HAZWOPER training at a minimum

**Training:**

Before the Emergency Response Backup is permitted to support a site spill response the employee/contractor must meet the training requirements of the operating procedures.

## **6 Training and Competency**

### **6.1 Corporate and ES&H Training**

SNL views training, development and education as a strategic investment in SNL's future. The policy of SNL is to maintain a high level of technical and administrative competence in support of its mission. In support of this policy, SNL maintains a set of general corporate training

requirements that cover a wide range of areas such as security (physical, information, and computer), business ethics and diversity, general ES&H and general business processes. Standard corporate requirements are identified for each individual in the online Corporate Learning & Professional Development database known as TEDS. The online database tracks completion status for all corporate training requirements and provides electronic reminders to WM Program personnel when a course is due. SNL training coordinators identify corporate training requirements for new hires. SNL 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 Center ES&H Coordinator may identify job-specific training requirements. Most of these requirements are tracked in the online database. Table 6-1 presents job-specific training requirements for WM Program personnel. Some of the courses are internal to SNL, while others are provided by outside contractors or agencies.

Specific training requirements described for each WM Program position are described above and outlined in the Part B Operations Plan. The training requirements meet applicable regulatory requirements, including:

- U. S. Environmental Protection Agency (EPA), Title 40 CFR
- Occupational Safety and Health Act (OSHA), Title 29 CFR
- Department of Transportation (DOT), Title 49 CFR
- California Department of Toxic Substances Control (DTSC), Title 22 CCR
- DOE and SNL/CA requirements
- Corporate ES&H training

DTSC, OSHA, DOT, EPA or SNL will define the frequency and duration of refresher training. WM personnel will take the refresher courses and document training as necessary. WM maintains personnel training records in order to ensure all personnel remain current on their training.

Acceptable means of training include the both external and internal resources (e.g., Safe Operating Procedures, courses provided by Health & Safety Department). Examples include:

- external classroom courses or seminars,
- on the job training,
- web-based training,
- videos,
- other methods approved by SNL or the EM department manager.

**Table 6-1 Waste Management and Emergency Response Backup Training Requirements**

| <b>Training Courses Requirements</b>   | <b>Training Frequency</b> | <b>Waste Program Lead</b> | <b>Waste Program Engineer</b> | <b>Field Chemist</b> | <b>Radioactive Waste Representative</b> | <b>Hazardous Waste Technician</b> | <b>Emergency Response Backup</b> |
|--|---------------------------|---------------------------|-------------------------------|----------------------|---|-----------------------------------|----------------------------------|
| Emergency Preparedness (ESH100)  | Annual                    | R                         | R                             | R                    | R                                       | R                                 | R                                |
| ES&H Rights (ESH100)   | Annual                    | R                         | R                             | R                    | R                                       | R                                 | R                                |
| Lockout/Tag Out Awareness (ESH100)   | Annual                    | R                         | R                             | R                    | R                                       | R                                 | R                                |
| Fire Extinguisher: Awareness (ESH100)  | Annual                    | R                         | R                             | R                    | R                                       | R                                 | R                                |
| Fire Extinguisher: Hands On Use (FRP106)   | Annual                    | R                         | R                             | R                    | R                                       | R                                 | N                                |
| HAZWOPER: 40 Hours Initial (ENV100) + Three Days Supervised Training (ENV102X)           | One Time                  | R                         | R                             | R                    | R                                       | R                                 | O                                |
| HAZWOPER: 24 Hours Initial (ENV102) + One Day Supervised Training (ENV100X)*             | One Time                  | N                         | N                             | N                    | N                                       | N                                 | R                                |
| HAZWOPER: 8 Hours Refresher (ENV103)   | Annual                    | R                         | R                             | R                    | R                                       | R                                 | R                                |
| DOT: Basic Hazardous Materials Transportation (PKX100)                                   | Triennial                 | R                         | R                             | R                    | R                                       | R                                 | N                                |
| DOT: Radioactive Materials Transportation (PKX111)                                       | Triennial                 | R                         | R                             | O                    | R                                       | O                                 | N                                |
| DOT: Basic Hazardous Waste Transportation (PKX112)                                       | Triennial                 | R                         | R                             | R                    | R                                       | R                                 | N                                |
| Respiratory Protection For Users (RSP215)  | Annual                    | R                         | R                             | R                    | R                                       | R                                 | N                                |
| Confined Spaces Awareness (CNF105)   | Triennial                 | O                         | O                             | R                    | R                                       | R                                 | N                                |
| Confined Spaces Entry (CNF107)   | Triennial                 | O                         | O                             | O                    | O                                       | O                                 | N                                |
| Standard First Aid (MED108)/ Adult CPR (MED104)  | Triennial/<br>Annual      | O                         | O                             | O                    | O                                       | O                                 | O                                |
| Blood Borne Pathogens (MED113)   | Annual                    | O                         | O                             | R                    | R                                       | R                                 | O                                |
| Forklift: Hands On Use (FKL153)  | Triennial                 | O                         | O                             | R                    | R                                       | R                                 | N                                |
| Forklift Operator Refresher (FKL153R)  | Triennial                 | O                         | O                             | R                    | R                                       | R                                 | N                                |
| Radiation Safety Orientation (RAD102)  | Biennial                  | R                         | R                             | O                    | R                                       | O                                 | O                                |
| Radworker Training (RAD 210, RAD 230)  | Biennial                  | R                         | R                             | O                    | R                                       | O                                 | N                                |
| Annual Site Specific Discharge Prevention Briefing/Oil Spill Plan Awareness (ENV190/191) | Annual                    | R                         | R                             | R                    | O                                       | R                                 | N                                |

Notes: R = Required, O = Optional, N = Not Required

\*Not required if personnel have taken ENV102/ENV102X

## 7 Performance Measures

EMS objectives that are applicable to WM include full compliance with regulatory requirements for the management of waste generated. To assess performance in meeting these objectives, WM tracks the amount of waste generated, compliance reports and regulatory agency correspondence.

The WM Program has performance measures that are continuously used to assess the performance and effectiveness of the program. The measures are:

- Meet all regulatory monitoring requirements (Hazardous Waste (HW), Low-Level Radioactive Waste (LLRW), and Mixed Waste (MW))
- Meet regulatory report due dates (usually annual)
- Direct involvement with the Line and the EP Rep. about WM issues
- Meet quality assurance goals
- Compliance with Cal/EPA/DTSC permit requirements
- Compliance with DOE 435.1 requirements

Currently the Program is meeting all regulatory report due dates. The WM Program staff continues to have direct communication with the line and EP Rep through IDT meetings, direct phone calls and presentations to department staff.

FY2009 EMS environmental targets and objectives were approved in November of 2008. The performance measures will indicate the degree of success in meeting those targets. One of the EMS environmental objectives was to reduce the site's generation of routine hazardous waste. This objective requires actions by other departments. Activities performed directly by the WM personnel in 2008 that support this multi-year objective include a range of efforts from Line generator education to supporting chemical inventory cleanout campaigns led by the Hazardous Materials Management Program.

The EMS uses metrics to show progress in achieving goals. These metrics are updated on the Environmental Management web page. Figure 6-1 represents the site's generation of hazardous waste per quarter. WM actively supports the Pollution Prevention Program team, as needed, to reach EMS targets for the reduction of hazardous waste generation on site.

Figure 6-2 represents the site's chemical spills. While not tied to a specific EMS target, there has been a reduction in the number of site chemical spills as well as the total number of gallons spilled over the years. This suggests improved Line processes and procedures coupled with additional training have reduced this pathway for hazardous waste generation.

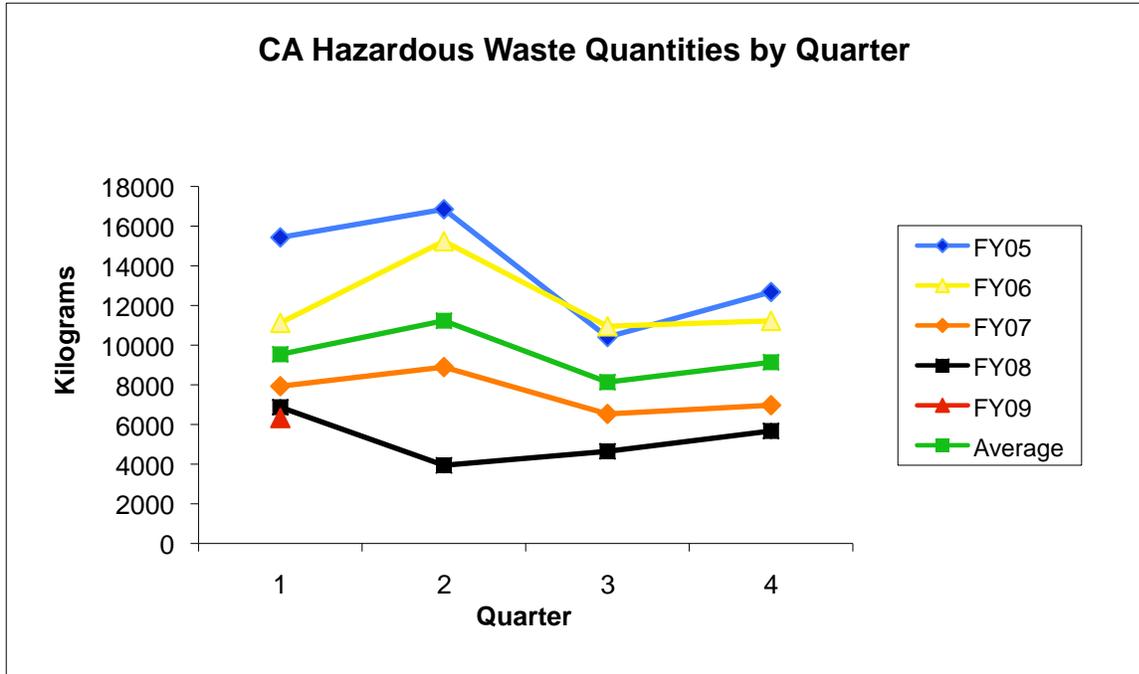


Figure 6-1 SNL/CA Hazardous Waste Quantities by Quarter

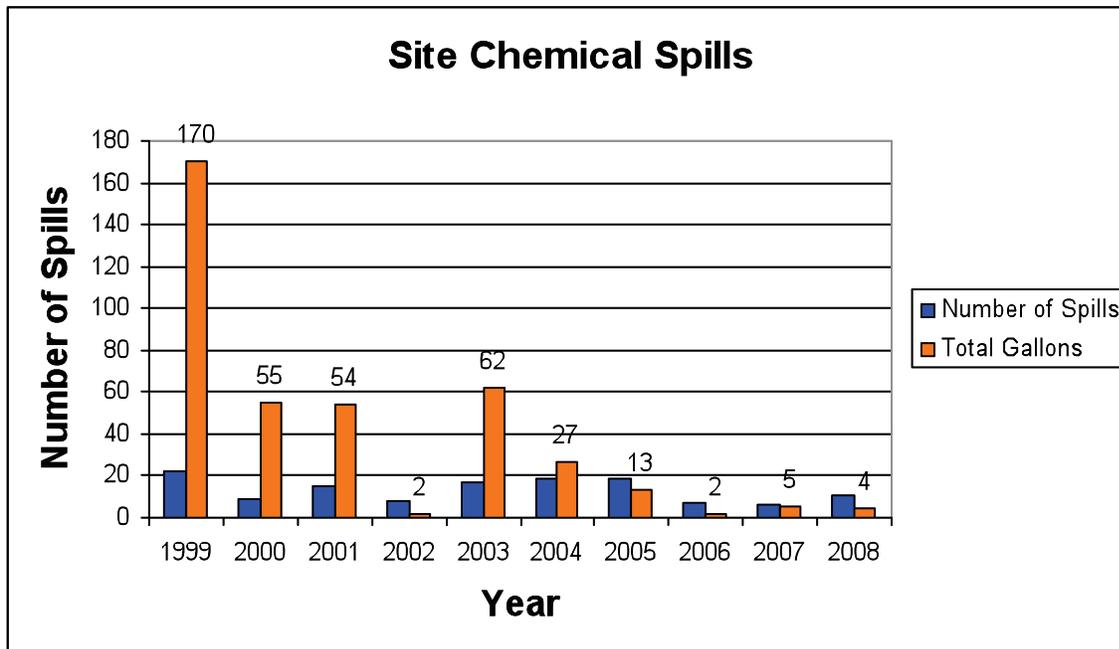


Figure 6-2 SNL/CA Chemical Spills

## 8 Quality Assurance

The WM Program applies the following program-specific elements to assure quality is maintained in data collection, analyses, and reporting:

- Online and hardcopy forms ensure that a standard process is followed for collection and management of waste data.
- All data input is reviewed for accuracy after the input is complete.
- Internal reports and documents are subjected to internal review and technical editing before finalizing.
- DOE/SSO and applicable SNL/CA staff review published reports before finalizing.
- Samples are collected for waste stream verification according to the Waste Analysis Plan in the Part B Permit.
- Sample results are compared to established criteria for the acceptability of data in the *Operating Procedure for Data Validation and Verification for the Environmental Monitoring Program*. This procedure contains methods for determining the accuracy, precision, completeness, comparability and applicability of the data.

### 8.1 Program Risk Assessment

The January 2009, WM Program updated a risk assessment (Appendix B) as part of the decision making process to determine the appropriate level of formality required for Program activities and identified six potential risks related to program activities. Table 7-1 lists each risk and the calculated risk category. It was determined that the risk associated with the WM Program was the risk of an accident or hazardous waste spill during pick-up, transport or at the waste facility or an incident at the waste facility. The overall risk for WM Program issues was determined to be medium. Measures taken by the WM Program to mitigate this risk are 1) routine WM personnel training, 2) maintaining operational controls including secondary containment, 3) building, vehicle and container inspections and 4) improve processes and Line training.

**Table 8-1 Waste Management Program Risks**

| Risk # | Risk   | Risk Category |
|--------|--|---------------|
| 1      | Spill or accident during waste pick up         | Medium        |
| 2      | Spill or accident during waste shipment        | Medium        |
| 3      | Spill or accident at SNL/CA waste facility     | Medium        |
| 4      | Incident at waste disposal facility            | Medium        |
| 5      | Site-wide Earthquake Induced Spill or Accident | Low           |
| 6      | Reduction of program funding by 10 - 30%       | High          |

For the medium risk category for Risk 1, the small quantities transported ensure that any spill would be small, requiring a minor cleanup effort. Given the nature of the waste currently

transported by the Waste Management Program, the likelihood of injury to personnel from a spill is remote.

For the medium risk category for Risk 2, regulations governing the packing of waste drums and other waste transportation regulations are intended to mitigate the severity of such accidents. A worst-case scenario would involve the breaching of several drums of SNL/CA waste during a highway accident. Such an accident would require minor environmental cleanup, and would not likely involve injury to the public or personnel.

For the medium risk category for Risk 3, release scenarios could range from a small chemical bottle (e.g. 100 mL) to several 55-gallon drums (in the event of an earthquake). The waste facility incorporated secondary containment in its design, so no release outside of the facility is envisioned but minor cleanup would be necessary.

For the medium risk category for Risk 4, SNL/CA would be responsible for the portion of the clean up apportioned to SNL/CA waste. A larger portion could be assigned if it was determined that SNL/CA was the *cause* of the incident. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget (\$310 million in FY 2008).

For the medium risk category for Risk 5, SNL/CA would be responsible for the on-site clean up and cost of waste disposal. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget (\$310 million in FY 2008).

For the high-risk category for Risk 6, Waste Management implemented a review of program activities that could be streamlined. A 10-30% reduction in program funding would result in decreased staffing, training, and purchases. Only those program activities that are required by regulation, Sandia policy, technical work documents, or DOE/NNSA would be conducted. Discretionary training and travel for program staff would be eliminated. Purchases for replacement equipment and equipment repair would be reduced. A reduction in Line training and support would occur.

## **8.2 Quality Significant Purchases Determination**

A Quality Significant Purchases Determination, Appendix C, has been completed in accordance with the Environmental Management Quality Assurance Program Plan. The Hazardous Waste activities of the WM Program do not have any quality significant items. This determination is consistent with the SNL/NM Hazardous Waste Operations determination of "Quality Significant Items".

However, sorbents, solidifiers, drums, boxes, contractor support, transporter and commercial Treatment Storage and Disposal Facilities (TSDFs) used for Low-Level Radioactive Waste and Mixed Waste are quality significant items. These items or services are procured or managed by SNL/NM's Regulated Waste/Nuclear Material Disposition Department 04139 (RWNMDD) according to their procedures as defined in relevant SNL/NM technical work documents.

## 9 Program Assessments

WM performed the assessments described below. All assessments were documented and retained in accordance with *OP471347 Administrative Procedures for Managing Sandia/CA ES&H Recorded Information*.

### 9.1 Follow-up on 2007 Program Self Assessments

The 2007 Program Self Assessment identified issues with Line under-compliance with requirements and WM Program documents out-of-date. The 2007 Program Self Assessment showed considerable improvement in up-to-date documentation. Line under-compliance continues to be identified in EP Rep. assessments and site Management Self Assessments.

### 9.2 2008 Program Self Assessment

The Program Self Assessment is an annual effort to determine the completeness, quality and efficiency of the program structure and management. It is also used to determine the alignment of the program with ISO14001 EMS requirements and principles.

The objective of this assessment is to assure that the program provides all of the required elements and continually strives for areas of improvement. This assessment includes a review of all procedures, processes, technical work documents, web pages, publications, communications, etc., of the program to assure that they are streamlined, accurate and current. The *Programmatic Document Review Form* is used to document this part of the self-assessment, as referenced in the *Quality Assurance of Data, Documents and Select Activities of the Environmental, Safety and Health Departments, 8516 and 8517*.

In 2008 the WM Program focused on select Waste Management business processes at SNL/CA. The assessment included the standard review of the currency of the web pages and Technical Work Documents and select business processes of SNL/CA Waste Management Program. The results were reported in the November 17, 2008, *Self-Assessment Report: EMS Waste Management Program assessment for FY09 Assessment Number 5370* (see Appendix D).

### 9.3 Line Performance Assessment

The Line Performance Assessment is an annual effort, part of the Program Self Assessment, to determine how well the line or site is implementing the provisions or requirements of the program or supporting specific program-related objectives/targets. The success or failure of the line or site to implement program requirements or provisions can be attributed to many things: culture, line management support, communications, program management, etc. (Note, poor program implementation by the line may not necessarily indicate poor program management or execution, but the Program Lead will consider whether these are contributing factors and take appropriate action.)

Significant line violations to program requirements that are discovered during this assessment are entered into the ES&H Self Assessment database for communications and tracking. (Note, the assessment is for the “big picture” and not just conducted to find violations.) The completed

finding form is submitted to the Division 8000 ES&H coordinator for entry into the self-assessment tracking system. These are then tracked to closure in the Division 8000 self-assessment process.

In conducting these assessments the Program Lead makes every effort to align with the scheduled Line Management Self Assessments conducted by the ES&H Coordinators. This minimizes the disruption to the Line and gains the manager's attention.

## **9.4 Environmental Programs Representative Program Assessment**

The Environmental Programs Representative (EP Rep.) performs and records informal assessments of line implementation of critical program elements. The following reports were completed in this annual report period. Only the WM Program related issues are included in detail in Appendix F Environmental Programs Representative Waste Management Issues. All issues that the EP Rep refers to the WM Program Lead are resolved by working with the owner of the issue or are given a finding and resolved as a routine part of the Line Self-Assessment Process. A common issue identified by the EP Rep. assessments is the on-going challenge to the Line waste generator to setup and properly manage their Satellite Accumulation Areas (SAA). This issue continues to be a focus for the WM program in 2008. The EP Rep. and the WM personnel routinely assess the Line for proper SAA management and provided on the spot training or annual instruction via *ENV112CA Hazardous Waste & Environmental Management Training (CA)*. The objective of this course is to provide SNL/CA personnel with the necessary information to ensure compliance with federal and state environmental regulations, Department of Energy requirements and SNL waste generator and satellite accumulation area (SAA) requirements.

## **9.5 Division Line Self-Assessment**

The Division Line self-assessment team led by the 8000 Division ES&H Coordinator at SNL/CA has undergone a significant process change in 2008. Only a limited number of assessments were completed in 2008 and four minor WM related findings were issued. These include: 1) improperly labeled waste in the fume hood, 2) hazardous waste can with an expired WDDR, 3) solder scrap is not being collected for recycling, and solder was seen on floor, and 4) large hazardous waste container does not have a WDDR. All these minor findings were closed during the assessments or shortly afterward.

# **10 Accomplishments**

In the past year, WM accomplished the following activities:

- The two major California-based regulators, CA/EPA/DTSC and the Alameda County Department of Environment Health audited the Waste Management Program and the Line generators. No findings were issues and the reports were complementary of Waste Management activities at SNL/CA.

- The oversight for the Radioactive/Mixed Waste management activities for SNL/CA was officially transferred to the Regulated Waste/Nuclear Material Disposition Department 04139 in September 2008. This includes the program budget, program procurement, Waste Certification, Quality Assurance, Program Auditing, Technical Work Documents oversight, Characterization, Packaging, Shipping, TSDF interfacing, Training and Records Management.
- All the mixed waste stored in WMF-961 was shipped to Perma-fix in August 2008. This effort was led by the Regulated Waste/Nuclear Material Disposition Department 04139 and supported by SNL/CA personnel in WM.
- All the low-level radioactive waste (2 - 55 gallon drums) stored in WMF-961 was shipped to SNL/NM in August 2008. These drums will be shipped to the DOE Nevada Test Site for burial in a routine low-level waste shipment from SNL/NM in FY2009. This effort was also led by the Regulated Waste/Nuclear Material Disposition Department 04139 and supported by SNL/CA personnel in WM.
- The new Clean Harbors disposal contract was completed and went into effect on 1/1/2009. This represents a new contract that takes advantage of the contract corporate Lockheed Martin has negotiated with Clean Harbors.
- Significant progress has been made in the cleanout and permit closure of the 910/310 circuit board prototyping laboratory. Full permit closure is expected in Spring 2009.
- WM continues to offer process evaluations for waste generators as part of the IDT process, waste generator training and as a separate site visit when requested.

## **11 Issues**

### **11.1 Contract Issues**

Two significant contract issues were challenges this year. The first was the new contract with our disposal company Clean Harbors Environmental Services Inc. The contract that SNL/CA had with Clean Harbors Environmental Services Inc. this year was an old contract originally written with Teris Inc. prior to Teris' merger with Clean Harbors Environmental Services Inc. in 2006. This old contract was amended many times over its lifetime and was difficult to administrate due to the many changes at SNL/CA and Teris/Clean Harbors Environmental Services Inc. The new contract put in place starting 1/1/2009 is based on a corporate contract Lockheed Martin has with Clean Harbors Environmental Services Inc. and should minimize many issues we had with the old contract.

The second contract issue was the transition of Pam Irish from SAIC Inc. to a staff augmentation contract position. Sandia has had a number of challenges with that corporately required transition for a number of contract personnel and most of the contract personnel moving from the expiring

SAIC contract to staff augmentation positions had many frustration challenges to overcome before the transition took place in late January 2009.

## **11.2 Funding Issues**

Funding issues continue to be a very significant issue in Waste Management at SNL/CA and at SNL/NM. With the loss of RTBF funding at the end of FY 2007 and the lack of stable IES funding the Waste Management programs at SNL/CA and SNL/NM have struggled to maintain efficient and regulatory compliant operations. A number of cost cutting measures have degraded the personnel team chemistry in the program and the general teamwork within the Environmental Management Department. The “one site/two labs” initiative with Lawrence Livermore National Laboratory and the new corporate “Cost Austerity” for 2009 is expected to further damage the already strained relationships between Line and Integrated Enabling Services (IES) and the relationships within IES organizations.

## **11.3 WIMS Application Issues**

The WIMS application including the WDDR and Chargeback portions were upgraded to Oracle Forms 10g. This transition has been very difficult form Waste Management personnel and Line waste generators. Numerous bugs have been reported and fixed with weekly updates to the software. The upgrade occurred in late September 2008 and the software has been a challenge to use ever since. While things are improving and the software is more usable, the software development need a significant increase in funding for additional developers to improve the software design to where it should be for effective, efficient and reliable use. Funding shortfalls are expected to prevent the software from being improved in the near term leading to operational inefficiencies, general frustration and possible regulatory compliance issues.

# **12 Trends**

## **12.1 Budget Trends**

The FY 2008 and FY2009 budgets were zeroed from FY 2007 due to the loss of the NW RTBF funding. This required Waste Management both at SNL/NM and SNL/CA to implement a full cost recovery chargeback. Waste Management under-recovered in the IES sponsored service center by \$255,000 in FY2008. This represents approximately a 25% shortfall of the budget. The shortfall was covered by IES. A shortfall is predicted in FY2009 for the Waste Management Service Center suggesting an increase in chargeback rates on the order of 30% will be required in FY2009 or FY2010.

## **12.2 Waste Generation Trends**

Over the past few years SNL/CA has seen a significant reduction in the volume of radioactive waste generated onsite. However, there are still several areas onsite, such as the Building 979 machine shop and Building 927 vault that contain radioactive sources or contaminated materials. These materials will eventually have to be disposed of as radioactive or mixed waste and will

result in a large volume of waste being generated and disposed of at that time. Once these areas are cleaned, the generation of radioactive waste should be minimal.

Over the past several years SNL/CA has seen a decrease in the generation of hazardous waste (see Table 10-1). SNL/CA anticipates the generation of hazardous waste will continue to decrease with the pollution prevention program activities increasing. The CY 2006 data is higher than the CY 2005 data largely due to the site-wide cleanout of hazardous materials.

**Table 12-1 Amount of Hazardous Waste Generated at SNL/CA**

| CY 00         | CY 01        | CY 02        | CY 03        | CY 04        | CY 05        | CY 06        | CY07         | CY08         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 126,909<br>kg | 60,619<br>kg | 73,229<br>kg | 56,505<br>kg | 85,382<br>kg | 31,200<br>kg | 56,530<br>kg | 38,326<br>kg | 29,767<br>kg |

### 12.3 Waste Regulatory Trends

There are more products falling under the new Universal Waste regulations. This could potentially lead to more waste streams for the P2 Program to manage. Universal waste rules allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes (e.g. batteries, mercury containing devices, electronic devices, cathode ray tubes (CRTs) and fluorescent lamps). However, SNL/CA manages some of these Universal Wastes as Hazardous Waste.

### 12.4 Waste Information Management System Application Development Trends

The Waste Information Management System (WIMS) and radioactive waste tracking system (RADTRACK) are currently under redevelopment to modernize and standardize the database/application tools technology, add required feature changes and to merge the two systems into a unified waste tracking system for SNL. This multi-year project has been funded and has begun to progress meeting the variety of goals and objectives. An ES&H champion, Waste Management stakeholders/customers group and a reinvigorated WIMS application team came together under the leadership of Anita Reiser and Michael Corem from SNL/NM. CY 2006 was a key year to as this team and project got on track to meet the future needs of WM and the waste generators who use the tool. The application development progress was slow in 2007 and 2008 limited by budget uncertainties. This is a disappointing development since WIMS needs to be modernized to work efficiently and appropriately in the corporate computing environment at SNL.

The WIMS application was transitioned from Oracle Forms 6i to Oracle Forms 10g in late September 2008 with numerous problems. Improvements have been made but many more is needed to complete the transition. There was also a change in WIMS application support team leadership October 1, 2008 with Norma Lauben replacing Michael Coram.

## 13 Goals and Objectives

A general EMS environmental goal for SNL/CA is to reduce the quantity of waste generated at SNL/CA. WM will continue to support the Pollution Prevention Program and other programs to achieve this goal. SNL/CA EMS WM objectives, targets, and actions that support this goal are discussed below.

### 13.1 FY2009 SNL/CA Environmental Objectives and Targets

(Reviewed by EMS Core Team on 8/19/08)

(Reviewed by EMS Advisory Committee on 9/17/08)

(Approved by SHEAC on 10/30/08)

#### General Environmental Operations.....

Objective: Provide exceptional environmental management for the SNL/CA site.

#### Targets:

- Receive zero findings per audit per environmental program as the result of annual DOE audits.
- Receive no more than 2 minor non-conformances as a result of ISO14001 certification audits.
- Receive no Notices of Violations (NOVs) as a result of any external regulatory agency audit.
- Maintain a level of published environmentally-related communications at 6 per month (total of 72/FY).
- Maintain a level of environmentally-related outreach activities at 4 per month (total of 48/FY).
- By the end of FY2010 achieve a 20% increase in the EMS awareness survey average score from an FY2008 baseline.

### 13.2 Waste Management Specific EMS Objectives and Targets

#### Hazardous Waste (Significant Aspect).....

Objective: Minimize the generation of hazardous waste.

Targets: None specifically identified, however, targets in the Pollution Prevention Program do support the objective to minimize the generation hazardous waste.

#### Radiological & Mixed Waste

Objective: Minimize the generation of radiological and mixed waste.

**Targets:** None specifically identified, however, targets in the Pollution Prevention Program do support the objective to minimize the generation radioactive and mixed waste.

### **13.3 Internal Waste Management Objectives and Targets for 2009**

Other internal goals set for WM include

- 1) Continue to assist the site in achieving a reduction of hazardous materials onsite. WM will continue to incorporate laboratory cleanouts into their routine schedule and offer process evaluations for waste generators as part of the IDT process, waste generator training and as a separate site visit when requested.
- 2) Close the treatment permit for 910/310 LECS

## Appendix A: Personnel Assignments

| Name          | Position  | Date associated with the Waste Management Program | Radioactive & Mixed Waste Management Field Activities | Hazardous Waste Management Field Activities |
|---------------|---|---|---|---|
| G. Shamber    | Manager, Environmental Management Department<br>Emergency Response Backup | Oct 2004  | No  | No**  |
| M. Brynildson | Waste Program Lead<br>Waste Program Engineer                              | July 2005   | Yes   | Yes   |
| J. Harris     | Waste Program Lead Backup<br>Emergency Response Backup                    | May 2002  | No  | No**  |
| L. Ford*      | Waste Program Engineer  | Jun 1997  | Yes   | Yes   |
| R. Oteri      | Waste Management Technician   | Jul 2001  | Yes   | Yes   |
| M. Clark*     | Emergency Response Backup   | Apr 2002  | No  | No**  |
| P. Irish*     | Field Chemist   | Jan 2005  | No**  | Yes   |
| S. Ayers      | Waste Management Technician   | Jan 2000  | No**  | Yes   |
| R. Holland    | Emergency Response Backup   | Jan 1997  | No  | No**  |
| D. Dicker     | Emergency Response Backup   | Mar 1996  | No  | No**  |
| L. Farren     | Emergency Response Backup   | Jul 1994  | No  | No**  |
| J. Chavarria  | Emergency Response Backup   | Jan 1997  | No  | No**  |
| D. Ross       | Emergency Response Backup   | Jan 1997  | No  | No**  |
| A. Sandoval   | Emergency Response Backup   | Jan 1997  | No  | No**  |

\* *Contractor Personnel*

\*\* *Backup Field Position Only*

## Appendix B: Waste Management Program Risk Assessment

### Waste Management Program Risk Assessment (Jan 2009)

The risk assessment process for the Waste Management 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  |
|--|--|
| <b>Very High</b>                           | <ul style="list-style-type: none"> <li>• Everything points to this occurring</li> </ul>  |
| <b>High</b>                                | <ul style="list-style-type: none"> <li>• <i>High chance</i> • <i>Lack of relevant processes or experience contribute to a high chance of occurrence</i></li> </ul> |
| <b>Medium</b>                              | <ul style="list-style-type: none"> <li>• <i>Even chance</i></li> </ul>   |
| <b>Low</b>                                 | <ul style="list-style-type: none"> <li>• <i>Not much of a chance</i></li> </ul>  |
| <b>Negligible</b>                          | <ul style="list-style-type: none"> <li>• <i>Negligible chance this will occur</i></li> </ul>   |

| CONSEQUENCE/ SEVERITY LEVEL | CONSEQUENCE/SEVERITY CRITERIA  |
|-----------------------------|--|
| <b>High</b>                 | <p><i>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 &gt;\$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 (&gt;\$10M)</i></p> |

|                   |  |
|-------------------|--|
| <b>Medium</b>     | <ul style="list-style-type: none"> <li>• Has the potential for adverse impact on Sandia's programmatic performance or the achievement of corporate strategic or operational objectives</li> <li>• Significant injury/illness -fully recoverable with a long recovery time</li> <li>• Significant environmental impact resulting in recovery actions lasting up to 5 years (e.g., major oil spill)</li> <li>• Results in Site/Area Emergency (affects multiple onsite facilities)</li> <li>• One of regulator "hot buttons" (e.g., NNSA, NMED)</li> <li>• Results in increased oversight of limited number of functions</li> <li>• 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) †</li> <li>• Unallowable costs or fines &gt;\$500K and &lt;\$1M</li> <li>• Adverse public opinion – moderate interest, limited PR problems of short duration (days)</li> <li>• Customer dissatisfaction results in partial loss of program</li> <li>• Significant failure to meet internal requirements</li> <li>• Loss of program within division (&gt;\$1M)</li> </ul> |
| <b>Low</b>        | <ul style="list-style-type: none"> <li>• Minimal injury/illness – Fully recoverable with a short recovery time</li> <li>• Minimal environmental impact that can be improved within days</li> <li>• Results in increased short-term oversight</li> <li>• Results in an Operational Emergency (affects a single onsite facility)</li> <li>• 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) †</li> <li>• Unallowable costs or fines &lt;\$500K</li> <li>• Adverse public opinion with short-term local negative publicity or embarrassment</li> </ul>  |
| <b>Negligible</b> | <ul style="list-style-type: none"> <li>• Little or no attention, might be discussed as lesson learned</li> </ul>   |

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

| <b>RISK GRADING LEVELS</b>      |                   |                             |               |               |               |
|---------------------------------|-------------------|-----------------------------|---------------|---------------|---------------|
|                                 |                   | <b>Consequence/Severity</b> |               |               |               |
|                                 |                   | <i>Negligible</i>           | <i>Low</i>    | <i>Medium</i> | <i>High</i>   |
| <b>Likelihood of Occurrence</b> | <i>Very High</i>  | <i>Low</i>                  | <i>Medium</i> | <i>High</i>   | <i>High</i>   |
|                                 | <i>High</i>       | <i>Low</i>                  | <i>Medium</i> | <i>High</i>   | <i>High</i>   |
|                                 | <i>Medium</i>     | <i>Low</i>                  | <i>Medium</i> | <i>Medium</i> | <i>High</i>   |
|                                 | <i>Low</i>        | <i>Low</i>                  | <i>Low</i>    | <i>Low</i>    | <i>Medium</i> |
|                                 | <i>Negligible</i> | <i>Low</i>                  | <i>Low</i>    | <i>Low</i>    | <i>Low</i>    |

## **Risks Associated with the Waste Management Program**

- 1. Spill or accident during waste pick up**
- 2. Spill or accident during waste shipment**
- 3. Spill or accident at SNL/CA waste facility**
- 4. Incident at waste disposal facility**
- 5. Site-wide Earthquake Induced Spill or Accident**
- 6. Reduction of program funding by 10%**

### **1. Spill or Accident During Waste Pick-up.**

#### **a. Identification of Risk**

During the transport of waste from the generator's location to the on-site waste transport truck, there is the possibility of an accidental spill. There is also the possibility of the waste transport truck having an accident on-site, causing a spill. There is also a potential for an accidental spill during the unloading of the on-site waste transport truck.

#### **b. Probability of Occurrence**

Given the number of waste pick-ups and the frequency of waste transport on-site, it is considered **High** that there will be an accidental spill during the lifetime of the SNL/CA facility.

#### **c. Consequence of Occurrence**

The small quantities transported ensure that any spill would be small, requiring a minor cleanup effort. Given the nature of the waste currently transported by the Waste Management Program, the likelihood of injury to personnel from a spill is remote. The overall consequence assigned is **Low**.

#### **d. Overall Risk Category**

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

### **2. Spill or Accident During Waste Shipment**

#### **a. Identification of Risk**

Small spills could occur during loading and unloading of a waste truck. These spills would typically be on the order of a single 55-gallon drum. Larger spills involving the entire contents of the truck could occur from highway accidents.

**b. Probability of Occurrence**

Given that several waste shipments are performed each year, and the number of highway miles traveled by each shipment, it is considered **High** that an accident will occur sometime during the lifetime of the SNL/CA facility.

**c. Consequence of Occurrence**

Regulations governing the packing of waste drums and other waste transportation regulations are intended to mitigate the severity of such accidents. A worst-case scenario would involve the breaching of several drums of SNL/CA waste during a highway accident. Such an accident would require minor environmental cleanup, and would not likely involve injury to the public or personnel. The consequence category assigned is **Low**.

**d. Overall Risk Category**

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

• **Accident at SNL/CA Waste Facility**

**a. Identification of Risk**

There is the possibility of an accident involving the release of hazardous materials.

**b. Probability of Occurrence**

Given the number of waste containers handled at the facility, it is considered **High** that there will be an accident involving the release of hazardous materials sometime during the lifetime of the SNL/CA site.

**c. Consequence of Occurrence**

Release scenarios could range from a small chemical bottle (e.g. 100 mL) to several 55-gallon drums (in the event of an earthquake). The waste facility incorporated secondary containment in its design, so no release outside of the facility is envisioned. Minor cleanup would be necessary, so the consequence category assigned is **Low**.

**d. Overall Risk Category**

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

**4. Incident at Waste Disposal Facility**

**a. Identification of Risk**

Incidents, such as fires are not unknown at waste disposal facilities. During 2005, there was a fire at the primary waste incineration facility SNL/CA sends waste to in Arkansas. No SNL/CA waste was involved in the fire, but the potential exists.

**b. Probability of Occurrence**

Given the recent history, the probability of occurrence is considered **High** that an incident will occur at a waste disposal facility handling SNL/CA waste at some time during the lifetime of the SNL/CA facility.

**c. Consequence of Occurrence**

SNL/CA would be responsible for the portion of the clean-up apportioned to SNL/CA waste. A larger portion could be assigned if it was determined that SNL/CA was the *cause* of the incident. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget (\$310 million in FY 2008), therefore, the consequence is **Low**.

**d. Overall Risk Category**

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

**5. Site-wide Earthquake Induced Spill or Accident**

**e. Identification of Risk**

Incidents, such as spills and fires are not unknown due to earthquakes at facilities.

**f. Probability of Occurrence**

Given the recent history, the probability of occurrence is considered **Low** that an earthquake of sizable magnitude will occur affecting SNL/CA at some time during the lifetime of the SNL/CA facility. A moderate earthquake in 1981 caused significant damage to SNL/CA including minor chemical spillage.

**g. Consequence of Occurrence**

SNL/CA would be responsible for the on-site clean-up and cost of waste disposal. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget (\$310 million in FY 2008), therefore, the consequence is **Low**.

**h. Overall Risk Category**

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

## 6. Reduction in Program Funding by 10 - 30%

### A. Identification of Risk

SNL is experiencing pressure to reduce expenses for indirect-funded and direct-funded organizations, including Environmental Management. The loss of NW funding for Waste Management has required Waste Management to be a full recovery chargeback program beginning in FY 2008. Because the majority of Waste Management Program expenditures are for labor, a 10 - 30% reduction in funding would significantly impact staffing. A reduction in staffing would result in a reduced level of service to line organizations and a significant increase to perform WM operations.

### B. Probability of Occurrence

Increasing constraints on site budgets is expected to continue for the next several years. This increasing budget pressure and the likely shortfall in the chargeback recovery makes it probable that the funding for the Waste Management Program will decrease by 10 - 30% from FY 2008 levels is **High**. The under-recovery in FY2008 (\$255,000) was covered by corporate IES funding.

### C. Consequence of Occurrence

A 10 - 30% reduction in program funding would result in decreased staffing, training, and purchases. Only those program activities that are required by regulation, Sandia policy, technical work documents, or DOE/NNSA would be conducted. Discretionary training and travel for program staff would be eliminated. Purchases for replacement equipment and equipment repair would be reduced. A reduction in Line training and support would occur.

An occurrence could occur as a result Line under compliance and documentation inaccuracies. For these reasons, the consequence of a 10 - 30% reduction in program funding is identified as **Medium**.

### d. Overall Risk Category

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

## Appendix C: Waste Management Program Quality Significant Purchases Determination



**Sandia National Laboratories**

Operated for the U.S. Department of  
Energy by Sandia Corporation  
Livermore, California 94551-0969

*date:* September 25, 2008

*to:* Gary Shamber, 8516  
Manager, Environmental Management Department

*from:* Mark Brynildson, 8516  
Waste Management Program Lead

*subject:* Quality Significant Purchases - Updated

1. Program title: Waste Management Program

2. Risk level of the program: The highest risk level was determined to be medium.

3. Types of material/instruments/equipment used in the program:

- Chemicals for preserving samples
- Chemicals (mineral oil for stabilization of reactive metal powders)
- Absorbent (vermiculite, solidisorb, pigs, dikes)
- Solidifiers
- pH probes/paper
- Oxidizer test paper
- Chlorinated oil test kit
- PPE
- Communication devices (phones & pagers)
- Scales
- Barcode Scanners
- Compactors
- Forklift, forklift charger, drum grabber, slings and straps
- Drum Dolly
- Waste (radioactive, mixed and hazardous) containers (drums, boxes)
- Explosives Magazine
- Portable tanks
- Secondary containment pallets
- Bung wrench

- Drum wrench
- Torque wrench
- Impact wrench
- Miscellaneous hand tools
- Waste Truck
- Pickup truck
- HEPA Filters
- Geiger counter
- WIMS database
- Desktop computers and printers
- Hazardous Waste Transporter
- Hazardous Waste TSDF
- Rad/Mixed waste transporter
- Rad/Mixed Waste TSDF

#### 4. Criteria used to evaluate these to determine quality significance:

A potential failure of the items listed was evaluated against corporate quality-significant criteria. It was determined that such a failure:

- Will not cause a significant adverse impact to program cost, schedule, or performance in the event of a failure;
- Will not significantly impact the safe operation of a facility or activity;
- Will not involve the use, handling, or storage of radioactive material or radiation-generating devices, or involve exposure to ionizing radiation;
- Do not relate to the design, analysis, manufacture, or assembly of hardware, equipment, and software for present or future use with radioactive material;
- Will not be used in any safety-significant or safety-critical system, component, or application whose failure could adversely affect people, property, or the environment.

#### 5. Determination on quality significant items:

The Hazardous Waste activities of the Waste Management Program has only one quality significant item used in operations - forklifts. This determination is consistent with the "Quality Significant Items" determination in the Hazardous Waste Operations at SNL/NM. When a forklift is procured it will be done according to the quality significant procurements requirements.

However, sorbents, solidifiers, drums, boxes, contractor support, transporter and commercial Treatment Storage and Disposal Facilities (TSDFs) used for Low-Level Radioactive Waste and Mixed Waste are quality significant items. These items or services are procured and managed by SNL/NM's Regulated Waste/Nuclear Material Disposition Department 04139 (RWNMDD) according to their procedures as defined in relevant SNL/NM technical work documents.

#### 6. Determination on S/CI concerns/issues:

The Waste Management Program **does have a piece of equipment (forklift) that have the potential for suspect/counterfeit items that would be of a concern to the program. These items include bolts used in the critical lifting mechanisms of the forklifts.** The forklifts will be maintained and routinely inspected for suspect/counterfeit items by the SNL/CA Maintenance Engineering Department or their approved maintenance contractors.

## Appendix D: Waste Management Program Self-Assessment

Self Assessment Report  
Assessment ID: 5370

### EMS Waste Management Program FY09

#### *Assessment Information*

ID: 5370  
Title: EMS Waste Management Program FY09  
Description: EMS Waste Management Program assessment for FY09  
Originating Mgt. Entity: Division » 8000 California Laboratory  
Assessing Organization: 08516      Manager: SHAMBER,GARY W.      Division: 08000  
Org Being Assessed: 08000      Manager: HOMMERT,PAUL J.      Division: 08000  
Type: Line Assess the Line  
Status: Conducted  
Dates: 09/16/2008 - 11/17/2008

#### Section 1 *Executive Summary*

##### 1.1 Who/What was assessed

SNL/CA Waste Management Program TWDs, webpages and other related documents were assessed.

##### 1.2 Overview of Scope

The self-assessment focused on the Radioactive Waste Management Business Processes. The assessment also included the standard review of the Waste Management Web Pages and Technical Work Documents.

##### 1.3 Why Assessment was performed

This assessment is the EMS required annual SNL/CA Waste Management Program assessment.

## 1.4 The Assessment resulted in the following:

- 0 Significant Finding(s)
- 0 Minor Finding(s)
- 11 Observation(s)
- 0 Noteworthy Practice(s)
- 0 None - Acceptable Practice(s)

Eleven observations were recorded.

## 1.5 What happens next

All TWDs and webpages were updated.

## 1.6 Who to contact if there are questions

Mark Brynildson (mebryni@sandia.gov - 925-294-3150)

### *Section 2 Introduction*

#### 2.1 Background

As part of the EMS requirements in the Environmental Management Department, 08516, an annual program assessment is required.

#### 2.2 Purpose of assessment

This is the annual SNL/CA Waste Management Program Assessment.

#### 2.3 Location(s) Assessed

None

#### 2.4 Planning Documents Reviewed

PHS  
TWD

#### 2.5 Scope/Criteria

ES&H » Environmental Protection » Hazardous Waste Management

#### 2.6 Associated Document Link(s)

None

### *Section 3 Assessment Performance*

#### 3.1 Assessment Team Members

| Name | Org. | Role |
|------|------|------|
|------|------|------|

BRYNILDSON, MARK E. 08516 Lead Assessor  
BARNES, BRENT DAVID 08518 Creator

### 3.2 Personnel Interviewed

None

### 3.3 Documents Reviewed

| Document  | Number  | Description  | Revision | Type | Date of Review |
|---|---------|--|----------|------|----------------|
| Waste Management TWDs Set 4   | various | A variety of Waste Management TWDs are listed in the Notes field | various  | TWDs | TBD            |
| Notes: SAND2008-1246, Sandia National Laboratories, California Waste Management Program Annual Report, Printed February 2008 SNL/CA Hazardous Waste Facility Permit and Hazardous Waste Operation Plan, Originally Submitted September 2003, Approved March 30, 2004, Revised May 2007 SP485007, Issue L, Low-Level Radioactive Waste and Mixed Waste Storage Facility, Building 961, 11/13/2007. NTSWAC Implementation Crosswalk (NIC), Revision 7, draft as of 10/9/2008. |         |  |          |      |                |
| Waste Management TWDs Set 3   | various | A variety of Waste Management TWDs are listed in the Notes field | various  | TWDs | TBD            |
| Notes: OP472236, Issue B, Management of Low-Level Radioactive Waste and Mixed Waste at SNL/CA, 3/13/08. OP472245, Issue A, Measuring and Testing Calibration Equipment, 8/20/2007 PHS SNL06A00517-003, Radiation Protection Operations @ Sandia California, 6/9/2008 PHS SNL07A00686-017, Waste Management Program at SNL/CA, 8/26/2008   |         |  |          |      |                |
| Waste Management TWDs Set 2   | various | A variety of Waste Management TWDs are listed in the Notes field | various  | TWDs | TBD            |
| Notes: ES&H Manual Section 20A ? Hazardous Waste Management at SNL/CA, 9/26/2008 ES&H Manual Section 20B ? Radioactive Waste Management at SNL/CA, 9/26/2008 ES&H Manual Section 20C ? Mixed Waste Management at SNL/CA, 9/26/2008 FOP 02-02, Off-Site Shipments, Rev. 3, 7/23/07 OP471125, Issue F, Nonconforming Item Identification and Tracking, 11/20/2007 OP471787, Issue D, Hazardous Waste Operations at SNL/CA, 7/21/2008  |         |  |          |      |                |
| Waste Management TWDs Set 1   | various | A variety of Waste Management TWDs are listed in the Notes field | various  | TWDs | 10/30/2008     |
| Notes: ? AP800000, Issue C, Building Security Plan for the Hazardous Waste Treatment and Storage Facility (HWTSF); Building 961 and 9611, 1/22/2008 ? AOP 94-18, Nonconforming Processes and Items, Rev. 12, 7/30/2007 ? DOE/NV-325-Rev. 7, June 2008, Nevada Test Site Waste Acceptance Criteria ? ES&H Manual Section 19B ? Radioactive Waste Management, 9/25/2008 ? ES&H Manual Section 19C ? Mixed Waste Management, Revision Date 6/16/2006                           |         |  |          |      |                |

### 3.4 Definitions

**Finding:** A statement of fact based on objective evidence documenting an act or condition that does not meet requirements, policies, or procedures required by law, a regulatory agency, DOE, Sandia CPR, or a formally-invoked, site-specific, standard.

**Significant Finding:** From self-assessments, any Finding that rate High or Medium in risk level (probability of occurrence and consequence criteria per the Risk Management process) and requires formal causal analysis, corrective action planning, verification, and entry into the Corporate CATS application.

**Minor Finding:** Any Finding from self-assessments that rate Low in risk level (probability of occurrence and consequence criteria per the Risk Management process).

**Observation:** A statement of fact based on objective evidence documenting an act or condition that does not violate a requirement but may need improvement.

**Noteworthy Practice:** A process or condition indicating exceptional or innovative policy, practice, or performance.

**None - Acceptable Practice:** A process or condition with no observed problems.

#### *Section 4 Significant Findings*

This Assessment resulted in 0 Significant Finding(s).

#### *Section 5 Minor Findings*

This Assessment resulted in 0 Minor Finding(s).

#### *Section 6 Observations*

This Assessment resulted in 11 Observation(s).

#### **Observation No. 1**

There is a conflict between the stated scope of OP471787, Hazardous Waste Operations at

SNL/CA, and the actual content of the OP. Section 1.2 reads "Excepted from the scope of this procedure is low-level radioactive waste and mixed waste." Section 1.1 implies that the OP applies only to Building 9611. But the content of 2008-09-05 SNL/CA the OP repeatedly mentions Building 961 or rad waste shipments in Section 4.0 (Procedures) and Section 5.0 (Records), Attachment 7.2, Attachment 7.5, Attachment 7.7, Attachment 7.10, Attachment 7.11, Attachment 7.16 (which contains Radioactive Shipment Information), and Attachment 7.21 (which discusses accidents and spills involving SNL/CA mixed waste or low-level waste shipments).

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Result Associated Document Link(s)

None

## Observation No. 2

Requirements for marking containers and placarding on-site transport vehicles during radioactive waste pick-ups are not clearly and consistently stated in OP472236, Management of Low-Level Radioactive Waste and Mixed Waste at SNL/CA. " Section 10.3 reads Rad Yellow III label and appropriate placard shall be placed on the transport vehicle if dose rate is 50 mrem/hr on contact. " Section 10.4 reads Rad Yellow III label if dose rate is >50 mrem/hr on contact (see previous section). " Section 10.5 reads If dose rate of a container is >50 mrem/hr on contact, ensure that a Rad Yellow III label is applied to the container and the vehicle is appropriately placarded.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Result Associated Document Link(s)

None

## Observation No. 3

Section 7.0 of OP472236, Management of Low-Level Radioactive Waste and Mixed Waste at SNL/CA, states that Any waste kept beyond one year at the Facility shall be tracked as a nonconforming item until resolved, as referenced in OP471125. However, OP471125, Nonconforming Item Identification and Tracking, says that This operating procedure describes the process to identify, correct, and track materials or conditions in the Hazardous Waste Building 9611 and directs the reader to See AOP 94-18, Nonconforming Processes and Items for items identified in the Radioactive and Mixed Waste Building 961. OP472236 has additional instances where OP471125 is referenced along with AOP 94-18.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Result Associated Document Link(s)

None

## Observation No. 4

The scope section of SP485007, Low-level Radioactive Waste Building 961, reads This SOP describes the non-radiological hazards and preventive controls associated with stored wastes and waste handling activities with mitigating emergency 2008-09-05 SNL/CA Radioactive Waste Certification Program Phyllis Peterson, 4139 Department Lead Auditor response procedures. The SOP then goes on to discuss ionizing radiation hazards and the responsibilities of RCTs.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Result Associated Document Link(s)

None

## Observation No. 5

Activities that occur in Building 961 are not clearly identified in SP485007, Low-level Radioactive Waste Building 961. The scope of SP485007 states that radioactive work is permitted in Building 961 as long as the work does not generate a contamination area. However, the SOP implies that the ultrasonic cleaner is still used for radioactively contaminated items and the fume hood is used for non-waste work with potential airborne hazards. Section 5.3 of the SOP states that no regulated chemicals are routinely used in Building 961, but Section 6.3 states that hazardous solvents shall not be discharged to the LECS via the decontamination sink.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Result Associated Document Link(s)

None

## Observation No. 6

SP485007, Low-level Radioactive Waste Building 961, Section 7.3.5 reads Authorized Users shall receive waste in Bldg 961 only if it meets the waste acceptance criteria as outlined in GN470075, Guidelines for Waste Generators at SNL/CA or the ES&H Manual, Chapter 20 upon publication. Waste not meeting the acceptance criteria is refused, tracked as a nonconforming item pending action under AOP 94-18, Nonconforming Processes and Items, or segregated from the waste certification process. Chapter 20 of the ES&H Manual does not directly address waste acceptance criteria.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Result Associated Document Link(s)

None

## Observation No. 7

Appendix G of the SNL/CA Permit creates conflicts in roles and responsibilities under the new program. For example, the responsibilities of the Waste Program Engineer include Maintain liaison with state and federal agencies, including DOE/Nevada. However SNL/NM procedures state that the Waste Certification Official (WCO) is responsible for communication with NNSA/NSO (formerly DOE/Nevada). The WPE is listed as responsible for representing SNL/CA at DOE meetings, which also duplicates the responsibilities of the WCO. The WPE also determines methods and means for storage and disposal of radioactive waste, which conflicts with the roles and responsibilities of the non-nuclear operations supervisor (NNOS) in the combined program. The Radioactive Waste Representative is listed as being responsible for maintaining operations in Building 961, including manifesting. Under the new program, manifests will be prepared by the RWNMDD. The Field Chemist is listed as responsible for waste profiles and LDR notifications, but for SNL/CA mixed waste these are the responsibility of the RWNMDD Waste Characterization team.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Result Associated Document Link(s)

None

## Observation No. 8

The PHS SNL7A00686-017 Waste Management Program at SNL/CA needs updating to incorporate TWDs changes.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Waste Management » Operations

Result Associated Document Link(s)

None

## Observation No. 9

SNL/CA Waste Management Program web pages need updating.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Waste Management » Waste Management Program

Result Associated Document Link(s)

None

## Observation No. 10

ES&H Manual Guidance for Waste Management at SNL/CA need updating

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Waste Management » Waste Management Program

Result Associated Document Link(s)

None

## Observation No. 11

AP800000 needs updating to agree with all the TWDs for activities in Buildings 961/9611.

Trending Code: Documents and Records

Result Location(s):

None

Result Criterion: ES&H » Waste Management » Operations

Result Associated Document Link(s)

None

### *Section 7 Noteworthy Practices*

This Assessment resulted in 0 Noteworthy Practice(s).

### *Section 8 None - Acceptable Practices*

This Assessment resulted in 0 None - Acceptable Practice(s).

### *Section 9 Improvement Action Details*

#### **Observation No. 1**

There is a conflict between the stated scope of OP471787, Hazardous Waste Operations at SNL/CA, and the actual content of the OP. Section 1.2 reads "Excepted from the scope of this procedure is low-level radioactive waste and mixed waste." Section 1.1 implies that the OP applies only to Building 9611. But the content of 2008-09-05 SNL/CA the OP repeatedly mentions Building 961 or rad waste shipments in Section 4.0 (Procedures) and Section 5.0 (Records), Attachment 7.2, Attachment 7.5, Attachment 7.7, Attachment 7.10, Attachment 7.11, Attachment 7.16 (which contains Radioactive Shipment Information), and Attachment 7.21 (which discusses accidents and spills involving SNL/CA mixed waste or low-level waste shipments).

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

**IA No: 5370-O1-IA1**

IA Type: Fixed During Assessment

Actual Completion Date: 11/13/2008

Description: OP471787 was updated 11/13/2008

Comments: None

IA Associated Document Link(s):

None

## Observation No. 2

Requirements for marking containers and placarding on-site transport vehicles during radioactive waste pick-ups are not clearly and consistently stated in OP472236, Management of Low-Level Radioactive Waste and Mixed Waste at SNL/CA. " Section 10.3 reads Rad Yellow III label and appropriate placard shall be placed on the transport vehicle if dose rate is 50 mrem/hr on contact. " Section 10.4 reads Rad Yellow III label if dose rate is >50 mrem/hr on contact (see previous section). " Section 10.5 reads If dose rate of a container is >50 mrem/hr on contact, ensure that a Rad Yellow III label is applied to the container and the vehicle is appropriately placarded.

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: 5370-O2-IA1

IA Type: Fixed During Assessment

Actual Completion Date: 11/13/2008

Description: OP472236 was updated 11/13/2008

Comments: None

IA Associated Document Link(s):

None

## Observation No. 3

Section 7.0 of OP472236, Management of Low-Level Radioactive Waste and Mixed Waste at SNL/CA, states that Any waste kept beyond one year at the Facility shall be tracked as a nonconforming item until resolved, as referenced in OP471125. However, OP471125, Nonconforming Item Identification and Tracking, says that This operating procedure describes the process to identify, correct, and track materials or conditions in the Hazardous Waste Building 9611 and directs the reader to See AOP 94-18, Nonconforming Processes and Items for items identified in the Radioactive and Mixed Waste Building 961. OP472236 has additional instances where OP471125 is referenced along with AOP 94-18.

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

The following Improvement Action(s) have been deleted: 5370-O3-IA1

IA No: 5370-O3-IA2

IA Type: Fixed During Assessment

Actual Completion Date: 11/17/2008

Description: OP471125 was updated 11/17/2008

Comments: None

IA Associated Document Link(s):

None

## Observation No. 4

The scope section of SP485007, Low-level Radioactive Waste Building 961, reads This SOP describes the non-radiological hazards and preventive controls associated with stored wastes and waste handling activities with mitigating emergency 2008-09-05 SNL/CA Radioactive Waste Certification Program Phyllis Peterson, 4139 Department Lead Auditor response procedures. The SOP then goes on to discuss ionizing radiation hazards and the responsibilities of RCTs.

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: 5370-O4-IA1

IA Type: Fixed During Assessment

Actual Completion Date: 11/13/2008

Description: SP485007 was updated 11/13/2008

Comments: None

IA Associated Document Link(s):

None

## Observation No. 5

Activities that occur in Building 961 are not clearly identified in SP485007, Low-level Radioactive Waste Building 961. The scope of SP485007 states that radioactive work is permitted in Building 961 as long as the work does not generate a contamination area. However, the SOP implies that the ultrasonic cleaner is still used for radioactively contaminated items and the fume hood is used for non-waste work with potential airborne hazards. Section 5.3 of the SOP states that no regulated chemicals are routinely used in Building 961, but Section 6.3 states that hazardous solvents shall not be discharged to the LECS via the decontamination sink.

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: 5370-O5-IA1

IA Type: Fixed During Assessment

Actual Completion Date: 11/13/2008

Description: SP485007 was updated 11/13/2008

Comments: None

IA Associated Document Link(s):

None

## Observation No. 6

SP485007, Low-level Radioactive Waste Building 961, Section 7.3.5 reads Authorized Users shall receive waste in Bldg 961 only if it meets the waste acceptance criteria as outlined in GN470075, Guidelines for Waste Generators at SNL/CA or the ES&H Manual, Chapter 20 upon publication. Waste not meeting the acceptance criteria is refused, tracked as a nonconforming item pending action under AOP 94-18, Nonconforming Processes and Items, or segregated

from the waste certification process. Chapter 20 of the ES&H Manual does not directly address waste acceptance criteria.

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: [5370-O6-IA1](#)

IA Type: Fixed During Assessment

Actual Completion Date: 11/13/2008

Description: SP485007 was updated 11/13/2008

Comments: None

IA Associated Document Link(s):  
None

## Observation No. 7

Appendix G of the SNL/CA Permit creates conflicts in roles and responsibilities under the new program. For example, the responsibilities of the Waste Program Engineer include Maintain liaison with state and federal agencies, including DOE/Nevada. However SNL/NM procedures state that the Waste Certification Official (WCO) is responsible for communication with NNSA/NSO (formerly DOE/Nevada). The WPE is listed as responsible for representing SNL/CA at DOE meetings, which also duplicates the responsibilities of the WCO. The WPE also determines methods and means for storage and disposal of radioactive waste, which conflicts with the roles and responsibilities of the non-nuclear operations supervisor (NNOS) in the combined program. The Radioactive Waste Representative is listed as being responsible for maintaining operations in Building 961, including manifesting. Under the new program, manifests will be prepared by the RWNMDD. The Field Chemist is listed as responsible for waste profiles and LDR notifications, but for SNL/CA mixed waste these are the responsibility of the RWNMDD Waste Characterization team.

Result Criterion: ES&H » Radioactive & Mixed Waste » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: [5370-O7-IA1](#)

IA Type: Further Action Required    IA Status: Open

Owner: Name: BRYNILDSON,MARK E.    Org: 08516

Estimated Completion Date: 12/31/2009    Revised Completion Date: n/a

Actual Completion Date: TBD

Description: Revise Appendix G of the WMF Facility Part B Permit

Comments: None

IA Associated Document Link(s):  
None

Actions taken to verify satisfactory completion:  
TBD

Evaluation of improvement actions (satisfactory completion, not satisfactory / why):  
TBD

Verified By: Name: TBD    Org: TBD    Verification Date: TBD

## Observation No. 8

The PHS SNL7A00686-017 Waste Management Program at SNL/CA needs updating to incorporate TWDs changes.

Result Criterion: ES&H » Waste Management » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: 5370-O8-IA1

IA Type: Fixed During Assessment

Actual Completion Date: 10/21/2008

Description: SNL7A00686-018 Waste Management Program at SNL/CA was updated 10/21/2008

Comments: None

IA Associated Document Link(s):

None

## Observation No. 9

SNL/CA Waste Management Program web pages need updating.

Result Criterion: ES&H » Waste Management » Waste Management Program

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: 5370-O9-IA1

IA Type: Fixed During Assessment

Actual Completion Date: 10/21/2008

Description: SNL/CA Waste Management Program web pages updated 10/21/2008

Comments: None

IA Associated Document Link(s):

None

## Observation No. 10

ES&H Manual Guidance for Waste Management at SNL/CA need updating

Result Criterion: ES&H » Waste Management » Waste Management Program

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: 5370-O10-IA1

IA Type: Fixed During Assessment

Actual Completion Date: 09/25/2008

Description: ES&H Manual Chapter 20 was published

Comments: None  
IA Associated Document Link(s):  
None

## Observation No. 11

AP800000 needs updating to agree with all the TWDs for activities in Buildings 961/9611.

Result Criterion: ES&H » Waste Management » Operations

Organization Being Assessed:

Org: 08000    Manager: HOMMERT,PAUL J.    Division: 08000

IA No: 5370-O11-IA1  
IA Type: Fixed During Assessment  
Actual Completion Date: 11/04/2008  
Description: AP800000 was updated 11/04/2008  
Comments: None  
IA Associated Document Link(s):  
None

## Appendix E: Waste Management Program Self-Assessment Document Checklist

### Program Documents Review

Organization: 08516 Program: Waste Management

Date: 11/12/2008 Signature: Mark E. Brynildson  
Program Lead

| Document Type        | Document Title  | Review Complete / Date                    | Changes Made   |
|----------------------|---|---|--|
| Operating Procedures | OP471125 - Nonconforming Item Identification and Tracking<br>-----<br>Note: Updated 11/08                               | <input checked="" type="checkbox"/> 11/08 | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |
|                      | OP471310 - Control of Samples by the Environmental Operations Dept<br>-----<br>Note: Reviewed 10/08 No changes required | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |
|                      | OP471613 – Verification of Laboratory Chemical Analysis Data<br>-----<br>Note: Reviewed 10/08 No changes required       | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |
|                      | OP471619 – Building 961 LECs Sump Operation<br>-----<br>Note: Reviewed 10/08 No changes required                        | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |
|                      | OP472180 – Operating the RAM FLAT Compactor<br>-----<br>Note: Reviewed 10/08 No changes required                        | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |
|                      | OP472236 – Management of Low-Level Radioactive and Mixed Waste at SNL/CA<br>-----<br>Note: Updated 11/08                | <input checked="" type="checkbox"/> 11/08 | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |
|                      | OP472245 – Measuring and Testing Equipment Calibration  | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |

|             |   |   |  |
|-------------|---|---|--|
|             | -----<br>Note: <b>Reviewed 10/08 No changes required</b>  |   |  |
|             | SP473525 – Standard Operating Procedures for the Hazardous Waste Facility, Bldg 9611<br>Note: <b>Reviewed 10/08 No changes required</b> | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |
|             | SP485007 – Low-Level Radioactive Waste, Bldg 961<br>Note: <b>Updated 11/08</b>  | <input checked="" type="checkbox"/> 11/08 | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |
|             | AP800000 - Building Security Plan for Buildings 961 and 9611<br>Note: <b>Updated 11/08</b>  | <input checked="" type="checkbox"/> 11/08 | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |
| ES&H Manual | Chapter 20 of the ES&H Manual “Waste Management at SNL/CA”<br>Note: <b>Updated 9/08</b>   | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |
| PHS         | SNL7A00686<br>Note: <b>Updated 10/08</b>  | <input checked="" type="checkbox"/> 10/08 | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |
| Web Pages   | General ES&H Web Page<br>Note: <b>Reviewed 10/08 Changes completed</b>  | <input checked="" type="checkbox"/> 10/08 | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |
|             | Waste Management Program Web Pages<br>Note: <b>Reviewed 10/08 Changes completed</b>   | <input checked="" type="checkbox"/> 10/08 | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |
| Permit      | RCRA Part B Permit<br>Note: <b>Permit up-to-date</b>  | <input checked="" type="checkbox"/> 10/08 | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |

## Appendix F: Environmental Programs Representative - Waste Management Issues

### *Environmental Programs Representative Center 8100 Assessment of Environmental Programs April, 2008*

#### **Waste Management Concerns:**

- There were several examples of the misuse or misapplication of the “Empty” stickers for empty containers (previously containing hazardous materials) and the improper management of those containers. This is a relatively new method for managing potentially hazardous waste and although it provides relief from hazardous waste regulations, if not properly managed the site may receive fines from our outside regulators for improper hazardous waste storage.  
Action: The EP Rep and Pollution Prevention staff will provide additional communications regarding the proper identification and management of empty container.
- 910/225, Solder scrap recycling container was beyond the 1-year accumulation date.  
Action: B. McCoy was provided with new containers and the out-of-compliance container was removed by Pollution Prevention. No further action required
- 968/116 Breezeway, Empty containers were found to be overflowing the storage tray.  
Action 1: Waste Management performed a pickup the day these were noted by the EP Representative.  
Action 2: EP Rep suggested owners should obtain a larger drum to collect empty containers and to call the ES&H hotline for pickup when full.  
Action 3: Pollution Prevention will set a routine pickup schedule for this area.
- 968/116 breezeway, several bags of tip storage trays were laying on dock, still in bio bags, some of them broken and spilling the contents. Although Dave Brekke assured that these had been autoclaved and were not hazardous bio waste the “appearance of mismanagement of hazardous waste” would raise potential concerns by any hazardous waste regulator inspector.  
Action: For this reason the Environmental Manager advised Pollution Prevention and 8100 staff to stop any future attempts to recycle this waste stream. It was advised that these trays be managed similar to other solid bio waste.

### *Environmental Programs Representative Center 8200 Assessment of Environmental Programs April, 2008*

#### **Waste Management Noteworthy Practices**

This assessment indicated a general overall increase of Environmental awareness by 8200 members of the workforce. They indicated that they were knowledgeable about the environmental impacts of their specific activities and were receptive to suggestions made by the EP Rep during the assessment. Additionally, several staff members asked for continued guidance and advice on reducing waste streams, proper recycling and achieving our site EMS goals. Following are some noteworthy practices that deserve special mention:

- 8200 OMAs, Most OMAs were knowledgeable of how to dispose of unwanted recyclable and hazardous waste. Two were unaware but expressed interest in learning the correct way for managing these items. The EP Rep noticed a significant decline in the amount of aerosol cleaners being used in the office environment; this behavior appears to be the result of recent campaigns by both Health and Safety and Environmental Management on improving site awareness about the potentially adverse impact that aerosols may have on individual safety as well as the requirement to manage aerosols as hazardous waste. Additionally, battery-recycling envelopes were readily available and battery collection points were observed.

### **Waste Management Concerns:**

- 910/110, 225, 218A, Solder waste collection cans were over the 1 year accumulation date.  
Action 1: The EP Rep identified new owners and informed them of proper protocol for managing solder waste.  
Action 2: Pollution Prevention staff provided pickup and delivery of new accumulation containers.
- Several issues regarding the misuse or misapplication of the “Empty” stickers for empty containers (previously containing hazardous material) and the improper management of those containers. This is a relatively new method for managing potentially hazardous waste and although it provides relief from hazardous waste regulations, if not properly managed the site may still receive fines from our outside regulators for improper hazardous waste storage.  
Action: The EP Rep and Pollution Prevention staff will provide additional communications regarding the proper identification and management of empty containers.
- 910/310D Hazardous waste cans are full. This area is being remodeled and the owner is no longer in that area. Waste tags indicate R. Ledezma as owner.  
Action: Owner to submit the hazardous waste. (letter sent to R. Ledezma on 3/21/08)
- 910/321 Numerous empty containers require pickup.  
Action: M. Firreno requested EP Rep assistance in cleaning this area out. Waste Management and Pollution Prevention are working towards cleaning the lab.
- 955/107 Hazardous waste cans have a label indicating “90 day accumulation”. This is incorrect and thus out of compliance.  
Action: EP Rep advised P. Mendes to remove or obliterate this label immediately.
- 955/107 Empty hazardous waste can contained a rag that did not appear soiled.  
Action: P. Mendes indicated there were no hazardous waste operations ongoing and that the rag was trash – he removed it from the can and will advise other occupants not to use can as trash disposal.
- 956/102 Hazardous waste can is full  
Action: P. Mendes advised to submit for disposal.

### ***Environmental Programs Representative Center 8300 Assessment of Environmental Programs July, 2008***

#### **Waste Management Noteworthy Practices**

This assessment indicated that most of the individuals contacted who were working in office spaces were cognizant of our site EMS, and were properly recycling batteries. Several

laboratories in Bldg. 968 had areas that the EP Rep identified as model Satellite Accumulation Areas. The ES&H Coordinators for both 968 and CRF were readily available to assist with this unannounced assessment and were very helpful in gaining access to areas and identifying owners. Additionally, with their assistance, on the spot corrections were made to ensure compliance.

Special mention is deserved for the following areas:

- 906/155: Darryl Sasaki has a model Satellite Accumulation Area. There is clear distinction and proper labeling between his recycling area and hazardous waste accumulation. Additionally, Darryl has taken it upon himself to ensure there is an accumulation sheet on his waste can detailing every item in his waste accumulation area.
- Bldg. 968 ES&H coordinator has implemented new container management in many labs to address past audit issues regarding the researchers ability to distinguish which container they are throwing waste in when they are sitting side by side. These should be viewed as model Satellite Accumulation Areas and encouraged for site-wide implementation. (Fig 7).
- Bldg. 968 ES&H coordinator developed several fact sheets that have been placed throughout the satellite accumulation area to assist researchers in proper management. He will be including the Environmental Management model SAA fact sheet in these areas and has devised a method of hanging these sheets in the area so they are easy to access and read. (Figure 8)
- Bldg. ES&H coordinators were very helpful in accessing areas and addressing issues for on-the-spot corrections. In addition to the researchers being provided with the Environmental Management model SAA fact sheets, both ES&H coordinators requested additional fact sheets to help train their people and to place the fact sheets in strategic areas.
- Bldg. 906 ES&H coordinator has been personally assisting staff taking the ENV112CA online class by providing them with additional one-on-one training. An answer sheet will be provided to the coordinator to assist with this training.

### **Waste Management Concerns:**

During this assessment the EP Representative noted the following concerns and resulting action items:

- 906/107: Empty box located in Hazardous Waste Accumulation Area.  
Action 1: EP Representative and ES&H coordinator removed box. Satellite Accumulation Area requirements maintain hazardous waste must be kept segregated from other types of waste and materials. No further action required.
- 906/109: Lab contained unused red step can that had Biohazardous waste labels on it, including tags for start dates. Occupant indicated there is no bio work in the lab.  
Action 1: EP Representative instructed occupant to remove or obliterate labels from can and when the can is in use, to label appropriately at that time.
- 906/111: 1) Two empty bottles on the floor to the right of the west entrance door. They are not labeled "Empty for Recycling" per the empty container management requirement – if these bottles are for reuse – they should be labeled as such. 2) There is a beaker on the floor near the east exit door that is half filled with clear liquid, it needs secondary containment, and labeled with the contents, as well as moved to a safer location than on the floor.

- Action 1: EP Representative emailed Principle Investigator who was offsite and responded immediately. ES&H coordinator addressed the issue of moving the beaker until the PI comes into the office.
- 906/114: Excessive chemical storage in fume hood, including hazardous waste.  
Action 1: EP Representative emailed Principle Investigator who indicated he would fix immediately.
  - 906/129: Empty air duster container and Windex container in trash.  
Action 1: EP Representative removed can and notified Principal Investigator, Dennis Morrison, to train techs on proper disposal of recyclables.
  - 906/132: Wipes with black powder type residue located in trash can.  
Action 1: EP Representative received proper guidance from Waste Management and notified Principal Investigator, Dennis Morrison, to remove the wipe from the trash can and manage as hazardous waste.
  - 906/143A: Several Empty containers located in Hazardous Waste Satellite Accumulation Area – no segregation.  
Action 1: EP Representative provided “empty for recycling” stickers and asked Principle Investigator to label either all the empties or segregate the accumulation area by using a separate tub for this empties and labeling that tub.
  - 968/102: Tub with glass accumulation – not labeled, all accumulation requires labeling to instruct others of status – either re-use or empty for recycle, or autoclave. (Figure 1)  
Action 1: ES&H Coordinator indicated he would investigate status of glass and instruct the PI to either label appropriately or place in the Empty Recycling bins.
  - 968/115A Biowaste can was left open with waste inside – requirements state all cans shall be kept closed except when actively placing items in containers.  
Action 1: ES&H Coordinator closed the can and indicated he would instruct PI on proper waste accumulation requirements.
  - 968/115B&C: 1) Needs attention to housekeeping, difficult to maneuver in room and many ES&H issues were identified. 2) Unlabeled hazardous waste (box with insert - does not qualify for recycle) located on floor by door (Figure 2). 3) Two bottles of liquids on the floor near computer, one not closed, both require secondary containment and proper storage and labeling. (Figure 3). 4) Empty Dewar on floor (Figure 4). 5) Hazardous waste accumulation can is not managed properly (Figure 4). 6) Acid bottle on floor (figure 5). 7) Empty hydrogen peroxide bottle in accumulation area.  
Action 1: ES&H Coordinator indicated that he would concentrate on identifying a PI for this room and providing them with the proper training to ensure laboratory is in compliance.  
Action 2: ES&H Coordinator will advise PI to prepare WDDR, bag the waste and submit for pickup.  
Action 3: ES&H Coordinator indicated he will advise PI to close bottle, place them in secondary containment and label properly.  
Action 4: ES&H Coordinator will advise PI to place Dewar in scrap metal hopper for recycling.  
Action 5: ES&H coordinator will advise PI to remove bag & tag from can and advise PI to label outside of can instead of waste inside.  
Action 6: ES&H Coordinator indicated he will advise PI to place in secondary containment and label properly.

- Action 7: ES&H Coordinator indicated he will advise PI to label and place in proper empty for recycling accumulation area.
- 968/120 Clean room: 1) Hazardous waste is stored in cabinets with material. 2) Bag labeled “Dead Batteries”. Improper battery storage. 3) Empties were accumulating but not labeled.

Action 1: EP Rep advised PI to either label one shelf in each material cabinet as “Satellite Accumulation Area” for waste only, or move all waste to outside satellite accumulation area (maintaining segregation by secondary containment).

Action 2: EP Rep advised PI to take the “dead batteries to the proper accumulation area at the end of his shift.

Action 3: EP Rep provided PI with stickers and advised to move to accumulation area.
  - 968/120 Dock: Satellite accumulation area contains combustibles and material and waste.

Action 1: ES&H coordinator instructed PI to move material inside and move all waste outside. Also, ES&H coordinator removed combustibles.
  - 968/121: Empty containers in Satellite Accumulation Area.

Action 1: ES&H coordinator indicated he will advise PI’s to move empties to the proper accumulation areas at the time they are generated.
  - 968/122: Clean pipette box stored right next to hazardous waste pipette box. No separation.

Action 1: EP Rep advised ES&H coordinator to place boxes in two separate locations or manage differently so researchers cannot inadvertently place hazardous waste in wrong container. (See noteworthy item 2 for suggestions)
  - 968/122: 1) Excess chemicals in fume hood. 2) PI questioned proper labeling of desktop accumulation prior to transferring to Satellite Accumulation Area.

Action 1: ES&H coordinator advised PI to move acids under the hood in storage area.

Action 2: EP Rep determined that according to regulation, desktop accumulation may be accomplished with re-usable containers being emptied at the end of each work shift. The proper labeling for these containers shall describe the hazard, and shall include the words “hazardous waste – daily use”. Waste Management to include this verbiage in documentation and site training.
  - 968/125: Hazardous waste pipette box is overflowing

Action 1: ES&H coordinator indicated waste generator was on vacation and the box would be submitted as soon as she returns (within a day or two).
  - 968/126: 1) Wipes in bag on floor not labeled. If these are for re-use – label as above action for 968/125, if they are hazardous waste they must be managed properly. 2) Beaker with unknown goo on table. 3) General Housekeeping, including used wipes and gloves on counters.

Action 1: If wipes are for re-use – label and store as above action for 968/125, if they are hazardous waste they must be managed properly within satellite accumulation area.

Action 2: Label beaker, if waste, manage appropriately.

Action 3: PI should ensure waste is managed properly at the end of each work shift area should be cleaned.
  - 968/134: ES&H coordinator indicated that proper protocol from Waste Management needs to be provided for desktop accumulation.

Action 1: Same as action item 2 for 968/122.

## ***Environmental Programs Representative Center 8500 Assessment of Environmental Programs September, 2008***

### **Waste Management Noteworthy Practices**

This assessment coincided with our annual Waste Management audit by DOE. Our DOE regulator indicated during past audits that the maintenance area would be targeted each year for an annual audit. This year the auditor specifically went out of his way to verbally inform the EP Rep. that the efforts made by our Maintenance group, specifically the Hazardous Waste Storage area in the auto shop, had significantly improved and that efforts to better manage these areas were noted.

911/115: Storage area for science project activities. A significant amount of effort was made by employees to clean this area.

Honorable mention is also provided for the quick actions made by both staff and management to immediately correct the areas of concern listed below.

### **Waste Management Concerns**

- 9623 Yard: Improper labeling of two empty 55 gallon drums last containing hazardous materials. Drum owners indicated as Scott Keith & Bobby Smith.  
Action 1: The EP Rep notified the generator who immediately responded by labeling and submitting a WDDR for both. No further action required. (Figure 2)
- 9623 Shed 9: Hazardous waste container not properly closed.  
Action 1: Generator immediately replaced broken lid, no further action required.
- 9623 Shed 8: Empty containers not labeled and not segregated from hazardous waste.  
Action 1: EP Rep advised generator to use open top 55 gallon drum with plastic liner to store empties for recycle. Further action required by Pollution Prevention to deliver drum and liner to Fred.
- 9623 Shed 8: White drum with clear liquid sitting outside shed. Generator indicated Michael Clark was said he would take care of the drum and not to bother labeling it. EP Rep placed “Waste Pending Analysis” tag on this drum last year and generator indicated that Michael removed that label.  
Action 1: After consulting with Leighton Ford, EP Rep advised generator to label drum with coolant/water hazardous waste identification tag, submit for disposal, and move inside waste storage area on secondary containment. No further action required.
- 9623/100: Step can of diesel/gas rags is full.  
Action 1: Generator to submit WDDR.
- 963/100: Drink dispenser on top of machine in machine shop area.  
Action 1: OMA immediately moved dispenser – it was not used in this area, just temporarily stored there, no further action required.
- 963/100: Dumping: Three discarded bags of waste – labeled “oily rags” were lying outside of the accumulation cans without entries on the satellite accumulation sheets. Improper segregation between empties, hazardous waste, and empty containers. (Figures 4 & 5)  
Action 1: Generator responsible for area immediately rectified problem and reinforced requirements to responsible persons. No further action required.

- Action 2: Generator marked area with tape and provided proper segregation with distance and the use of a tray for waste submitted for disposal. No further action required.
- 963/108: Improper labeling. Waste container has permanent marking indicating “oily waste”. Yet waste tag indicates this is solvent waste.  
Action 1: Generator responsible for area indicated that he was planning to obliterate the words “oily” since this waste stream is labeled correctly on the WDDR as solvent waste.
  - 9633/100: Improper waste accumulation. Generator asked EP Rep how to label and dispose of ballasts.  
Action 1: EP Rep worked with management and generator to have the proper waste generator responsible for this waste stream. It has since moved to 963/100 under the guidance of that primary waste generator. No further action required.
  - 9633/100A: Improper segregation of empty containers.  
Action 1: EP Rep advised generator to place a tray labeled “empty for recycle” in the hazardous waste storage cabinet.
  - 9633/100c: Bin for collection of empty containers was overflowing. Large collection of empty aerosols. Box of full aerosols marked “do not use”.  
Action 1: EP Rep asked Pollution Prevention to deliver a lined 55 gallon drum for empty accumulation and also advised generator to contact Pollution Prevention for removal prior to filling. Further action required by Pollution Prevention.  
Action 2: Generator advised by Pollution Prevention to place empty aerosols in scrap metal bin.  
Action 3: EP Rep contacted Custodial supervisor who indicated the aerosols were to be used – supervisor was advised to remove the “do not use” label.
  - 910basement: Dumping. Two bottles of cleaner found draining in floor drain of janitors closet. (Figure 6)  
Action 1: EP Rep received advise from waste water staff and will provide custodians with additional training.
  - 911/114J: Batteries need proper management. Several shelves contain give away items that have previously leaked battery acid. The former manager for this area indicated that he was planning on assigning someone to pull the batteries and submit them for recycle.  
Action 1: Employee’s need to pull these batteries for recycle prior to disposal. Employee’s shall remain vigilant for spilled battery acid and clean accordingly.

***Environmental Programs Representative Center 8900 Assessment of Environmental Programs  
June, 2008***

**Waste Management Noteworthy Practices**

This assessment indicated that most of the individuals contacted were cognizant of our site EMS, and were properly recycling batteries. The EP Representative made only one on the spot correction, which is indicative of a broader understanding of proper waste management handling and pollution prevention protocol than was identified in last year’s assessment. Special mention is deserved for the following areas:

- Jim Berry, manager of 8947 who upon encountering the EP rep in the hallway, invited her to discuss the scope of the assessment and offered additional resources to complete the assessment if needed.
- Most staff polled indicated that they currently had supplies on hand to manage battery recycling and empty container recycling.

### **Waste Management Concerns**

- Observed areas of concern the included 910/010 suite: A battery accumulation area was in place and mislabeled. The batteries were segregated and taped; however, they were accumulating with no WDDR label and as such were at risk of violating satellite accumulation area management labeling protocol.
  - Action 1: The EP Rep removed the containers of segregated batteries and provided the owner with envelopes and instructions to manage the batteries for recycle as they are generated. No further action required.
- 912/220: Has several empty containers of compressed air stored in cabinet.
  - Action 1: The EP Rep provided DeWayne McDowell with empty stickers and instructed him to call the ES&H hotline for pick-up when labeled.
  - Action 2: 8900 Management should delegate an individual to be responsible and cognizant for hazardous waste and recyclable management. Although management of batteries has improved the identified responsible individual was unaware of the scope of his responsibilities.