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Sandia National Laboratories, California Waste Management Program Annual Report February 2010

Mark E. Brynildson (Waste Management Program Lead)

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Sandia National Laboratories, California Waste Management Program Annual Report February 2010

Mark E. Brynildson (Waste Management Program Lead)
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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
3.4	14-15	Expiration/Effective Dates updated in Table 3.1
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 SNL/NM Regulated Waste/Nuclear Material Disposition Department (RWNMDD) provides the oversight and management of the SNL/CA Radioactive Waste Management Program. SNL/NM RWNMDD also 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 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 2009, 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

Driver	Summary	Regulating Authority
<i>Federal Laws</i>		
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
<i>Federal Regulations</i>		
40 CFR 260-280	Implementing regulations for managing waste under RCRA.	EPA

Driver	Summary	Regulating Authority
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
<i>DOE Directives</i>		
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
<i>California Laws</i>		
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
<i>California Regulations</i>		
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 2010) 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

TITLE	
OPERATING PROCEDURES	Expiration Date
AP8000000 Building Security Plan for the Waste Management Facility (WMF), Buildings 961 and 9611	September 22, 2010
AP800008 SNL/CA Environmental Program Representative (EP Rep) Program	July 31, 2012
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	October 20, 2012
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
STANDARD OPERATING PROCEDURE	
SP473525 Standard Operating Procedure for the Hazardous Waste Facility, Bldg. 9611	January 19, 2013
SP485007 Low-Level Radioactive Waste, Bldg. 961	November 12, 2011
PRIMARY HAZARD SCREENING	
SNL7A00686-019 Waste Management Program at SNL/CA	October 12, 2011
ES&H MANUAL SECTIONS	Effective Date
ESH100.2.IH.11 Perform Hazardous Waste Operations and Emergency Response	October 12, 2009
ESH100.2.ENV.3 Manage PCBs, PCB Containers, and PCB Sources Safely	October 12, 2009
ESH100.2.ENV.4 Manage Oil and Fuel Storage	October 12, 2009
ESH100.2.ENV.8 Manage Excess Metallic Lead	October 12, 2009
ESH100.2.ENV.23 Manage Radioactive Waste at SNL	October 12, 2009
ESH100.2.ENV.24 Manage Mixed Waste at SNL	October 12, 2009
ESH100.2.ENV.15 Manage Hazardous Waste at SNL/CA	October 12, 2009
ESH100.2.ENV.16 Manage Radioactive Waste at SNL/CA	October 12, 2009
ESH100.2.ENV.17 Manage Mixed Waste at SNL/CA	October 12, 2009
ESH100.2.ENV.20 Manage Other Waste at SNL/CA	October 12, 2009
ESH100.2.ENV.21 Recycle or Reuse Waste at SNL/CA	October 12, 2009
OTHER DOCUMENTS	
SNL Transportation Security Plan	April 15, 2008
NTS Waste Acceptance Criteria DOE/NV-325-REV. 7-01	May, 2009

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 "L" 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 "L" 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 L 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

Training Courses Requirements	Training Frequency	Waste Program Lead	Waste Program Engineer	Field Chemist	Radioactive Waste Representative	Hazardous Waste Technician	Emergency Response Backup
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/ 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.

FY2010 EMS environmental targets and objectives were approved in October of 2009. 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 2009 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 7-1 SNL/CA Hazardous Waste Quantities by Quarter

Figure 7-2 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 2010, 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 (\$250 million in FY 2009).

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 (\$250 million in FY 2009).

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 2008 Program Self Assessments

The 2008 Program Self Assessment identified issues with documentation relating to the radioactive waste activities and routine WM Program documents out-of-date. Nearly all Waste Management technical work documents were updated as a result of the 2008 Program Assessment.

9.2 2009 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 2009, the WM Program Self Assessment focused on a customer opinion survey done using the Vovici Enterprise tool on Waste Management business processes and tools. 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 January 14, 2010, *Self-Assessment Report: EMS Waste Management Program assessment for FY09 Assessment Number 8210* (see Appendix D).

9.3 Line Opinion Assessment

The Line Opinion Assessment is this year's effort, part of the Program Self Assessment, to determine the Line's opinion of Waste Management tools and processes. The success or failure of the line or site to implement program requirements and tools 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.)

In conducting this survey several conclusion were suggested. Survey Responses suggest that Line hazardous waste generators do not effectively use some of the published tools that are

designed to answer questions. The Line tends to rely on Waste Management personnel for direct troubleshooting and general support.

The survey responses also suggest more resources need to be dedicated to the modernization of the WDDR and WIMS from Oracle Forms to Java X Enterprise Edition. This will greatly improve the reliability, accuracy and ease of use of the WDDR for Line hazardous waste generators and the WIMS for the Waste Management personnel. The general trend in organizations is to reduce personalized customer service and rely on published tools (web pages FAQs) designed to provide direct troubleshooting and general support. SNL/CA personnel have long relied on Waste Management personnel to provide customer support. Survey responses indicate on-line tool development needs to be improved to provide a more effective customer experience. Line customers also need better training on these tools or they will continue to rely on Waste Management personnel for direct support. With ever decreasing budgets customer support is difficult to staff.

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 2009. 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.

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, FY2009 and FY2010 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 was predicted but avoided in FY2009 by a management sponsored old chemical inventory reduction campaign (~\$150,000). Projections for FY2010 suggest another shortfall will result if an increase in chargeback rates was not implemented. Therefore, rates were raised ~15% - 20% depending on the waste category. Another management sponsored old chemical inventory reduction campaign will likely be needed in FY2010 based on preliminary annual projections.

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	CY09
126,909 kg	60,619 kg	73,229 kg	56,505 kg	85,382 kg	31,200 kg	56,530 kg	38,326 kg	29,767 kg	25,777 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, 2008 and 2009 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.

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 FY2010 SNL/CA Environmental Objectives and Targets

(Approved by SHEAC on 10/29/09)

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 2010

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 Emergency Response Backup	Oct 2004	No	No**
M. Brynildson	Waste Program Lead Waste Program Engineer	July 2005	Yes	Yes
J. Harris	Waste Program Lead Backup 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 (FY10)

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
Very High	• Everything points to this occurring
High	• <i>High chance</i> • <i>Lack of relevant processes or experience contribute to a high chance of occurrence</i>
Medium	• <i>Even chance</i>
Low	• <i>Not much of a chance</i>
Negligible	• Negligible chance this will occur

CONSEQUENCE/ SEVERITY LEVEL	CONSEQUENCE/SEVERITY CRITERIA
High	<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 >\$1M • Adverse public opinion – high interest/widespread open public attention or debate (lasting weeks to months) • Customer dissatisfaction results in permanent loss of lab customer • Catastrophic failure to meet internal requirements • Loss of major program within the division (>\$10M)</i>

Medium	<ul style="list-style-type: none"> • Has the potential for adverse impact on Sandia's programmatic performance or the achievement of corporate strategic or operational objectives • Significant injury/illness -fully recoverable with a long recovery time • Significant environmental impact resulting in recovery actions lasting up to 5 years (e.g., major oil spill) • Results in Site/Area Emergency (affects multiple onsite facilities) • One of regulator "hot buttons" (e.g., NNSA, NMED) • Results in increased oversight of limited number of functions • Actions, inactions, or events that pose threats to DOE security interests or that potentially degrade the overall effectiveness of DOE's safeguards and security protection program (i.e., IMI-3) † • Unallowable costs or fines >\$500K and <\$1M • Adverse public opinion – moderate interest, limited PR problems of short duration (days) • Customer dissatisfaction results in partial loss of program • Significant failure to meet internal requirements • Loss of program within division (>\$1M)
Low	<ul style="list-style-type: none"> • Minimal injury/illness – Fully recoverable with a short recovery time • Minimal environmental impact that can be improved within days • Results in increased short-term oversight • Results in an Operational Emergency (affects a single onsite facility) • Actions, inactions, or events that could pose threats to DOE by adversely impacting the ability of organizations to protect DOE safeguards and security interests (i.e., IMI-4) † • Unallowable costs or fines <\$500K • Adverse public opinion with short-term local negative publicity or embarrassment
Negligible	<ul style="list-style-type: none"> • Little or no attention, might be discussed as lesson learned

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

RISK GRADING LEVELS					
		Consequence/Severity			
		<i>Negligible</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
Likelihood of Occurrence	<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 **Medium** 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 Medium 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 **Medium** 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 (\$250 million in FY 2009), therefore the consequence is **Low**.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of Medium, 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 **Medium** 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 (\$250 million in FY 2009), therefore the consequence is **Low**.

h. Overall Risk Category

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

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 2009 levels is **High**. The under-recovery in FY2008 (\$255,000) was covered by corporate IES funding. SNL/CA over-recovery in FY2009 (\$60,000) was absorbed by the corporate Waste Management Service Center.

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. Additional consequences include involuntary loss of personnel due to stressed induced illness and job changes. This results in loss of quality personnel with difficult and expensive to replace institutional and process knowledge.

An occurrence could also 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

LESA Assessment Final Report

Assessment ID: 8210

8516 EMS Waste Management FY10

Assessment Summary

ID:	8210						
Title:	8516 EMS Waste Management FY10						
Description:	Division 8000 Waste Management The self-assessment will focus on the Waste Management tools and resources. The assessment will also include the standard review of the Waste Management Web Pages and Technical Work Docume...						
Purpose:	Division 8000 Self-Assessment on Integrated Assessment Schedule. The WDDR was significantly updated this past year and the WIMS application development team is developing a WDDR liteapplication to simplify the use of ...						
Originating Mgt. Entity:	Division » 8000 California Laboratory						
Assessing Org:	<table><tr><td><i>Org</i></td><td><i>Manager</i></td><td><i>Division</i></td></tr><tr><td>08516</td><td>SHAMBER,GARY W.</td><td>08000</td></tr></table>	<i>Org</i>	<i>Manager</i>	<i>Division</i>	08516	SHAMBER,GARY W.	08000
<i>Org</i>	<i>Manager</i>	<i>Division</i>					
08516	SHAMBER,GARY W.	08000					
Org(s) Being Assessed:	None						
Lead Assessor:	SHAMBER,GARY W. (08516)						
POC Assessed:	CULL JR.,EDWARD T. (08510)						
Type:	Line Assess the Line						
Status:	Planned						
Dates:	11/02/2009 - 02/28/2010						
Result Summary:	0 Significant Findings, 0 Minor Findings, 1 Observations, 0 Noteworthy Practices, 5 None (Acceptable Practices)						

IA

Summary:

0 Total IAs, 0 Open IAs, 0 IAs Pending Verification, 0 Closed IAs,
0 Required IAs Missing, 0 On Track IAs, 0 Past Due IAs,
0 Causal Analyses

Assessment Final Report Review

Submitted SHAMBER,GARY W. (08516)

To:

Submitted BRYNILDSON,MARK E. (08516)

By:

Submitted 01/14/2010

Date:

Assessment Detail

Description

Division 8000 Waste Management

The self-assessment will focus on the Waste Management tools and resources. The assessment will also include the standard review of the Waste Management Web Pages and Technical Work Documents.

Process level Assessment

- Assessment of Line proficiency in utilization of WM tools (WDDR) and resources (Corporate Procedures, EP Rep., etc.)

Standard Program Documents Review

- PHS
- Standard Operating Procedures
- Operating Procedures
- Administrative Procedures
- Web Pages
- Corporate Procedures (ES&H Manual)
- Other

Purpose

Division 8000 Self-Assessment on Integrated Assessment Schedule.

The WDDR was significantly updated this past year and the WIMS application development team is developing a WDDR lite application to simplify the use of the WDDR. A major goal of this program self-assessment is to determine the whether Line personnel can demonstrate effective use and understanding of the tools and processes of the Waste Management Program. This self-assessment will collect data using the electron survey tool, Vovici Enterprise, of the ENV112CA trained personnel proficiency using the tools (WDDR), resources and their understanding of the Waste Management. This effort will direct the

program's effort to enhance communication and training with under-compliant organizations and aid in the WDDR revisions.

Analysis, Conclusions, and Additional Comments

Analysis: The TWDs and web pages have been adequately maintained. Responses suggest that Line hazardous waste generators do not effectively use some of the published tools that are designed to answer questions. The Line tends to rely on Waste Management personnel for direct troubleshooting and general support.

Conclusions: More resources need to be dedicated to the modernization of the WDDR and WIMS from Oracle Forms to Java X Enterprise Edition. This will greatly improve the reliability, accuracy and ease of use of the WDDR for Line hazardous waste generators and the WIMS for the Waste Management personnel. The general trend in organizations is to reduce personalized customer service and rely on published tools (web pages FAQs) designed to provide direct troubleshooting and general support. SNL/CA personnel have long relied on Waste Management personnel to provide customer support. Survey responses indicate on-line tool development needs to be improved to provide a more effective customer experience. Line customers also need better training on these tools or they will continue to rely on Waste Management personnel for direct support. With ever decreasing budgets customer support is difficult to staff.

Location(s) Assessed

<i>Site - Area</i>	<i>Building/Structure</i>	<i>Room</i>	<i>Other</i>
California	9611		n/a

Scope/Criteria

- ES&H » Waste Management » Waste Management Program

Checklist Used

None

Associated Document Link(s)

None

Assessment Team Members

<i>Name</i>	<i>Org.</i>	<i>Role</i>	<i>Additional Role Description</i>
BRYNILDSON, MARK E.	08516	Assessor	
BARNES, BRENT DAVID	08521	Creator	

Personnel Interviewed

None

Documents Reviewed

<i>Document</i>	<i>Number</i>	<i>Description</i>	<i>Revision</i>	<i>Type</i>	<i>Date of Review</i>
ES&H Corporate Procedure for Waste Management	ESH100.2.ENV.XX	ES&H Corporate Procedure for Waste Management at SNL/CA	1	Corporate Procedures	TBD
Notes: ESH100.2.ENV.15 Manage Hazardous Waste at SNL/CA ESH100.2.ENV.16 Manage Radioactive Waste at SNL/CA ESH100.2.ENV.17 Manage Mixed Waste at SNL/CA ESH100.2.ENV.20 Manage Other Waste at SNL/CA					
RCRA Part B Permit		RCRA Part B Permit		Permit	TBD
Waste Management Program at SNL/CA	SNL7A00686	Waste Management Program at SNL/CA	19	PHS	TBD
General ES&H and WM Web Pages		General ES&H and WM Web Pages		Web Pages	TBD
Building Security Plan for Buildings 961 and 9611	AP800000	Building Security Plan for Buildings 961 and 9611	E	AP	TBD
Low-Level Radioactive Waste; Building 961	SP485007	Low-Level Radioactive Waste; Building 961	M	SOP	TBD

SOP for the Hazardous Waste Facility, Bldg 9611	SP473525	Standard Operating Procedures for the Hazardous Waste Facility, Bldg 9611	E	SOP	TBD
Measuring and Testing Equipment Calibration	OP472245	Measuring and Testing Equipment Calibration	A	OP	TBD
Management of Low-Level Radioactive and MW at CA	OP472236	Management of Low-Level Radioactive and Mixed Waste at SNL/CA	C	OP	TBD
Operating the RAM FLAT Compactor	OP472180	Operating the RAM FLAT Compactor	B	OP	TBD
Building 961 LECs Sump Operation	OP471619	Building 961 LECs Sump Operation	E	OP	TBD
Verification of Laboratory Chemical Analysis Data	OP471613	Verification of Laboratory Chemical Analysis Data	E	OP	TBD
Control of Samples by the Environmental Operations	OP471310	Control of Samples by the Environmental Operations Department	G	OP	TBD
Nonconforming Item Identification and Tracking	OP471125	Nonconforming Item Identification and Tracking	G	OP	TBD

Significant Findings

This Assessment resulted in 0 Significant Finding(s).

Minor Findings

This Assessment resulted in 0 Minor Finding(s).

Observations

This Assessment resulted in 1 Observation(s).

Observation No. 1

Survey respondents said that several sections of the Waste Description Disposal Request system (WDDR) was difficult or confusing. 31.1% of the respondents said the Waste Description Section was difficult or confusing. 22.2% of the respondents said the WDDR Folders section was difficult or confusing. 20.0% of the respondents said the Waste Tag printing 20.0% respondents was difficult or confusing. While the WDDR system is routinely updated for regulatory compliance and software performance improvement. A transformation to a modern software platform (Java 2 Enterprise Edition form Oracle Forms) with a redesigned interface should improve ease-of-use and other performance issues of the WDDR system.

Trending Code: Work Processes

Result Location(s):

None

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

Result Associated Document Link(s):

None

Improvement Actions(s):

There are no Improvement Actions.

Noteworthy Practices

This Assessment resulted in 0 Noteworthy Practice(s).

None (Acceptable Practices)

This Assessment resulted in 5 None(s) (Acceptable Practices).

None - Acceptable Practice No. 1

The SNL/CA Waste Management Self-Assessment Survey was sent to 320 MOWs with current ENV112CA HAZARDOUS WASTE & ENVIRONMENTAL MANAGEMENT TRAINING (CA). 53 MOWs responded to the survey invitation for a response rate of 16.5%. The survey results are consistent with the following conclusions: MOWs who generate waste rely heavily on support from Waste Management Personnel for customer support. Secondary support comes from the ES&H Coordinator/EP Rep. and co-workers. The results suggest MOWs do not rely much on written resources (Websites, TWDs) for support. This suggests that either MOWs have a preference for live customer support or the written support tools are difficult to use and customers simply like to interact with live customer support.

None - Acceptable Practice No. 2

Survey respondents said overwhelmingly (89%) that they knew their ES&H Coordinator/Facility Manager. Survey respondents, however, said less confidently (61%) that they knew their Environmental Programs Representative. If ES&H is to rely on a customer support that is focused on in-person support versus written tools (websites, TWDs, etc.) we must do better in training and communicating with the customers who the support them.

None - Acceptable Practice No. 3

Survey respondents said overwhelmingly (96%) that they were aware of the Chemical Exchange Program. Respondents also said they are generally following the requirements (85%) for chemical inventory updating when chemicals are used up.

None - Acceptable Practice No. 4

Survey respondents said overwhelmingly (93%) that they felt qualified to manage their hazardous waste. Several follow-up questions support the conclusion that the survey respondents are competent in their waste management activities. Survey respondents said that they were only somewhat confident (50%) or Not Sure (12%) how to recycle empty containers. Additional training might improve their understanding of this process.

None - Acceptable Practice No. 5

The Waste Management Program documents (PHS, administrative procedure, operating procedure, forms, web pages, and Corporate Procedures have been reviewed. Most documents were updated as needed. Minor updates to update references from the ES&H Manual to the ES&H Corporate Procedure will be completed as they come due for revision. The Waste Management Corporate Procedure are: ESH100.2.ENV.15 Manage Hazardous Waste at SNL/CA ESH100.2.ENV.16 Manage Radioactive Waste at SNL/CA ESH100.2.ENV.17 Manage Mixed Waste at SNL/CA ESH100.2.ENV.20 Manage Other Waste at SNL/CA

Appendix E: Waste Management Program Self-Assessment Document Checklist

Program Program Documents Review

Organization: 08516 Program: Waste Management

Date: 01/05/2010 Signature: Mark E. Brynildson
Program Lead

Document Type	Document Title	Review Complete / Date	Changes Made
Operating Procedures	OP471125 - Nonconforming Item Identification and Tracking ----- Note: Reviewed 01/10 No changes required	☒ 01/10	☐ Yes ☒ No
	OP471310 - Control of Samples by the Environmental Operations Dept ----- Note: Updated 10/09	☒ 01/10	☒ Yes ☐ No
	OP471613 – Verification of Laboratory Chemical Analysis Data ----- Note: Reviewed 01/10 No changes required	☒ 01/10	☐ Yes ☒ No
	OP471619 – Building 961 LECs Sump Operation ----- Note: Reviewed 01/10 No changes required	☒ 01/10	☐ Yes ☒ No
	OP472180 – Operating the RAM FLAT Compactor ----- Note: Reviewed 01/10 No changes required	☒ 01/10	☐ Yes ☒ No
	OP472236 – Management of Low-Level Radioactive and Mixed Waste at SNL/CA ----- Note: Reviewed 01/10 No changes required	☒ 01/10	☐ Yes ☒ No
	OP472245 – Measuring and Testing Equipment Calibration -----	☒ 01/10	☐ Yes ☒ No

	Note: Reviewed 01/10 No changes required		
	SP473525 – Standard Operating Procedures for the Hazardous Waste Facility, Bldg 9611 Note: Updated 12/09 No changes required	☒ 01/10	☒ Yes ☐ No
	SP485007 – Low-Level Radioactive Waste, Bldg 961 Note: Reviewed 01/10 No changes required	☒ 01/10	☐ Yes ☒ No
	AP800000 - Building Security Plan for Buildings 961 and 9611 Note: Reviewed 01/10 No changes required	☒ 01/10	☐ Yes ☒ No

Document Type	Document Title	Review Complete / Date	Changes Made
ES&H Corporate Procedures	ESH100.2.ENV.15 Manage Hazardous Waste at SNL/CA ESH100.2.ENV.16 Manage Radioactive Waste at SNL/CA ESH100.2.ENV.17 Manage Mixed Waste at SNL/CA ESH100.2.ENV.20 Manage Other Waste at SNL/CA Note: Updated 9/09	☒ 01/10	☐ Yes ☒ No
PHS	SNL7A00686 Note: Updated 10/09	☒ 01/10	☐ Yes ☒ No
Web Pages	General ES&H Web Page Note: Reviewed 01/10 Changes completed	☒ 01/10	☒ Yes ☐ No
	Waste Management Program Web Pages Note: Reviewed 01/10 Changes completed	☒ 01/10	☒ Yes ☐ No
Permit	RCRA Part B Permit Note: Permit update is required to reflect personnel changes	☒ 01/10	☐ Yes ☒ No

Appendix F: Environmental Programs Representative - Waste Management Issues

8100 Assessment – Waste Management Related Issues

Noteworthy Practices

- Response to the noted few areas of concern was immediate. It has become apparent that in this center the EP Representative assessments are viewed as helpful guidance as they are intended.

Concerns

General Area of Concern:

It was noted in the few labs visited in building 906, there was a better awareness of proper hazardous waste management and controls; however, general housekeeping issues have increased. (Figure 1)

Specific Areas of Concern:

- 906/114: Sharps container labeled with manufacturer's labeling indicating biohazard. There was no hazardous waste ID tag. (Figure 2)
Action 1: The ES&H coordinator responded that this was not biohazard, and that a hazardous waste ID tag was immediately initiated indicating the contaminants. No further action required.
- 906/114M: Poor housekeeping and there are two large empty containers of Nalgene tucked behind a corner that must be managed as hazardous waste or labeled for re-use. (Figure 4).
Action 1: The ES&H coordinator responded via email that the room had been cleaned and the empty containers properly managed. No further action required.
- 941/1136: EP Representative could not find hazardous waste accumulation area. The technician in the area was interviewed about his process and he indicated that all hazardous waste was managed by another technician. When asked about his process he did indicate that he would be using solvents. When asked about disposing of the waste he said he didn't have any, but if he did someone else would manage it.
Action 1: All employees who use chemicals and have the potential to create hazardous waste must be trained in ENV112CA. The technician who oversees the waste in that area did contact me immediately and informed me of where the waste accumulation area is kept and indicated that the person that was interviewed was new to this area. Manager needs to ensure all employees are ENV112CA trained.

8200 Assessment – Waste Management Related Issues

No assessment in CY2009.

8300 Assessment – Waste Management Related Issues

Noteworthy Practices

The ES&H Coordinator for 8300 was readily available to assist with this unannounced assessment and was very helpful in gaining access to areas and identifying owners.

- 906/112M: Very nice solder area, well kept
- 906/112A: Nice solder setup, well kept
- 906/118: Sharps container marked appropriately – No Biowaste
- 906/144: Special mention is deserved for the significant improvement on housekeeping in this lab.

Concerns

- 906/112M: 1) Poor housekeeping – bags of stuff not marked, some waste like materials (Figures 1, 2 & 3), 2) Multiple unidentified spills on floor (Figures 4 & 5), 3) ES&H coordinator thought area was not in use – but obviously is being used, 4) Old signs designating owners who are no longer employed and PHS outdated in 2001. 5) Old waste tag next to mismanaged waste.
 - Action 1: Clean area and properly label bags to designate whether material is in use or waste
 - Action 2: Clean up powder on floor, if unknown consult waste management – manage and dispose of appropriately.
 - Action 3: ES&H coordinator needs to be apprised of lab ownership and operations in lab.
 - Action 4: ES&H coordinator needs to work with the lab owner to update TWDs and signs.
 - Action 5: Initiate and submit waste tag using WDDR system for items in tray (Figure 6)
- 906/135: 1) Full can of hazardous waste, 2) 5 gallon empty pail no labels.
 - Action 1: Submit hazardous waste for disposal
 - Action 2: Empty container should be marked “empty for recycle” or if applicable “re-use”.
- 906/CS-B1: Old chemicals.
 - Action 1: 1) Chemicals should be disposed when they reach their expiration date.
- 906/CS-B2: Old drums of alcohol and lubricant are showing signs of wear, contents at risk of breaching containers. (Figure 7); 2) carboy container not labeled. (Figure 8)
 - Action 1: Submit drums as hazardous waste.
- 973 Courtyard: 1) Drums have potential hazardous waste sitting on top (Figure 9); 2) box of abandoned computer parts.
 - Action 1: Remove hazardous waste and manage appropriately.

8500 Assessment – Waste Management Related Issues

Noteworthy Practices

The work areas of Fred Richards, Johnny Vargas and Gene Amezcua were well organized and improved from the last assessment. Each had several chemicals they had pre-identified for the CIS cleanout initiative; these chemicals were segregated from the designated satellite accumulation areas.

- **9633/105:** Very well maintained chemical storage area; special mention is deserved for improving and maintaining an optimal satellite accumulation area.
- **9623 Auto Shop:** Satellite accumulation areas all very well managed with Waste Accumulation Logs. When employees were questioned about adding to these areas all were well versed on using these logs and managing the satellite accumulation areas.
- **963/100A:** Janitorial chemical storage area well maintained. Chemicals identified for CIS cleanout were segregated, on secondary containment, and readily identified (Fig. 4). Employees who were questioned regarding waste management were well versed on proper management of their areas.

Concerns

- **910/roof:** Hazardous waste rags in bag and cans of primer/adhesive near chemical still. (Fig. 1&2)
 - Action 1: Maintenance department needs to remove waste and manage appropriately.
- **928/100F:** 1) Employee had an old pesticide aerosol can that she no longer needed. 2) Employee had two full aerosol containers of desk cleaner and indicated she would probably never use both.
 - Action 1: EP Representative submitted pesticide as hazardous waste. No further action required.
 - Action 2: EP Representative took one can of desk cleaner for re-use elsewhere. No further action required.
- **9611 Shed 2:** EP Representative identified damaged aerosol can and questioned used battery storage. (Figs. 8 & 9)
 - Action 1: Owner of shed indicated they were fixing aerosol can to use contents. No further action required
 - Action 2: Owner indicated batteries were for reuse and would be properly stored in secondary containment. No further action required.
- **9611:** EP Representative questioned storage of drums not on pallets.
 - Action 1: Owner indicated drums could be double-stacked and would be in the future. Drums shipped next day. No further action required.
- **9623/Sheds:** 1) Old MSDS binder located on cabinet. 2) CIS chemical storage required waste pending analysis labels until WDDRs could be completed. Must dispose of as waste. (Fig. 11)
 - Action 1: EP Representative removed binder. No further action required.
 - Action 2: EP Representative labeled CIS accumulation area. No further action required.
- **963/100A:** CIS chemical storage required waste pending analysis labels until WDDRs could be completed.
 - Action 1: EP Representative labeled CIS accumulation area. No further action required.
- **963/106:** CIS chemical storage required waste pending analysis labels until WDDRs could be completed.

Action 1: EP Representative advised owner to co-mingle waste into normal maintenance waste streams. No further action required.

- **963/Paint Shop:** 1) Flammable hazardous waste storage container requires waste accumulation log. (Fig. 12). 2) Satellite accumulation area needs to be under the control of the generator – cannot be left unattended on dock.

Action 1: Owner placed waste accumulation log onto container. No further action required.

Action 2: Owner is clearing out a locked area for satellite accumulation. No further action required.

- **963/Shed 1:** Landscapers satellite accumulation area – 1) Foggers and respirator filters required WDDRs – not labeled waste. 2) Over accumulation of empty containers. (Fig. 14)

Action 1: Owner indicated his computer was down, EP Representative assisted with providing WDDRs. No further action required.

Action 2: Waste Management will deliver a large dumpster to manage empties in maintenance area. No further action required.

- **9633 So Storage Yard:** 1) Three buckets filled, LV00028242 – needs to be identified as waste or material if in use (Fig. 5). 2) Several white 30 gallon barrels and one 10 gallon pail with dried tarry asphalt residue, LV000137801 and LV00081999. (Fig. 6 & 7)

- Action 1: Owner indicated that he is currently characterizing the material as waste and will manage accordingly.

- Action 2: EP Representative checked to see if these containers could be recycled. Owner must submit these as hazardous waste.

- **968 Rolloff:** EP Representative inspected rolloff container the container and contents were unlabeled and waste was inside. (Fig. 10)

Action 1: EP Representative worked with project engineer to label container and have daily log completed by Sandia Delegated Representative. No further Action Required.

8600 Assessment – Waste Management Related Issues

Noteworthy Practices

- **941/1166:** This laboratory deserves the recognition of most improved. All waste accumulation areas were well organized and labeled properly. The recycling area was segregated from waste and material and well marked. The EP Representative removed recycling waste streams from this area.
- **968:** All biowaste containers were managed appropriately and were within the seven day retention period. This area has significantly improved over past assessments.

Concerns

- **916/104D:** 1) Sharps container marked with biowaste label (Fig 1). 2) Tray of trash on floor (Fig 2). 3) Several wipes and gloves lying around room (Fig 3). 4) Oil leaking onto floor from pumps (Fig 4).

- Action 1: If this container truly contains biowaste, it needs to be managed appropriately including hazardous waste ID tags, if not biowaste, this label must be removed or obliterated and properly labeled.
- Action 2: Owner to identify trash and place in proper container.
- Action 3: Owner should designate and label an area for reusable wipes. Gloves and wipes need to be managed properly.
- Action 4: Owner to use absorbent around pumps to control leaking.
- **916/108**: 1) Items in waste accumulation area are labeled “Follow-up with ES&H”, improper labeling (Fig 5). 2) Hazardous waste accumulation can is overflowing (Fig 6). 3) Trash and rags lying on floor around hazardous waste cans (Fig 7). 4) Open tray of liquid sitting on ledge of fume hood (Fig 8). The EP Representative attempted to clarify issues with the owner and followed up with email notification.
 - Action 1: Items require proper labeling with a hazardous waste ID tag, or “waste pending analysis” with the date. Owner notified EP Representative via email that this issue was fixed. No further action required.
 - Action 2: Hazardous waste cans are required to be closed at all times. This must be submitted for waste disposal prior to being unable to shut the lid. Owner notified EP Representative via email that this issue was fixed. No further action required.
 - Action 3: Manage as hazardous waste or trash as appropriate. Owner notified EP Representative via email that this issue was fixed. No further action required.
 - Action 4: Keep liquids contained and labeled in appropriate manner to prevent spills. Owner notified EP Representative via email that this issue was fixed. No further action required.
- **916/126B**: Leak on floor from equipment (Fig 9)
Action 1: Owner to contain leak or repair equipment.
- **916/136**: Unlabeled bag of trash leaning against Hazardous waste accumulation container (Fig 10).
 - Action 1: Owner to ensure hazardous waste accumulation area is properly labeled and kept separate from material, trash, and recycling.
- **941/1147**: Material in use was stored in hazardous waste accumulation area (Fig 11).
 - Action 1: EP Representative was escorted by lab owner who immediately provided proper segregation. No further action required.
- **941/1148**: Liquid waste accumulation was not in secondary containment (Fig 12).
 - Action 1: EP Representative provided secondary containment to lab owner. No further action required.

8900 Assessment – Waste Management Related Issues

Concerns

General Area of Concern:

During the assessment the EP Representative processed four hazardous waste items that were “left” for the OMA’s to manage. Additionally, the EP Representative dismantled three unauthorized battery accumulation areas. Although the senior management assistants were very well versed on proper management of office chemicals, the OMA’s indicated they were not.

Batteries shall have the terminals taped and be sent in the mail to MS9902 as soon as they are no longer usable. Leaking batteries must be managed as hazardous waste – contact the EP Representative to assist with processing hazardous waste.

SMA's and OMA's are not trained hazardous waste generators and as such they should not be provided with hazardous waste and asked to dispose. If anyone requires assistance with disposal, they can contact the EP Representative.

Specific Areas of Concern:

- 915/W111: Heidi Kolden, OMA had small collection of batteries and someone had left her a full can of flammable compressed air and asked her to get rid of it.
Action 1: The EP Representative provided Heidi with a hazardous waste ID tag for the container and picked up the batteries. No further action required.
- 915/N140: As a service for her staff, an OMA had established a battery accumulation area, in a plain brown envelope, in the copier center area.
Action 1: The OMA responded to the message sent by Heidi Kolden and contacted the EP Representative for envelopes and empty stickers.
Action 2: The EP Representative took the batteries from the area. No further action required.
- 912/076F: There are several cans of aerosols and a small bottle of Isopropanol being stored in a cabinet that is not rated for flammable storage.
Action 1: The owner of the area who escorted the EP Representative indicated that he had a flammable cabinet and would move it down to accommodate the proper storage as soon as possible.