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Environmental Management System Objectives & Targets Results Summary – FY 2013

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Environmental Management System (EMS) Objectives & Targets Annual Results Summary – FY2013

Environmental Management System
Sandia National Laboratories
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Abstract

Sandia National Laboratories/New Mexico's (SNL/NM) Environmental Management System is the integrated approach for members of the workforce to identify and manage environmental risks. Each Fiscal Year (FY) SNL/NM performs an analysis to identify environmental aspects, and the environmental programs associated with them are charged with the task of routinely monitoring and measuring the objectives and targets that are established to mitigate potential impacts of SNL/NM's operations on the environment. An annual summary of the results achieved towards meeting established Sandia Corporation and SNL/NM Site-specific objectives and targets provides a connection to, and rational for, annually revised environmental aspects. The purpose of this document is to summarize the results achieved and documented in FY2013.

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We would like to thank all the members of the Corporate EMS Team and Points-of-Contact who contributed to the monitoring and measuring of Corporate EMS Objectives and Targets during FY2013:

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ACRONYMS & ABBREVIATIONS

AOP	Administrative Operating Procedure
BTU	British Thermal Unit
C&D	Construction & Demolition
CIS	Chemical Information System
CO2e	Carbon Dioxide Equivalents
Corporate	Sandia Corporation
DOE	U. S. Department of Energy
EISA	Energy Independence and Security Act (of 2007)
EMS	Environmental Management System
EO	Executive Order
FMOC	Facilities Maintenance and Operations Center
FY	Fiscal Year
gal	gallon(s)
GHG	Greenhouse Gas
gsf	gross square foot
HVAC	Heating, Ventilation, and Air Conditioning
MOW	Member of the Workforce
MSP2	Material Sustainability and Pollution Prevention
SDS	Safety Data Sheet
SF_6	Sulfur Hexafluoride
SNL	Sandia National Laboratories
SNL/NM	Sandia National Laboratories/New Mexico
SSP	Site Sustainability Plan
SWCRC	Solid Waste Collection and Recycling Center
yr	year

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1.0 INTRODUCTION

1.1 Description of the Activity

Sandia National Laboratories/New Mexico (SNL/NM) Environmental Management System (EMS) is the integrated approach for members of the workforce (MOW) to identify and manage environmental risks. Each Fiscal Year (FY), environmental aspects are evaluated and prioritized, and the environmental programs associated with them are charged with the task of routinely monitoring and measuring the objectives and targets that are designed to mitigate the impact of SNL/NM's operations on the environment.

Monitoring and measurement information supports SNL/NM EMS program compliance requirements and provides a status of overall progress in meeting environmental objectives. Based on the annual evaluation and prioritization of environmental aspects, procedures for monitoring and measurement are revised to reflect Sandia Corporation (Corporate) and SNL/NM site-specific objectives and targets performance metrics, associated operational controls, and documentation requirements. An annual summary of the results achieved towards meeting established Corporate and Site-specific objectives and targets provides a yearly overview of environmental performance and a connection to, and rational for, the annual evaluation and prioritization of environmental aspects.

1.2 Purpose & Scope

The purpose of this document is to annually summarize results achieved and documented through monitoring and measurement of Corporate and SNL/NM Site-specific objectives and targets established to progress SNL/NM towards mitigating its significant environmental aspects. In addition, this annual summary provides a roadmap for year to year changes in the significant aspects and objectives and targets tracked by the SNL/NM EMS Team. This provides consistency, continuity, and connectivity between objectives and targets for the previous, current, and upcoming years.

In FY2011, an important scope change occurred when the U.S. Department of Energy (DOE) issued DOE Order 436.1, *Department Sustainability,* which superseded DOE Orders 450.1 and 430.2A. This new DOE Order requires sites to use EMS as a platform for Site Sustainability Plan (SSP) implementation and for programs with objectives and measurable targets that contribute to the DOE meeting its sustainability goals. Although this order is not within Sandia Corporation's Management and Operating Contract, the intent of the DOE Order is implemented through the contract's requirement for an International Organization for Standardization 14001 certified EMS. SNL/NM's EMS had previously included several SSP sustainability goals as objectives and targets, but were measured and monitored on the basis of SNL/NM activities only. The scope of measuring and monitoring SSP-specific sustainability goals was expanded in FY2011 to include all Sandia National Laboratories (SNL) sites (e.g., New Mexico, California, Nevada, and Hawaii). Therefore, each EMS objective and target described in this document differentiates the applicable scope as either "Site-Specific for SNL/NM" or "Corporate SSP Goal for all SNL Sites."

Processes and procedures associated with measuring and monitoring of EMS objectives and targets are described in administrative operating procedure (AOP), EMS *Monitoring & Measuring Procedures, AOP 09-06*.

2.0 OBJECTIVES AND TARGETS SUMMARY

2.1 Environmental Aspect: Air Emissions – Greenhouse Gas (GHG)

Objective: Reduce GHG Footprint
Target: By FY2020, reduce Scope 1 & 2 GHG emissions by 28 percent relative to a FY2008 baseline.
Scope: Corporate SSP Goal for all SNL Sites

This corporation-based goal is identified in the SSP and originates from Executive Order (EO) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*. EO 13514 requires DOE to reduce its GHG Scope 1 & 2 emissions by 28 percent by FY2020 from a FY2008 baseline. Scope 1 consists of direct emissions such as on-site combustion of fossil fuels or fugitive GHG emissions, whereas Scope 2 consists of indirect emissions associated with the consumption of electricity, heat, or steam. Sites are expected to aggressively strive towards the overall DOE goal of a 28 percent reduction, but will not necessarily be held to it, as actual targets will be defined at the DOE Under Secretary level.

While individual DOE sites are not required specifically to meet the 28 percent target that the agency as a whole is committed to meeting, SNL as a corporation has adopted an equivalent GHG reduction in the SSP and as an EMS Objective and Target. As a result, this objective and target have been revised from FY2010 with respect to scope. Adoption of the Corporate SSP goals for GHG reduction changed the scope from SNL/NM-specific to include all SNL sites.

FY2013 Results:
As of year-end FY2012, SNL has reduced Scope 1 and 2 GHG emissions by 46 percent from a FY2008 baseline. The major source of SNL's Scope 1 GHG emissions is fugitive emissions. Sulfur Hexafluoride (SF_6) is the primary contributor to SNL fugitive GHG emissions, accounting for approximately 86 percent of Scope 1 emissions in FY2013. Due to the extensive use of SF_6 in SNL pulse power and high voltage research and development applications, Scope 1 emissions are expected to vary widely from year to year depending on the extent and scope of activities conducted. SNL continues to investigate and implement measures to reduce SF_6 emissions, including retrofit/replace switchgear equipment, improve storage equipment, deploy new and more efficient reclaim units, and improve measuring and tracking methods. Section 2.1.1 of the SNL FY2014 SSP contains additional information regarding SF_6 emission reduction activities.

The only component of SNL's Scope 2 GHG emissions is grid-based electricity use, because the majority of SNL's grid-provided electricity is generated from coal-fired power plants. There is a direct link between projects supporting electricity-use reduction and Scope 2 GHG emissions reduction. The SNL Energy Management Program implements electricity-use reduction measures, including free-cooling heating, ventilation, and air conditioning (HVAC) techniques, occupancy sensor-based lighting and HVAC controls, building temperature set-back points for non-occupied hours, implementing automated building control systems, etc. Section 2.1.1 of the

SNL FY2014 SSP contains additional information regarding Scope 2 GHG emission reduction activities.

Figure 1 shows SNL's FY2013 status towards meeting the GHG reduction objective and target, in terms of tonnes carbon dioxide equivalents (CO2e). Since this objective and target has a FY2020 timeline, monitoring and measurement progress will be ongoing.

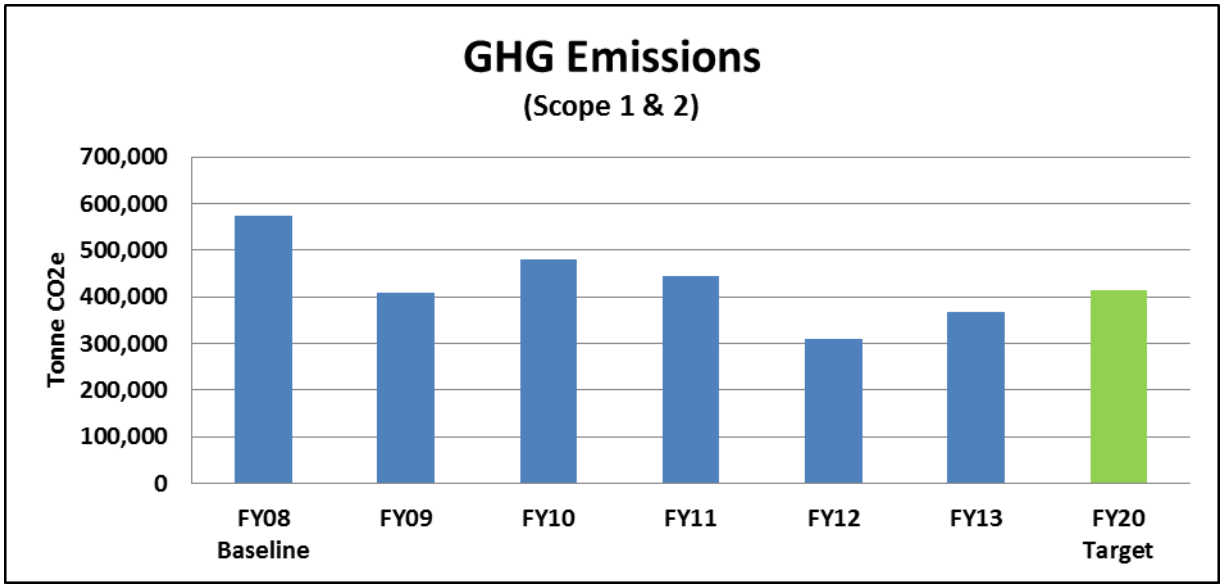

Figure 1. GHG Emission Reduction Trend

The GHG emissions reduction goal has a FY2020 timeline to completion. As a result, monitoring and measurement of this objective and target will be ongoing through FY2020.

2.2 Environmental Aspect: Air Emissions – SF_6

Objective: **Improve tracking and reporting of Sulfur Hexafluoride (SF_6) emissions**
Target: **Determine the quantity of SF_6 not consumed on site and returned to the gas supply vendor in empty tanks by end of FY2014.**
Scope: **Corporate Goal for all SNL Sites**

This two-year duration objective and target was established in FY2013 within the scope of the SNL/NM site only and is based on continual improvement of tracking and reporting SF_6 use. In recent years SNL has taken a number of steps to improve tracking SF_6 use. Previously, SNL/NM used the Chemical Information System (CIS) to estimate SF_6 use and emissions based on annual quantities of SF_6 purchased. Since annual purchases can vary based on several factors including budget, management, purchasers, and proposed projects, this methodology did not necessarily reflect annual usage or emissions.

In FY 2012, SNL began tracking SF_6 additions to the high-use systems at several of the pulsed power facilities (Z Pulsed Power Facility, HERMES III, RITS-6, Saturn, SPHINX, Sandia Lightning Simulator, and the Electro-Magnetic Environment Simulator). This method of tracking provides better information about SF_6 emissions at the equipment level, as well as identification of losses prior to use.

Although SNL has implemented processes for documenting quantities of SF6 received from the gas supply vendor, the quantities of gas remaining in cylinders returned to the vendor is unknown. As a result, this Objective and Target was established to quantify the amount of SF6 remaining in cylinders returned to the gas supply vendor so that such quantities can be accounted for when tracking SF_6 use and emissions.

Quantifying the amount of SF_6 remaining in empty tanks that are returned to the gas supply vendor is based on:

- Engaging site SF_6 users to identify participants in tank heel measurement activities during FY2013/FY2014.
- Developing a standardized data collection documentation form that includes pertinent information such as date, site location, SF_6 use activity, tank serial number, stamped tare weight, measured empty container weight, and corresponding unused SF_6 weight. The form should also include a description of the weight measuring device used and who collected the data.
- Obtaining a calibrated scale for temporary deployment at SF_6 user locations, if necessary.
- Working with SF_6 users to measure and document empty tank weights and stamped tank tare weights.
- Collecting empty and tare weight comparisons from various site SF_6 users over the period of performance of this objective and target (FY2013/FY2014).

The data collected will be evaluated to determine the potential for statistical significant (average) quantities of SF_6 remaining in empty containers returned to the gas vendor that could indicate over reporting of SF_6 emission by SNL.

FY2013 Results:
The 5-year history of SF_6 purchase data was evaluated to identify operations purchasing 115 pounds (1 cylinder) or more per year that could potentially be targeted to weigh tank heels. The SF_6 Working Group was addressed to discuss options and opportunities to measure SF_6 tank heels prior to return to gas vendor. Facilities Maintenance and Operations Center (FMOC) personnel were contacted for use of a scale that could be taken to activity locations to measure tank heel quantities and in the 3rd quarter of FY2013 a scale was provided to the Air Quality Compliance group for deployment as needed. Organization 01342 purchased a scale to weigh cylinders at the HERMES/SPHINX/Saturn storage area.

As of end-of-year FY2013, the following SF_6 users had indicated plans to participate to weigh and track tank heels prior to returning empty tanks to the gas supply vendor:

- Saturn/HERMES/SPHINX (1342)
- RITS (1656)
- Lightning Simulator Lab (1653)
- Radiography & Modal Testing (1522)

Only 1522 may require use of the FMOC scale, as the other users either already have measuring capabilities or implemented measuring capability during FY2013. Data results reporting will begin in FY2014.

The SF_6 Tank Heel determination goal has a two-year timeline to completion. As a result, monitoring and measurement of this objective and target will be ongoing through FY2014.

2.3 Environmental Aspect: Personnel Transportation

Objective: Reduce Use of Fleet Petroleum
Target: By FY2020, reduce fleet petroleum consumption by 2 percent per year relative to a FY2005 baseline.
Scope: Corporate SSP Goal for all SNL Sites

Objective: Increase the Use of Fleet Alternative Fuel
Target: By FY2015, increase fleet alternative fuel consumption by 10 percent per year relative to a FY2005 baseline.
Scope: Corporate SSP Goal for all SNL Sites

These two corporation-based goals are identified in the SSP and originate from EO 13514 *Federal Leadership in Environmental, Energy, and Economic Performance* (2009); EO 13423 *Strengthening Federal Environmental, Energy, and Transportation Management* (2007); and the *Energy Independence and Security Act of 2007* (EISA 2007). EO 13423 requires Federal agencies to reduce "subject" fleet petroleum use by 2 percent per year through FY2015 (from a FY2005 baseline), for an overall reduction of 20 percent. EO 13514 incorporates this requirement and extends it to FY2020, for an overall reduction of 30 percent. In addition, EISA 2007 requires federal agencies to increase the use of "subject" non-petroleum fuels, or alternative fuels, by 10 percent annually through FY2015 (from a FY2005 baseline), for an overall increase of 159.4 percent. "Subject" fuel includes the fuel used in all light-duty, medium-duty, and heavy-duty vehicles, unless such vehicles are exempted from EO 13423 (e.g., law enforcement, emergency, and military tactical vehicles, and vehicles operated outside of the United States).

While individual DOE sites are not specifically required to meet the petroleum fuel use reduction and alternative fuel use increase that the agency as a whole is committed to meeting, SNL as a corporation has adopted both these fuel use goals in the SSP and as EMS Objectives and Targets. As a result, these two objectives and targets have been revised from FY2010 with respect to scope. Adoption of the Corporate SSP goals for petroleum fuel use reduction and alternative fuel use increase changed the scope from SNL/NM-specific to include all SNL sites.

FY2013 Results:
SNL achieved an 8 percent reduction in fleet petroleum use relative to FY2012, far exceeding the annual 2 percent target reduction. This resulted in an overall cumulative reduction in fleet petroleum use of 39 percent from the baseline year FY2005, which is above the overall FY2020 target of a 30 percent reduction. SNL achieved an 11 percent increase in fleet alternative fuel use relative to FY2012. This resulted in an overall cumulative increase in fleet alternative fuel use of 149 percent compared to the baseline year FY2005. The overall cumulative alternative fuel use increase is exceeding the overall increase trend necessary to meet the FY2015 objective and target of 159 percent. Figures 2 and 3 depict the Fleet petroleum reduction and alternative fuel increase objective and target status, respectively, based on FY2013 results. Since these objectives and targets have FY2015 and FY2020 timelines, monitoring and measurement progress will be ongoing.

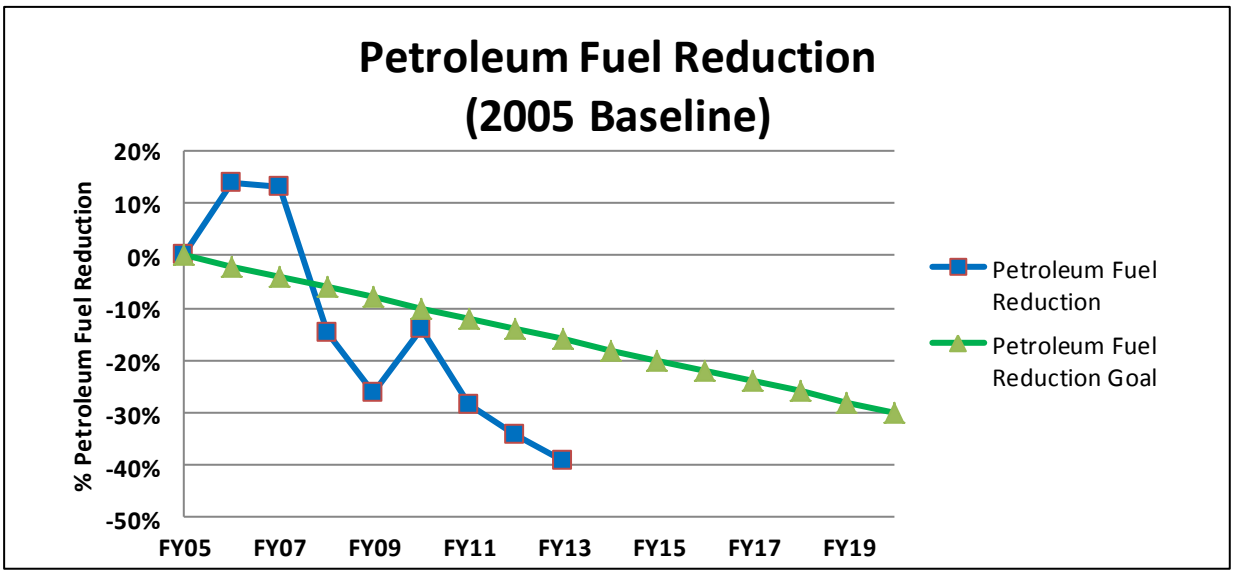

Figure 2. SNL Fleet Petroleum Use Reduction Trend

The Fleet petroleum fuel use reduction goal has a FY2020 timeline to completion. As a result, monitoring and measurement of this objective and target will be ongoing through FY2020.

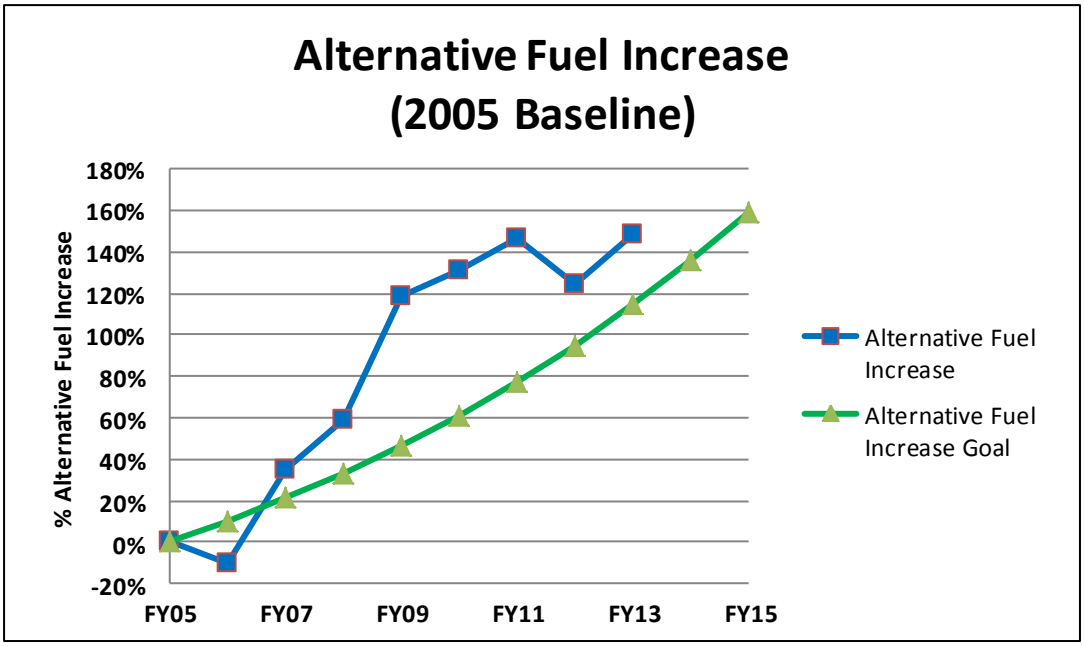

Figure 3. SNL Fleet Alternative Fuel Use Increase Trend

The Fleet alternative fuel use increase goal has a FY2015 timeline to completion. As a result, monitoring and measurement of this objective and target will be ongoing through FY2015.

2.4 Significant Aspect: Hazardous Materials

Objective: Reduce the Quantity of Legacy Chemicals
Target: Reduce chemicals between 10-15 years old to no more than 15% of the total chemical inventory.
AND
Reduce chemicals greater than 15 years old to no more than 10% of the total chemical inventory.
Scope: Corporate Goal for all SNL Sites

This Corporation-based objective and target had a one-year duration and was established in FY2013 to reduce the quantity of old, aging, unused and/or unwanted chemicals. Hazardous material is a significant environmental aspect for SNL/NM's EMS, and this objective and target supports continual improvement of hazardous materials management efforts. Corporate Procedure ESH100.2.ENV.27 contains requirements for the proper maintenance of chemical inventories and managing associated Safety Data Sheets (SDS) at SNL sites.

Chemical containers are tracked at all SNL sites through the CIS, which is an integrated chemical inventory and SDS document management system. The CIS tracks chemical containers through SNL applied barcodes. Information such as the chemical or product name, location, quantity, and information about who is responsible for the chemical is managed in the CIS database.

Chemical containers are removed from the CIS inventory by either disposition through the Hazardous Waste Management Facility (NM site) or other approved processes and vendors (other SNL sites) or through a reconciliation process verifying the inventory attributed to specific chemical owners or locations. Measuring and monitoring the chemical inventories between 10-15 years old and greater than 15 years old was based on CIS data.

FY2013 Results:
SNL reduced the total number of chemical containers in the CIS inventory by over 14,000 during FY2013, from 154,500 to 140,361. Legacy chemicals 10 to 15 years old were reduced from 22,642 containers (14.7 % of the total inventory), to 17,818 containers (12.7% percent of the total inventory). Legacy chemicals 10 years old and greater actually increased during FY2013 from 16,776 containers (10.9% of the total inventory) to 17,831 containers (12.7% of total inventory).

A number of issues arose during FY2013 that impacted the ability to achieve the legacy chemical reduction goals. First, CIS went through an inventory baselining exercise approximately 15 years ago, which resulted in a large number of chemicals falling into the category of 15 years old and greater during the FY2013 timeframe. In addition, the Hazardous Waste Management Facility was unable to process the increase in disposal requests that resulted from chemical owners attempting to purge legacy chemicals from their workspaces.

Figure 4 depicts the percentage of legacy chemical containers in the 10 to 15 year category and greater than 15 year old category for each Division and the Corporation.

Division	TARGET #1 % of Inventory 10-15 Years Old	TARGET #2 % of Inventory > 15 Years Old
1000	14.2%	17.1%
2000	10.7%	7.9%
3000	0.0%	1.9%
4000	4.8%	3.8%
5000	9.8%	10.4%
6000	14.9%	11.0%
8000	13.5%	10.6%
9000	8.8%	17.6%
10000	3.0%	6.3%
Corporation	12.7%	12.7%

Note: Numbers highlighted in yellow indicate exceedance of the target by less than 5% and numbers highlighted in red indicate exceedance of the target by more than 5%.

Figure 4. SNL Legacy Chemical Inventory Reduction Results

The Legacy Chemical reduction goal has a one-year duration (FY2013). As a result, monitoring and measurement of this objective and target is considered complete.

2.5 Environmental Aspect: Solid Waste

Objective: Reduce Waste
Target: By end of year FY2014, reduce non-hazardous solid waste (excluding C&D waste) by 15% relative to FY2012 baseline.
Scope: Site-Specific for SNL/NM

This two-year duration objective and target was established in FY2013 within the scope of the SNL/NM site only and is considered a "stretch" goal for continually improving solid waste reduction. The objective and target is based on reducing (or diverting) solid waste sent to the landfill through measures incorporating the Pollution Prevention hierarchy of reduce, reuse, and recycle. Construction and demolition (C&D) waste is specifically excluded from this objective and target, as generation rates for this portion of the solid waste stream is highly variable at SNL/NM.

The Material Sustainability and Pollution Prevention (MSP2) program (within Organization 4144) coordinates, implements, and tracks solid waste reduction activities and results. MSP2 provides guidance and assistance in waste reduction and diversion to both line organizations and the waste management operations teams. Solid waste reduction efforts to achieve this objective and target are based on:

- Implementation of activities identified in the *MSP2 Program Plan* (PG4270227) to reduce waste and increase recycling.
- Awareness and outreach to MOWs encouraging waste reduction actions and behaviors, participation in available recycling opportunities, and promoting reuse and general product and material stewardship.
- Implementation of sustainable acquisition opportunities (extended life products and materials, reusable products and materials, etc.)
- Increased solid waste tracking accuracy at cafeterias through elimination of separate "wet" waste disposal requirements.

FY2013 Results:
Through the end of FY2013, solid waste generation increased by 4 percent relative to the FY2012 baseline. Although solid waste generation decreased during the first two quarters of FY2013, solid waste generation increased significantly in the 3rd and 4th quarters resulting in an overall 4 percent increase for FY2013. The increase is believed to have resulted from numerous rain events during the summer and fall months (third and fourth quarters FY2013).

In general, solid waste is collected in outdoor dumpsters prior to being picked up for screening and baling at the Solid Waste Collection and Recycling Center (SWCRC) facility. While awaiting pickup, solid waste in dumpsters is commonly exposed to inclement weather. Although SNL/NM solid waste dumpsters have lids to protect contents from the elements, personnel depositing solid waste leave the dumpster lids open and closed lids are commonly blown open by strong, persistent Tijeras Canyon winds.

The SWCRC weighs each bale of solid waste generated. Bale weights during the rainy periods in FY2013 exceeded historical bale weights thereby leading to the conclusion that water weight

associated with absorbed precipitation in the solid waste is the most likely cause for the increase in solid waste generation. The MSP2 organization is currently investigating opportunities to implement auto-closing lids on dumpsters to ensure the weight of solid waste bales represents a dry weight. The MSP2 program is investigating potential solutions to ensure solid waste dumpster lids remain closed when not in use.

Figure 5 depicts the quarterly SNL/NM solid waste generation trend, as compared to the FY2012 baseline.

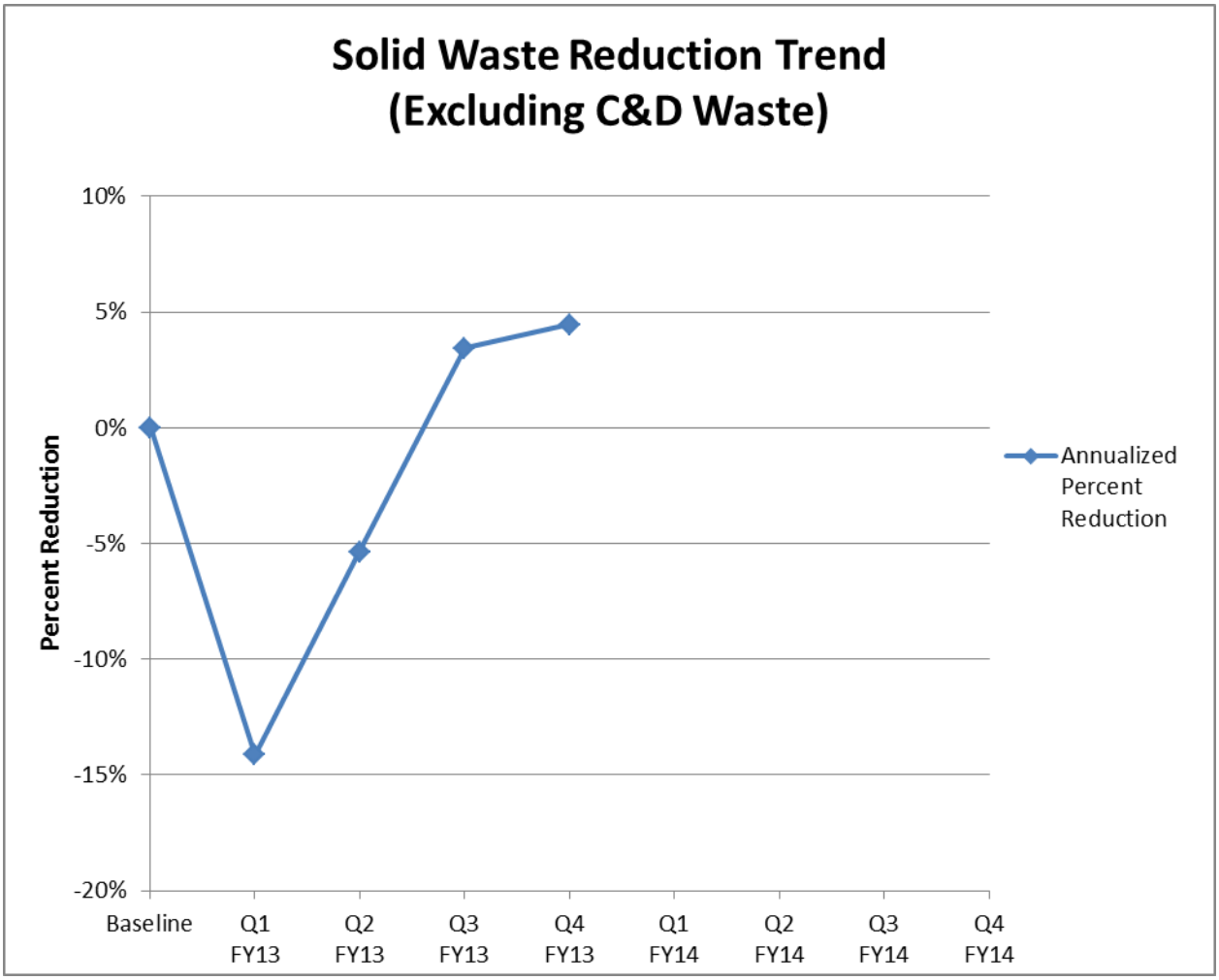

Figure 5. SNL/NM Solid Waste Reduction Trend

The Solid Waste reduction goal has a two-year timeline to completion. As a result, monitoring and measurement of this objective and target will be ongoing through FY2014.

2.6 Environmental Aspect: Resource Use – Energy

Objective: Reduce Annual Energy Use
Target: By FY2015, reduce energy intensity by 30 percent relative to FY2003 (excluding buildings that meet the guidelines for Federal Energy Management Program excluded buildings).
Scope: Corporate SSP Goal for all SNL Sites

This corporation-based goal is identified in the SSP and originates from EISA 2007, which requires DOE to reduce its energy intensity by 30 percent by FY2015 from a FY2003 baseline. This objective and target has been revised from FY2010 with respect to scope. Adoption of the Corporate SSP goal for energy intensity reduction changed the scope from SNL/NM-specific to include all SNL sites.

Energy intensity, as opposed to overall energy use, is a measure that normalizes energy use by allowing for increases or decreases in the size of SNL due to changes in mission and work scope. Energy intensity is measured in terms of energy use per square foot of building space, or British Thermal Units per gross square foot (BTU/gsf), and when measured on an annual basis, intensity becomes energy use per gsf of building space per year (or BTU/gsf/yr).

SNL has an Energy and Water Resource Management program that is assigned the responsibility of ensuring energy efficiency is integrated and institutionalized into SNL sites planning, design, construction, operations, and infrastructure including, Environment, Safety and Health policies, processes, and procedures. Significant opportunity for energy demand reduction exists at SNL, because 60 to 70 percent of the peak energy intensity occurs at night and on weekends. In other words, significant energy demand occurs even during non-working hours. As a result, SNL continually strives to reduce energy consumption through a variety of means, including improved facility control measures, implementation of new and more efficient equipment, razing of outdated, inefficient buildings, etc.

FY2013 Results:
SNL is on track to meet the objective and target for energy intensity reduction. In FY2013, energy use intensity was decreased by over 2 percent relative to FY2012, from 142,814 BTU/gsf/yr to 139,443 BTU/gsf/yr. This corresponds to an overall 28.3 percent reduction relative to the FY2003 baseline of 194,533 BTU/gsf/yr. Figure 6 displays SNL's annual energy intensity trend from the FY2003 baseline.

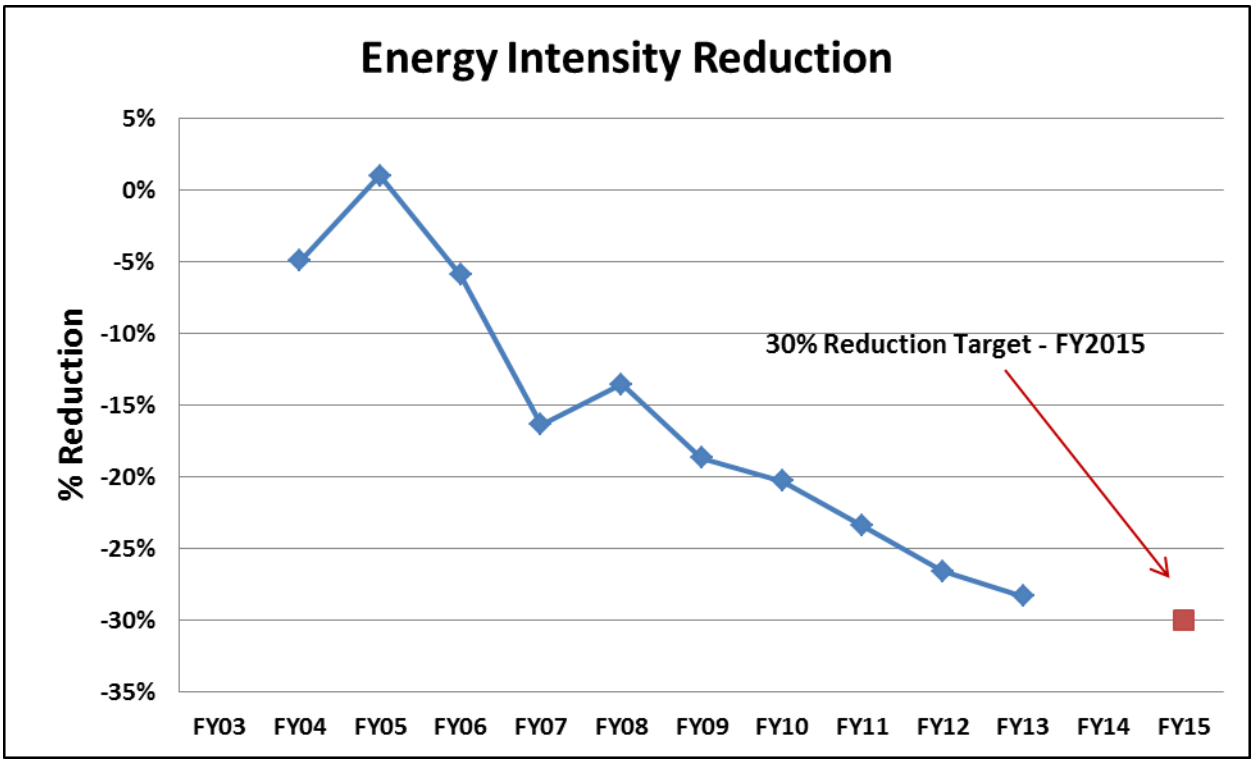

Figure 6. Annual Energy Use Intensity Reduction Trend

The energy intensity reduction goal has a FY2015 timeline to completion. As a result, monitoring and measurement of this objective and target will be ongoing through FY2015.

2.7 Environmental Aspect: Resource Use – Water

Objective: Reduce Water Use
Target: By FY2020, reduce potable water use intensity by 26 percent relative to FY2007.
Scope: Corporate SSP Goal for all SNL Sites

This corporation-based goal is identified in the SSP and originates from EO 13514; *Federal Leadership in Environmental, Energy, and Economic Performance*, which requires DOE to reduce potable water consumption intensity 26 percent by FY2020 relative to a FY2007 baseline. Water use intensity, as opposed to overall water use, is a measure that normalizes water use by allowing for increases or decreases in the size of SNL due to changes in mission and work scope. Water use intensity is measured in terms of water use per square foot of building space, or gallons per gsf (gal/gsf), and when measured on an annual basis becomes water use per gsf of building space per year (or gal/gsf/yr).

This objective and target has been revised from FY2010 with respect to description and scope. Adoption of the Corporate SSP goal for water use intensity reduction changed the scope from SNL/NM-specific to include all SNL sites. In addition, the previous goal and driver for water reduction, DOE Order 430.2B, has been cancelled and replaced with the more aggressive EO 13514 goal. DOE Order 430.2B, *Departmental Energy, Renewable Energy and Transportation*

Management, had required DOE to reduce water intensity by no less than 16 percent by FY2015, relative to a FY2007 baseline.

SNL continually strives to reduce overall water consumption through a variety of means, including implementation of low-flow plumbing fixtures, improved cooling tower operating practices, efficient landscape irrigation technology, etc. SNL has determined that ultra-pure water process systems are one of the largest sources of water use, while cooling is the next-largest water-using process. Although irrigation does not account for a significant amount of the water consumed, an area that is difficult to quantify is construction and the recent reduction in construction activities helped reduce water consumption. Increased cooling tower cycles, condition assessments, and leak repairs on the water-distribution system have contributed to water savings.

FY2013 Results:
In FY2013, water use intensity was essential unchanged from FY2012, increasing by only 0.2 percent from 52.6 gal/gsf/yr to 52.7 gal/gsf/yr. This corresponds to an overall cumulative reduction of 30.1 percent reduction relative to the FY2007 baseline of 75.4 gal/gsf/yr. Although the current reduction status exceeds the 26 percent target, water use intensity has increased in each of the past two years. These increases are attributed to the ongoing drought conditions and increased temperatures experienced in both the New Mexico and California regions. These conditions result in increased water use associated with building HVAC operations as well as landscape irrigation. Figure 7 displays SNL's annual water consumption trend since the FY2007 baseline.

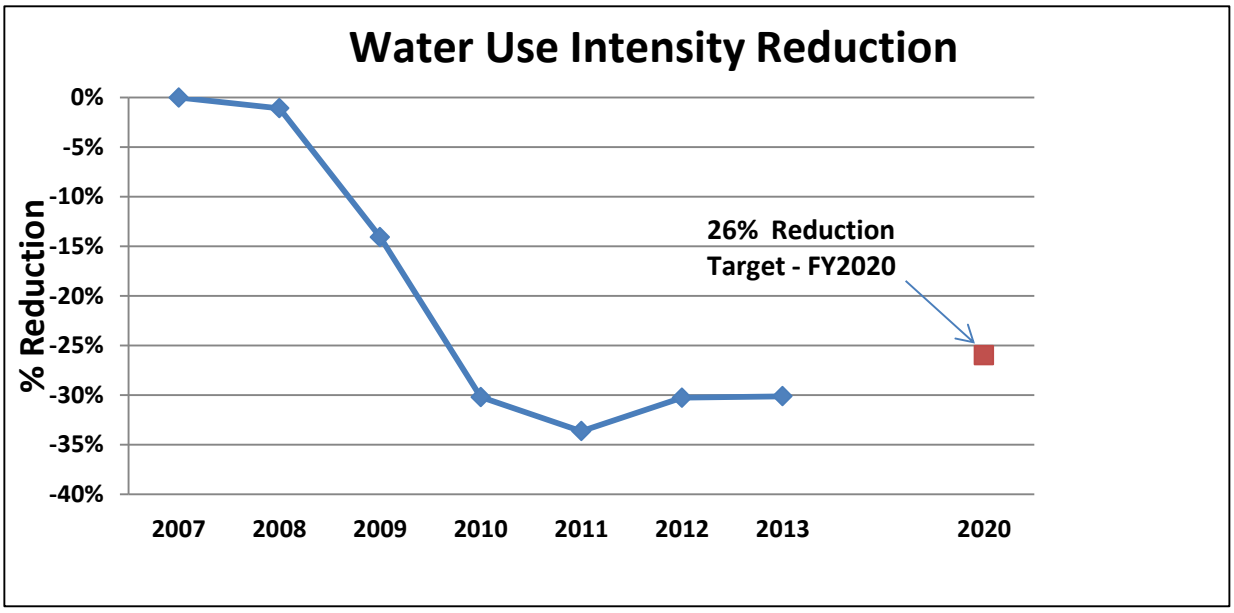

Figure 7. Annual Water Use Intensity Reduction Trend

The water use intensity reduction goal has a FY2020 timeline to completion. As a result, monitoring and measurement of this objective and target will be ongoing through FY2020.

3.0 DOCUMENTATION AND RECORDKEEPING

The data (status of Objectives and Targets) that is collected in accordance with the Monitoring and Measurement Procedure (AOP 09-06, EMS Monitoring & Measurement Procedures) is maintained and tracked on the EMS Implementation SharePoint Site. The data is provided for management review.

4.0 REFERENCES

4.1 Reference Documents

Sandia National Laboratories/New Mexico, Environmental Management System Manual, PG470222.
Sandia National Laboratories/New Mexico, EMS Monitoring & Measuring Procedures, AOP 09-06.
Sandia National Laboratories, *FY2014 Site Sustainability Plan*, December 2013, SAND2013-10633P.

5.0 ATTACHMENTS

Not Applicable.

6.0 DEFINITIONS

EMS – The Environmental Management System is a part of an organizations management system used to develop and implement its environmental policy and manage its environmental aspects.

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