



**NATIONAL NUCLEAR SECURITY  
ADMINISTRATION**

**FISCAL YEAR 2010  
PERFORMANCE EVALUATION REPORT OF  
SANDIA CORPORATION**

**FOR THE MANAGEMENT AND OPERATION OF  
SANDIA NATIONAL LABORATORIES**

**Contract No. DE-AC04-94AL85000**

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**NNSA FISCAL YEAR 2010 PERFORMANCE EVALUATION REPORT  
OF SANDIA NATIONAL LABORATORIES**

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## EXECUTIVE SUMMARY

### Introduction

The Fiscal Year 2010 (FY 2010) Performance Evaluation Report (PER) represents the U.S. Department of Energy/National Nuclear Security Administration's (DOE/NNSA) evaluation of Sandia Corporation's (Sandia) performance against the Performance Objectives (POs) and Performance Incentives (PIs) defined in the Original FY 2010 Sandia Performance Evaluation Plan (PEP) Revision 3 and Alternate FY 2010 Sandia PEP Revision 1 under Contract Number DE-AC04-94AL85000.

### Integration of the FY 2010 Alternate Performance Evaluation Plan

This year the process of performance assessment and evaluation underwent an important transformation as the joint Sandia Site Office (SSO)/Sandia Governance and Oversight Reform led the way to a revised, mission focused PEP (Alternate PEP) and a greater transparency of Sandia's management and performance information to Sandia's Government counterparts. The Original PEP governed the FY 2010 PEP performance criteria for the first three quarters of the fiscal year, and the Alternate PEP governed the FY 2010 performance criteria for the fourth quarter. While the Original and Alternate PEPs differ in structure, much of the content overlaps. Where gaps existed, they were addressed in the narrative of this PER and under "Other Considerations" in the impacted POs.

The Alternate PEP incorporated a number of important features. The mission focused POs have a measure to address any support function issue affecting overall mission performance. The robust POs not only address performance on Level II Milestones but also consider impacts created by staffing/budget projections, customer satisfaction, and internal management reviews. The Alternate PEP leverages the Sandia Contractor Assurance System (CAS) to aid in oversight of all functional areas, which has resulted in an improved CAS. The incentive construct did not change and performance expectations remained for four of the five PIs.

### Structure and Organization

The FY 2010 PER is structured into two sections: POs and PIs. The PO and PI section is further divided into three Performance Groups: Mission, Operations, and Business. Each PO and PI element is comprised of Measures and Targets. The Mission Performance Group documents the Measures and Targets for the performance evaluation of Sandia's programmatic work. The Operations Performance Group and Business Performance Group document the Measures and Targets for the performance assessment of critical operations, infrastructure, and business activities supporting the mission.

Consistent with both the FY 2010 Original and Alternate PEP, issued pursuant to the contract, Sandia's performance was assessed against the evaluation criteria using a variety of different approaches including, but not limited to, peer review, external reviews, achievement of milestones relevant to targets, customer feedback, and program reviews. The highlights of Sandia's accomplishments and weaknesses during this fiscal year are addressed below and are preceded by Exhibit 1: *Scoring of FY 2010 Performance*, which delineates the adjectival ratings for each PO and PI.

Sandia's overall performance in the Mission Performance Group is rated as "Outstanding" for FY 2010. Sandia continues to demonstrate exceptional leadership across the Nuclear Security Enterprise and provides high quality scientific and engineering support to the United States' national security interests. In support of enterprise-wide goals, Sandia completed 97% of the scored Level II Milestones on or ahead of schedule but continued to encounter issues on the W76-1 program and completion of a plutonium test at Z-Machine. Sandia continues to demonstrate leadership in science, technology and engineering (ST&E) by strategically concentrating on the science that underpins and enables technology for DOE missions. Additionally, Sandia continues to maintain and develop expertise, facilities and equipment to create world-class science that pushes the frontiers of knowledge, in anticipation of future emerging threats and mission needs. Lastly, Sandia

received numerous prestigious awards and honors for ST&E advances, including four Research and Development 100 Awards.

Sandia's overall performance in the Operations Performance Group is rated as "Very Good" for FY 2010. Sandia continues its five-year trend of reductions in Total Recordable Case Rate and Days Away, Restricted, Transferred Case Rate. Sandia also continued to maintain ISO 14001 compliance for Environmental Management, and continues a three-year trend of successfully passing the annual New Mexico Environment Department unannounced Hazardous Waste Inspection without issuance of any violations. Sandia has also demonstrated enterprise-wide leadership with the implementation of Work-for-Others full cost recovery efforts that yielded approximately \$22 million in funds that were returned to NA-70 and continues to operate the Sandia Counterintelligence Program at an "Outstanding" level of performance.

Sandia's performance in the Business Performance Group is rated as "Outstanding" for FY 2010. Sandia demonstrated enterprise-wide leadership with the implementation of initiatives in Human Resources, Information Technology and Cyber Security. Sandia continued initiatives to reduce the government's long-term liability as well as align pension and benefit plans with market comparators. Sandia also developed data collection processes and repositories to support national crisis responses and enterprise-wide efforts while maintaining leadership in cyber incident management capabilities. Sandia also achieved initial scope corporate ISO 9001:2008 registration for its management system in November 2009. Additionally, throughout FY 2010, Sandia responded to the Administrator's direction regarding governance reform. In doing so, Sandia met all established milestones for governance deliverables and worked diligently to improve understanding, and resolve questions and concerns from Senior NNSA Management.

Although there is more work to be done in this area, Sandia has continues to work toward improved transparency of Sandia's management and performance information to their Government counterparts. Sandia is working to accomplish this through Executive Management Reviews, which are used to manage Sandia National Laboratory (SNL), and are now completely open to federal oversight to ensure the operations of SNL meet the NNSA goals. Lastly, Sandia has utilized external experts to evaluate the measures and metrics system of the Integrated Laboratory Management System / Performance Assurance System to ensure that it is relevant to meet Sandia and NNSA goals to enhance the management review process. This review concluded that although progress has been made, continued improvements throughout Sandia are required.

ADJECTIVAL RATING SCALE

**Table 1: FY 2010 Rating Scale**

Objective and Incentive PEP elements were assessed using the rating scale below. Ratings will be communicated to Sandia in accordance with the performance assessment schedule as outlined in Special Provision H-10, "Performance Based Management."

Award Fee Adjectival Rating	Award Fee Pool Available to be Earned	Adjectival Rating Common Definition
Outstanding	91-100%	Contractor has exceeded almost all of the significant award fee criteria and has met overall cost, schedule, and technical performance requirements of the contract as defined and measured against the criteria in the award fee plan for the award-fee evaluation period.
Very Good	76 – 90%	Contractor has exceeded many of the significant award fee criteria and has met overall cost, schedule, and technical performance requirements of the contract as defined and measured against the criteria in the award fee plan for the award-fee evaluation period.
Good	51% - 75%	Contractor has exceeded some of the significant award fee criteria and has met overall cost, schedule, and technical performance requirements of the contract as defined and measured against the criteria in the award fee plan for the award-fee evaluation period
Satisfactory	No Greater than 50%	Contractor has met overall cost, schedule and technical performance requirements of the contract as defined and measured against the criteria in the award fee plan for the award-fee evaluation period
Unsatisfactory	0%	Contractor has failed to meet overall cost, schedule, and technical performance requirements of the contract as defined and measured against the criteria in the award fee plan for the award-fee evaluation period

**Note:** Due to the introduction of the "Very Good" category, the gateway required achieving "Very Good" to access the At-Risk fee.

## SCORING SUMMARY

### Exhibit 1: Rating of FY 2010 Performance

ELEMENT	RATING
<b>Mission Performance Group:</b>	
PO-1: Defense Programs - Capabilities, Facilities and Research (Original and Alternate PEP)	Outstanding
PO-2: Defense Programs - Directed Stockpile Work (Original and Alternate PEP)	Very Good
PO-3: Defense Nuclear Nonproliferation (Original and Alternate PEP)	Outstanding
PO-4: Science and Technology Programs (Original and Alternate PEP)	Outstanding
<b>Overall Mission:</b>	Outstanding
<b>Operations Performance Group:</b>	
PO-5: Facility Operations (Original and Alternate PEP)	Very Good
PO-6: Safeguards & Security and Counterintelligence (Original and Alternate PEP)	Very Good
PO-7: Environment, Safety and Health, Emergency Management, Fire Protection, and Facilities (Original and Alternate PEP)	Very Good
<b>Overall Operations:</b>	Very Good
<b>Business Performance Group:</b>	
PO-8: Business System Performance (Original and Alternate PEP)	Outstanding
<b>Overall Business:</b>	Outstanding
<b>Total Performance Objective Rating</b>	
Outstanding	
<b>Performance Incentives:</b>	
PI-1: NNSA Mission (Original and Alternate PEP)	Outstanding
PI-2: Quality Assurance (Original and Alternate PEP)	Good
PI-3: Removal of Materials from Sandia National Laboratories (Original and Alternate PEP)	Very Good
PI-4: Learning Organization (Original PEP)	Good
PI-4: NNSA Governance (Alternate PEP)	Outstanding
PI-5: Business Management Process Efficiencies (Original and Alternate PEP)	Outstanding
PI-6: Multi-Site (Original and Alternate PEP)	Very Good
<b>Performance Incentive Aggregate Rating:</b>	Very Good
<b>Performance Incentive Fee</b>	\$8,438,431
<b>Fee Determining Official Adjustment</b>	-\$170,000
<b>Total Performance Incentive Fee Awarded</b>	<b>\$8,268,431</b>

## PERFORMANCE OBJECTIVES (PO) OVERVIEW

The Alternate Performance Evaluation Plan (PEP) incorporated a number of important features. The robust POs in the Alternate PEP not only address performance on Level II Milestones, like the Original PEP, but also consider mission impacts created by staffing/budget projections, customer satisfaction, and internal management reviews. The Alternate PEP also leverages the Sandia Contractor Assurance System (CAS) to aid in government oversight of all functional areas, which has resulted in an improved CAS.

The Alternate PEP combined the Original PEP's Defense Programs POs (PO-1: *Defense Programs Capabilities, Facilities and Research* and PO-2: *Defense Programs Directed Stockpile Work*) to PO-1: *Nuclear Weapons Mission*, combined the Original PEP's Operations POs (PO-5: *Facility Operations*, PO-6: *Safeguards and Security and Counterintelligence* and PO-7: *Environment, Safety and Health, Emergency Management, Fire Protection, and Facilities*) to PO-4: *Operations* and also added a new PO, PO-6: *Corporate Governance*.

## MISSION PERFORMANCE GROUP

Sandia Corporation's (Sandia) overall performance in the Mission Performance Group is rated as "Outstanding" for Fiscal Year 2010 (FY 2010). Sandia continues to demonstrate exceptional leadership across the Nuclear Security Enterprise (NSE) and provide high quality scientific and engineering support to the United States' national security interests. In support of Complex goals, Sandia completed 97% of the scored Level II Milestones on or ahead of schedule but encountered issues on the W76-1 program and surveillance activities. Sandia continues to demonstrate leadership in science, technology and engineering (ST&E) by strategically concentrating on the science that underpins and enables technology for DOE missions. Additionally, Sandia has maintained and further developed the expertise, facilities and equipment to create world-class science that pushes the frontiers of knowledge, in anticipation of future emerging threats and other mission needs.

### **PO-1 and PO-2: Defense Programs (Original and Alternate PEP)**

Sandia's overall performance in Defense Programs (DP) is rated as "Outstanding" for FY 2010. Sandia was instrumental to NNSA's success in meeting the mission and providing the necessary leadership for the NSE. Sandia continues to address a wide variety of complex issues and has exceeded performance expectations in several areas, such as:

- Completed 97% of the scored Level II Milestones in support of the mission.
- Worked with the Kansas City Plant (KCP) and Pantex to achieve W76-1 Initial Operating Capability for deliveries to the U.S. Navy in FY 2010.
- Delivered 848 neutron generators (NGs), more than double any past year, for the W76 and W78 and delivered 22,125 components, all on schedule.
- Completed 23 surveillance flight tests including eight B61 and B83 tests at Tonopah Test Range (TTR).
- Made progress and prepared for the nuclear scope B61 Phase 6.2 Life Extension Program (LEP) Study despite limited funding due to congressional limitations, which did not arrive until the fourth quarter.
- Assemble a team to support a new task to initiate the W78 Phase 6.1 LEP Study (over halfway through the year), which they completed before the end of the FY 2010.
- Supported Pantex by providing staff and data, on an aggressive schedule, to achieve the W84 and B53 Seamless Safety (SS)-21 start-ups, the last of the SS-21 start-ups. These are part of the "Getting the Job Done" list and is watched by Congressional committees.
- Demonstrated technologies to field an Integrated Surety System through development of conceptual design for the W78 design, procuring and delivering hardware for an end-to-end test, and completed conceptual electronics and container design for the W76.
- Revised Electron Neutron Generator Timeline and Project Plan, with Technical Readiness Level 5 assessment scheduled for October 2010, to support B83, B61 legacy, and B61 LEP objectives.
- Navigated Integrated Phase Gate C for W87 Small Ferroelectric Neutron Generator with no conditions.



- Completed design of prototype Gas Transfer System two months early.
- Managed the Advanced Simulation and Computing (ASC) program with the limited resources available. Sandia successfully demonstrated the ASC codes this fiscal year on the B61 program.
- Extremely responsive and proactive in fixing ASC problems.
- The National Ignition Campaign (NIC) hohlraum energetic campaign was successful with the completion (ahead of schedule) of Milestone 3414. Symmetric implosions were obtained in scale-0.9 and scale-1.07 cryogenic gas-filled hohlraums with shaped pulses of 16 ns and 19 ns for 3-omega energies of up to one megajoule. The first convergent ablation experiment worked well (backlit implosion). The NIC results were presented at the American Physical Society-Division of Plasma Physics meeting and at the NIC review.
- Enhanced ST&E capabilities with the completion of two major facility upgrades, including the Ion Beam Laboratory (IBL) in August 2010 and Combustion Research Computation and Visualization Facility in September 2010.
- Performed first beam on tandem accelerator in new IBL (June 2010).

Although Sandia demonstrated overall success in the DP assignments, there are areas of performance could be improved, such as:

- The W76-1 LEP continued to have issues throughout the year as the Code Blue continued.
- Throughout FY 2010, there were continuing issues at the Weapons Evaluation Test Facility, such as the W87 surveillance laboratory tests being completed six months after the milestone date, which affected other weapon systems surveillance laboratory tests.
- The delay in starting up the Aerial Cable Facility caused NNSA to request Department of Defense (DoD) move up the planned surveillance tests at TTR in FY 2011.
- Level II Milestone 3134 (plutonium experiments on Z-Machine) was not completed and impacted both the Science and Inertial Confinement Fusion programs, as well as other national laboratories.

**PO-3: Defense Nuclear Nonproliferation Programs (Original and Alternate PEP)**

Sandia's overall performance in the area of Defense Nuclear Nonproliferation is rated as "Outstanding" for FY 2010. Sandia continues to maintain advanced science and engineering capabilities and facilities required to support the detection, prevention, and reversal of the proliferation of weapons of mass destruction. Sandia provided outstanding support in global nuclear and radiological security, advancement of tools and technology to detect and prevent nuclear proliferation, transparency and global security engagement, and material protection control and accounting, which are all vital to meeting our national security needs. Sandia exceeded performance expectations in many areas such as:

- Surpassed goals set by Global Threat Reduction Initiative on securing nuclear and radiological buildings and installing In-Device-Delay program kits.
- Met delivery dates for subsystems and payloads, even under significant schedule and development challenges.
- Maintained crucial design interactions with the U.S. Air Force and the satellite vendor.
- Provided outstanding technical and policy advisory support for NA-24's programs.
- Provided experts for the New Strategic Arms Reduction Treaty (New START) negotiations, Cooperative Monitoring Center-Amman work, Interdiction programs, and Safeguards programs.
- Management of the Second Line of Defense (SLD) project was outstanding as the project met its metric requirements for new sites completed in FY 2010, only constrained by limited Russian resources.

**PO-4: Science and Technology Programs (Original and Alternate PEP)**

Sandia's overall performance in Science and Technology (S&T) Programs is rated as "Outstanding" for FY 2010. Sandia continues to advance the frontiers of science, technology and engineering (ST&E) solutions that underpins and enables technology for national security missions. Sandia has maintained a strong ST&E base, during a dynamic period of laboratory and management transitions. Sandia has provided excellent leadership in

the management of strategic research foundations, DOE sponsored energy, science and environmental programs, the Work-for-Others (WFO) program, the Laboratory Directed Research and Development (LDRD) program, and the Technology Partnerships program. Concurrently, Sandia has initiated a comprehensive assessment towards revamping ST&E capabilities under the new governance model with emphasis on capability management, S&T strategy, LDRD program management, and partnerships with industry, academia and other national laboratories.

Sandia continues to push the frontiers of ST&E and has exceeded performance expectations in several areas such as:

- Successful computational and informational science applications to develop risk assessment and uncertainty quantification methods to better understand climate change to determine the avoidance value of mitigation and adaptation options for U.S. State-Level Risk Assessment through FY 2050.
- Created computational algorithmic approaches to model the complex geology of the earth's interior using simulation technologies through large-scale seismic inversion.
- Significant advances in biofuels research to better understand the fundamentals of biofuel combustion chemistry in support of national transportation energy security.
- Completed the Phoenix Series of large-scale Liquefied Natural Gas engineering and thermal science experiments to complete threat consequence and vulnerability assessments.
- Significant advances in hydrogen storage research to advance scientific understanding of metal borohydride materials, as lead laboratory of the Metal Hydride Center of Excellence.
- Major scientific contributions as partner in the Joint BioEnergy Institute to advance the technology of efficient biofuel production, thereby contributing to science breakthroughs leading to the next-generation of biofuels.
- Significant materials science and technology breakthroughs to advance solid state lighting, by exploring growth mechanisms that control indium gallium nitride (InGaN) step morphology to better understand how InGaN quantum well structures can be tailored to enhance localization and thereby advance light emitting diodes (LED) brightness.
- Development of nanoscience tools and capabilities to measure the structural changes and electro-mechanical behavior of lithium ion battery materials during active charge-discharge cycling.
- Development of a new multi-wavelength, range-resolved Light Detection and Ranging (LIDAR) system to expand remote sensing capabilities.
- Successfully developed low-cost, portable, highly sensitive detection system for simultaneous, individual hazardous chemical detection in water, using nanoporous-carbon coatings in surface acoustic wave devices.
- Enhanced quantum computing capabilities by successfully demonstrating functioning Y junction ion trap in silicon ion trapping and shutting.
- Enhanced Microsystems capabilities by successfully completing chip integration of terahertz quantum-cascade laser and diode mixer into a monolithic solid-state transceiver.
- Performed first beam on tandem accelerator in new IBL.
- Outstanding experimental and theoretical results in dynamic materials properties, radiation physics, and magnetically driven implosions research.

Notable S&T programmatic accomplishments include:

- Numerous awards and commendations for excellence in S&T, including four Research and Development 100 Awards.
- Completed the complimentary DOE Office of Science/Basic Energy Science sponsored Materials Science and Center for Integrated Nanotechnologies triennial program reviews.
- Selected for computational science capabilities to lead two technical areas for creation of virtual nuclear reactor in support of DOE Nuclear Energy Modeling and Simulation Energy Innovation Hub.

- Selected for Defense Advanced Research Projects Agency sponsored Ubiquitous High Performance Computing program to help reinvent computing for terascale embedded systems, petascale racks and exascale computer systems.
- Awarded Intelligence Advanced Research Projects Activity sponsored project for Multi-Qubit Quantum Coherent Operations technology development.
- Major scientific breakthroughs that have generated various patents, licenses, science publications, and awards of excellence in technology transfer, which have resulted in numerous invitations for presentations at various scientific symposia, colloquiums and major conferences.
- Outstanding and significant outcomes and technology deployments in support of DOE sponsored science, energy security, nuclear security, and environmental programs.
- Managed 432 LDRD projects, ~ \$155 million program, which provides the underlying science to develop technology and engineering solutions for a broad spectrum of national security applications.
- Outstanding S&T contributions made in support of other federal agency missions, including DoD, Department of Homeland Security, and Intelligence programs.

Although Sandia demonstrated overall success in S&T capabilities, the following are examples of areas Sandia should focus on during FY 2011 to further strengthen overall ST&E base:

- Assessment of research foundations' portfolio to assure Sandia is in a position to respond to emerging national security threats, such as Cyber Security.
- Strengthen S&T capabilities integration across all SNL Strategic Management Units (SMU).
- Maturation of performance assurance based management of ST&E.
- Integration of SNL's operational requirements with mission planning and execution.
- Revamp early career development program to further strengthen scientific and engineering workforce with critical skills.
- Develop partnerships that leverage talent and ideas as an additional driver for innovative science-based engineering at Sandia.

#### **MISSION IMPACT (Alternate PEP)**

A major thrust of the governance transition to an Alternate PEP in the final quarter of FY 2010 was to better integrate the Business and Operations performance in Sandia's Mission with a primary focus on how Business and Operations impact programmatic results. While Sandia did not clearly articulate this integration within the FY 2010 Performance Evaluation Assessment Report, the Sandia Site Office (SSO) acknowledges this process took place through Sandia's Executive Management Reviews (EMR). Beginning in the third quarter, to ensure full transparency, Sandia began inviting the SSO to Sandia's EMRs. This EMR process elevates and addresses the issues and areas of concern in Policy Areas, SMUs and divisions. These sessions serve as collaborative performance reviews that add clarity to the performance evaluation process from both a corporate and government perspective. What follows are examples of the integral relationship between the Business and Operations performance to Sandia's Mission success.

**Business:** Sandia integrated sound business processes throughout SNL in support of mission and other work activities. For example, divisions within SNL raised concerns regarding increased hiring needs due to the anticipated increase in attrition and increased work scope in the coming two-year period. The Sandia Human Resources (HR) Policy Area addressed this issue and implemented critical improvements in talent acquisition and workforce planning to mitigate the impact and to stabilize the workforce. These improvements resulted in Sandia exceeding their FY 2010 hiring goals, more than doubling historic hiring trends. Notwithstanding these positive outcomes, there were certain concerns raised during FY 2010. As an example, Supply Chain Management personnel were not included early enough in project planning mission projects, which led to underestimating subcontract lead times and not fully integrating processes to ensure full contract compliance. Additionally, in Information Technology, the automation of HR management with PeopleSoft 9.0 has encountered numerous problems in its initial rollout. The PeopleSoft 9.0 application will lead to increased

record accuracy and efficiency, but limited savings were realized this year. While none of these issues prevented programmatic success, these issues did impact mission effectiveness and efficiency.

**Safety:** Work Planning and Control (WP&C) implementation by line organizations continues to be a challenge. There were several occurrences where planning and control of work could have been improved. In some cases, equipment interlocks were inadvertently by-passed without proper review and approval, resulting in workers being shocked. There were also cases where work conducted by subcontractors was not performed to the acceptable level of planning and controls. While none of these issues prevented programmatic success, these issues are leading indicators that continued improvement in Sandia's WP&C is needed to ensure the future mission is not adversely affected.

**Security:** Sandia's Integrated Surety System (ISS) has provided effective program management and administration of the Safeguards and Security (S&S) program in support of the Sandia mission and other work activities. Notwithstanding the positive outcomes in S&S, there were certain concerns raised in the ISS Policy Area during FY 2010. For example, Sandia's goal for security incidents related to 10CFR824 was 80 for FY 2010 but 86 target incidents were reported (64 in Mission organizations and 22 in Mission Support organizations.) As a result of the high number of reported incidents, ISS has been impacted for the past two years in terms of developing corrective measures and implementing improvement strategies designed to lower these numbers. While none of these incidents has singularly or cumulatively impeded programmatic success or mission accomplishment, the effectiveness of the overall security implementation within the line has been less than acceptable.

**Corporate Governance:** Sandia took the lead in developing a process to analyze DOE Orders to remove unnecessarily burdensome and duplicate requirements from the contract. Through this process, a number of DOE Orders are in the process of being removed from the contract, per NNSA Headquarters approval. The impact in terms of cost savings/avoidances and efficiencies to the mission will not be known until 2011, after full integration and implementation of these changes has occurred. Sandia has the infrastructure in place for an effective CAS and continues to mature and improve the system but implementation throughout SNL has not been fully achieved. Changes to the CAS, such as the focus on Management Reviews/EMR, are seen as a positive step but the process will need time to mature before the impact to mission efficiency can be determined.

## OPERATIONS & BUSINESS PERFORMANCE GROUP

### **PO-5: Facility Operations (Original and Alternate PEP)**

Sandia Corporation's (Sandia) overall performance in the area of Facility Operations is rated as "Very Good" for Fiscal Year 2010 (FY 2010). Sandia operated the nuclear and non-nuclear facilities in a safe and compliant manner. Safety basis documents for the nuclear facilities have been maintained up-to-date, but weaknesses persist with the non-nuclear facility safety basis documentation. Sandia successfully shipped 224 non-certified Cobalt-60 sources, avoiding future shipping costs. Although Sandia demonstrated overall success in the areas of Facility Operations, problems were identified with delays in the Auxiliary Hot Cell Facility startup activities, and operational issues at the Manzano Nuclear Facilities and Hazard Category 3 Onsite Transportation.

### **PO-6: Safeguards and Security/Counterintelligence (Original and Alternate PEP)**

Sandia's overall performance in the area of Safeguards and Security (S&S) and Counterintelligence (CI) is rated as "Very Good" for FY 2010. Sandia has managed and administered effective S&S and CI programs that support successful mission accomplishment while meeting protection and control requirements for national security assets. Despite having exceeded the number of 10CFR824 incidents for FY 2010, Sandia reduced the overall number of reported incidents in this category by 33% from the previous year. Additionally, Sandia reduced several aspects of the overall S&S footprint related to vaults and vault-type rooms and the total number of cleared facilities. Sandia has demonstrated enterprise-wide leadership with implementation of Work-for-Others (WFO) full cost recovery efforts that yielded approximately \$22 million in funds that were returned to NA-70. Sandia also achieved \$5 million in cost efficiencies that were due in part to implementation of the ACES program and streamlining of programmatic requirements that reduced the level of effort required in administration of the Protective Force Training program and the Physical Security programs.

### **PO-7: Environment, Safety and Health, Emergency Management, Fire Protection, and Facilities (Original and Alternate PEP)**

Sandia's performance in the area of Environment, Safety and Health (ES&H), Emergency Management (EM), Fire Protection (FP), and Facilities is rated as "Very Good" for FY 2010. Sandia continues its five-year trend of reductions in its Total Recordable Case Rate and Days Away, Restricted, Transferred Case Rate. Sandia continued to maintain ISO 14001 compliance for EM, and continues a three-year trend of successfully passing the annual New Mexico Environment Department unannounced Hazardous Waste Inspection without issuance of any violations. Sandia EM continues to maintain an effective and comprehensive EM Program, and has recently implemented a rigorous process to address longstanding issues with the Emergency Public Information program and the issues management processes. Sandia has demonstrated that FP improvements have been made against long-standing concerns, and has implemented improvements due to its Certificate of Occupancy process. With respect to Facilities, Sandia's performance in the Energy, Maintenance, and Site Planning has been very good. The Line Item Projects are projected to be completed ahead of schedule and under budget in FY 2011. In addition, the Ion Beam Laboratory facility succeeded in obtaining the Leadership in Energy and Environmental Design (LEED) Gold certification.

Although Sandia demonstrated overall success in the area of ES&H, EM, FP and Facilities, opportunities for improvement are in implementation efforts associated with Earned Value Management System in order to maintain certification, and ensuring sufficient work planning and control sustainment efforts.

### **PO-8: Business System Performance Business Management (Original and Alternate PEP)**

Sandia's performance in the area of Business System Performance Business Management is rated as "Outstanding" for FY 2010. Sandia demonstrated enterprise-wide leadership with implementation of initiatives in Human Resources, Information Technology, and Cyber Security. In addition, Sandia demonstrated effective business programs and functions to fully support successful mission accomplishment. Sandia continues to demonstrate effective legal management, resulting in lower levels of litigation than could be reasonably projected given the nature of operations at Sandia National Laboratory, the size of the workforce, and lower

associated costs. Sandia continues to demonstrate effective Business Management performance and has exceeded expectations in several areas such as:

- Implemented a workforce planning process to approach workforce needs and facilitate talent acquisition in response to anticipated attrition and expansion of work scope expected over the next two years.
- Developed data collection and repositories for both national crisis response and enterprise-wide initiatives.
- Recognized throughout DOE and NNSA for its incident management capabilities in the areas of forensics, real-time analysis, remediation and response as to come to the assistance of others.
- Integrated best industry practices from its parent company, Lockheed Martin, to improve Sandia's operational efficiencies.
- Achieved initial scope corporate ISO 9001:2008 registration for its management system in November 2009.

Although Sandia demonstrated overall success in Business System Performance Business Management, opportunities for improvement are in Sandia's Purchase Card program, as this is a repeat concern for this high-risk program. Additionally, the Office of Field Financial Management concerns need to be addressed regarding Sandia's potential non-compliance with several Cost Accounting Standards. Lastly, Sandia should reconsider their level of participation in enterprise-wide initiatives such as the Roof Asset Management Program, Enterprise Wireless, and the Supply Chain Management Center.

## PERFORMANCE INCENTIVES (PI) OVERVIEW

Four of the five PIs in the Alternate Performance Evaluation Plan (PEP) remained the same. PI-4: *Learning Organization*, in the Original PEP, was replaced with PI-4: *NNSA Governance* in the Alternate PEP to support Administrator Thomas D'Agostino's Governance Reform initiative<sup>1</sup>.

### PI-1: NNSA Mission - Stretch (Original and Alternate PEP)

Sandia's overall performance in achieving the stretch goals related to the NNSA Mission is rated as "Outstanding" for FY 2010. Sandia's performance in this stretch goal has increased their effectiveness as a leading contributor to the success of the Nuclear Security Enterprise (NSE). Sandia's significant achievements in the NNSA Mission stretch goals are as follows:

- Enhanced technical maturation of Reentry Vehicle/Reentry Body design in support of the future W78 Life Extension Program (LEP) and W88 Alternate (ALT).
- Developing surety mechanisms and firing set technology to support the B61 LEP, W78 LEP and W88 ALT.
- Developed the Electron Neutron Generator to support the B61 LEP and the B83 neutron generator (NG) replacement.
- Developing the Small Ferroelectric Neutron Generator to support the W87, W80 and W88 NG programs.
- Supported the B83 Gas Transfer System program planning from B83 Stockpile Systems and completed the preliminary options recommendations.
- Completed the Enhanced Surveillance Annual Report approximately four months ahead schedule.
- Increased transparency and availability of Work-for-Others Management Assurance information, including invitations to major program and project reviews.

### PI-2: Quality Assurance – Stretch (Original and Alternate PEP)

Sandia's overall performance in achieving the stretch goals in the area of Quality Assurance (QA) (nuclear weapons and non-weapons) is rated as "Good" for FY 2010. Specifically, Sandia shipped over 20,000 parts in FY 2010 with four escapes. Sandia Senior Management understands the Weapons Quality issues, have a path forward to address these issues and have developed performance measures in order to monitor progress. Sandia has shown progression on the issues raised through the improved Quality Assurance Survey (QAS) responses, which set the stage for reducing future issues and helped developed a path forward toward prevention. Although many product and process issues occurred this fiscal year, there is a noticeable change in the Sandia nuclear weapons management approach and understanding of the quality issues. In the area of non-weapons QA, Sandia completed the translation of the DOE O 414.1C QA requirements into their documentation of the Policy Areas and completed the assigned assessments of those Policy Areas. Although Sandia demonstrated overall success in achieving the stretch goals for QA, an opportunity for improvement is for Sandia to implement currently identified undertakings to improve the overall QA program at Sandia.

### PI-3: Removal of Materials from Sandia National Laboratories – Stretch (Original and Alternate PEP)

Sandia's overall performance in achieving the stretch goals of Removal of Materials from Sandia National Laboratories (SNL) is rated as "Very Good" for FY 2010. Sandia has performed well in preparing no defined use nuclear material for disposition, and in removing explosives. Sandia's collaboration with external organizations resulted in the achievement of numerous disposition goals and Sandia's diligence has resulted in exceeding performance expectations. The Sandia Site Office and Sandia worked together to acquire FY 2010 DOE/Environmental Management (EM) funding to prepare Lovelace Respiratory Research Institute transuranic (TRU) waste for off-site shipment. The funding was received in the fourth quarter of FY 2010, which delayed third quarter activities and impacted performance targets. While Sandia acknowledges and remains accountable for delays in TRU waste removal, SSO acknowledges that several of the issues were outside of Sandia's control.

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<sup>1</sup> Implementation of Governance Reform at the Sandia Site Office and Sandia National Laboratories, Thomas P. D'Agostino to Manager, Sandia Site Office, February 5, 2010.

**PI-4: Learning Organization – Stretch (Original PEP)**

Sandia's overall performance in achieving the stretch goals in Learning Organization is rated as "Good" for FY 2010. Sandia made significant progress in developing an Human Performance Improvement (HPI) training curriculum and provided training to 639 personnel for HPI-100 and 245 personnel for HPI-200. While some HPI deployment activities occurred, efforts to institutionalize HPI were delayed. Sandia identified the need for additional funds in the middle of FY 2010, a portion of which were made available in the fourth quarter. As a result, completion of an HPI website, development of metrics, establishment of a charter for the long-term HPI working group occurred late and deployment pushed into FY 2011. These activities, if continued in FY 2011, should either demonstrate significant *visible* progress in HPI deployment and practice or provide evidence of results indicating HPI practices have had an impact on performance.

**PI-4: NNSA Governance – Stretch (Alternate PEP)**

Sandia's overall performance in achieving the stretch goals for the NNSA Governance is rated as "Outstanding" for FY 2010. Throughout FY 2010, Sandia responded to the Administrator's direction regarding governance reform. Sandia met all established milestones for governance deliverables and worked diligently to improve understanding, and resolve questions and concerns from NNSA Senior Management. In addition, Sandia worked across the NSE to establish enduring processes, train other field sites, and mature the Governance approach to meet the Administrator's vision. Due to approval for implementation coming late in the fiscal year, no appreciable cost savings were recognized. Although Sandia demonstrated overall success in the NNSA Governance stretch goals, Sandia needs to continue to focus on transparency, a critical element to Governance, within the context of Contractor Assurance in FY 2011.

**PI-5: Business Management Process Efficiencies – Stretch (Original and Alternate PEP)**

Sandia's overall performance in achieving the stretch goals for Business Management Process Efficiencies is rated as "Outstanding" for FY 2010. Sandia's evaluation and transformation of corporate business processes across SNL in FY 2010 should yield enduring results that reduce complexity, increase standardization, and better align organizational execution. A byproduct of these efforts resulted in cost efficiencies which exceeding the annual target of \$15 million as well as the benchmarked Sandia initiatives to reduce the government's long-term liability and align pension and benefit plans with market comparators. The long-term liability initiatives are expected to reduce post-retirement healthcare liabilities by approximately \$240 million and over \$500 million in pension liability. While some targets proved extremely challenging, Sandia continued to strive for enduring, effective and efficient processes to guide the Laboratory into the future. Although Sandia demonstrated overall success in the Business Management Process Efficiencies PI stretch, documentation and validation of recorded cost efficiencies remains a concern despite a previously coordinated procedure.

**PI-6: Multi-Site Targets (Original and Alternate PEP)**

Sandia's overall performance in meeting the goals of the Multi-Site Targets is rated as "Outstanding" for FY 2010. Sandia's efforts resulted in the successful completion of eleven of the twelve targets in which Sandia participated in either a leadership or co-leadership role. Sandia's leadership resulted in outstanding performance across the NSE in the fulfillment of the performance target expectations. Specifically, Sandia delivered 848 NGs in FY 2010, exceeding all prior year shipments by more than a factor of two. Sandia also delivered 133 different component lots comprising 21,167 units from 10 different technology areas, which is a 22% increase from FY 2009 and an 89% increase from FY 2008. Although Sandia demonstrated overall success in the Multi-Site Targets, the completion of high-priority Defense Programs mission-related science experiments for Performance Target 3.3.b was evaluated as "Red" across all sites (Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Nevada National Security Site, and SNL). Additionally, while Sandia made progress in preparing for plutonium experiments on Z-Machine, Sandia was unable to complete the experiments as further discussed in Performance Objective-1: *Defense Programs - Capabilities, Facilities and Research*.



## PERFORMANCE EVALUATION PLAN ELEMENTS

### Mission Performance Objectives

#### PO-1: Defense Programs Capabilities, Facilities and Research – Essential

Develop and maintain the science and engineering capabilities, facilities, and associated infrastructure needed to contribute to a flexible and responsible Nuclear Security Enterprise.

**Adjectival Rating: OUTSTANDING**

#### Summary of Performance

Sandia's overall performance in Defense Programs (DP) Capabilities, Facilities and Research is rated as "Outstanding" for FY 2010. Sandia was instrumental to NNSA's success in meeting the mission and providing the necessary leadership for the Nuclear Security Enterprise (NSE). Sandia continues to demonstrate proficiency in addressing a wide variety of complex issues and, in some cases, exceeded expectations.

**Readiness in Technical Base and Facilities (RTBF):** Sandia completed all Level II Milestones and restarted the Rocket Sled Track in FY 2010.

**Advanced Scientific Computing (ASC):** The scope of these Level II Milestones includes the means to assess and certify the safety, performance, and reliability of nuclear weapons (NW). Sandia successfully completed and/or exceeded cost, schedule or technical requirements of all Level II Milestones. In addition, Sandia successfully completed two (Level II Milestones 3680 and 3682) Multi-Site Targets.

**Inertial Confinement Fusion (ICF):** Sandia successfully completed eight of nine Level II Milestones. The scope of these Level II Milestones includes the means to assess and certify the safety, performance, and reliability of NW. Sandia has done an outstanding job in advancing the science of Z pinches and moving toward achieving fusion in a Z pinch. The scientific progress has been outstanding, exceeding all expectations. In addition, all the major technical elements have advanced significantly this year and worked well to enable the scientific progress. This included the experimental techniques, diagnostics (especially spectroscopy), physics modeling, and pulsed power modeling. Sandia has made outstanding contributions to the National Ignition Campaign (NIC), considering the limited funding in this area.

**Science (SC):** Sandia completed 14 of the 15 Level II Milestones. The scope of these Level II Milestones includes the means to assess and certify the safety, performance, and reliability of nuclear weapons. Sandia did not complete the plutonium (Pu) shot as required, which impacted both the Science and ICF areas. In addition, Lawrence Livermore National Laboratory (LLNL) and Los Alamos National Laboratory (LANL) were impacted in FY 2010 due to the shot not being completed as required.

#### Significant Accomplishments

**RTBF:** Sandia maintained minimal safe, secure operational status in support of DP in spite of severe funding cuts to the RTBF program. Sandia completed the Ion Beam Laboratory (IBL) construction ahead of schedule and is projected to be under budget. Sandia initiated construction of the first phase of the Test Capabilities Revitalization (TCR) Phase 2 even with limited funding and removed 224 non-ANSI Gamma Irradiation Facility (GIF) sources in September 2010.

**ASC:** Sandia effectively managed the ASC program with the limited available resources. Sandia successfully demonstrated the ASC codes this fiscal year on the B61 program. Sandia was extremely responsive and proactive in

fixing any problems. Sandia released version 4.16 of its SIERRA engineering mechanics simulation code. The new version incorporates a consolidated thermal-fluid-aero simulation capability and new capabilities in failure modeling, contact, and implicit-explicit algorithm interoperability. SIERRA 4.16 is also significantly more robust than its predecessors and is now deployed throughout the NNSA as well as at Atomic Weapons Establishment (AWE) and in major DoD installations. Sandia used the RAMSES code suite for the first-ever blind comparison to the AWE data of the predicted response of a weapon-related silicon circuit in a short-pulsed neutron environment. Important features of the response, including non-linear threshold effects, were predicted with uncertainty quantification. This new validated RAMSES capability represents an important milestone in the QASPR program.

**ICF:** The NIC hohlraum energetic campaign was successful with the completion (ahead of schedule) of Milestone 3414. Symmetric implosions were obtained in scale-0.9 and scale-1.07 cryogenic gas-filled hohlraums with shaped pulses of 16 ns and 19 ns for 3-omega energies of up to one megajoule. The first convergent ablation experiment worked well (backlit implosion). The NIC results were presented at the American Physical Society-Division of Plasma Physics (APS-DPP) meeting and at the NIC review.

**SC:** Sandia used sound engineering analysis and design principles to make a number of safety and design improvements to the Z-Machine for the upcoming Pu-ICE experiments. These changes are expected to improve the radiological containment capability of Z-Machine, and improve reliability at higher currents projected for future tests.

**Opportunity for Improvement**

**ICF:** The long-term connection of the fusion work to stockpile stewardship could be strengthened.

Milestone 3428: A Marx prefire occurred in June 2010 at Z-Machine. Prefires can cause hardware and target load damage and downtime to the Z-Machine that could potentially impact future efforts. In this case, the prefire caused a reduction of five shots in the schedule. In addition, this milestone was re-base-lined downward from 160 Z-Machine experiments during the year to enable Sandia to further explore the Z-Machine Pu single points of failure (including the Marx prefire).

**Performance Measure 1.1**

Annually assess and sustain the capabilities and facilities important to the NW program to assure readiness to meet the current and future need of the mission.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
1.1.1 Meet Level II Milestones associated with RTBF.	Outstanding	Agree	Sandia maintained safe, secure operational status in support of DP in spite of severe funding cuts to the RTBF program, while meeting or exceeding all milestones.

**Performance Measure 1.2**

Provide predictive simulation and modeling tools, supported by the required computational platforms and other resources, needed for stockpile stewardship, development, and certification.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
1.2.1 Meet Level II Milestones associated with the ASC Campaign.	Outstanding	Agree	Overall, Sandia has performed in an exemplary manner and successfully completed and/or exceeded the cost, schedule or technical

			<p>requirements of all ASC Level II Milestones. For example:</p> <ul style="list-style-type: none"> <li>Released version 4.16 of its SIERRA engineering mechanics simulation code. The new version incorporates new capabilities, is significantly more robust than its predecessors and is now deployed throughout the NNSA, the AWE and in major DoD installations.</li> <li>Deployed new algorithms for simulations involving contact (DASH). The new algorithms increase the accuracy and robustness of NW engineering mechanics simulations as well as improving the speed and scalability of the simulation codes needed for the next generation computing platforms.</li> <li>Used the RAMSES code suite for the first-ever blind comparison to experimental data of the predicted response of a weapon-related silicon circuit in a short-pulsed neutron environment. Important features of the response, including non-linear threshold effects, were predicted with uncertainty quantification. This new validated RAMSES capability represents an important milestone in the QASPR program.</li> <li>Developed the Structural Simulation Toolkit (SST) to explore innovations in highly concurrent systems where the instruction set architecture (ISA), micro-architecture, and memory interact with the programming model and communications system. The package provides two novel capabilities. The first is a fully modular design that enables extensive exploration of an individual system parameter without the need for intrusive changes to the simulator. The second is a parallel simulation environment based on Message Passing Interface (MPI). This provides a high level of performance and the ability to look at large systems. Sandia successfully used the framework to model concepts ranging from processing in memory to conventional processors connected by conventional network interfaces and running MPI. In March 2010, under support from ASC and the Institute for Advanced Architectures and Algorithms, Sandia released SST v2.0 as a formal open source software capability.</li> </ul>
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**Performance Measure 1.3**

Apply pulsed power science to the ICF and Science Campaigns. Support the NIC as negotiated in order to reduce technical risk.

**NNSA Rating: Very Good**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
<p><b>1.3.1</b> Meet Level II Milestones associated with the ICF Campaign.</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>Sandia completed the eight of the nine Level II Milestones.</p> <p><b>Milestone 3428:</b> A Marx prefire occurred in June 2010 at Z-Machine. Prefires can cause hardware and target load damage and downtime to the Z-Machine that could potentially impact future efforts. In this case, the prefire caused a reduction of five shots in the schedule. In addition, this milestone was re-baselined downward from 160 Z-Machine experiments during the year to enable Sandia to further explore the Z-Machine Pu single points of failure (including the Marx prefire).</p> <p><b>Milestone 3430:</b> This was dependent on Level II Milestone 3134, which was not completed. Therefore, Level II Milestone 3430 was not completed.</p>
<p><b>1.3.2</b> Meet Level II Milestones associated with the Science Campaign.</p>	<p>Very Good</p>	<p>Agree</p>	<p>Sandia completed 14 of the scheduled 15 Level II Milestones. The failure to complete a Pu shot, as required on Z-Machine, impacted the science and ICF programs as well as LLNL and LANL.</p> <p><b>Milestone 3134:</b> The Pu Z shot did not take place as originally scheduled in March 2009, nor as rescheduled in June 2010 or September 2010 due to design and safety issues. Based on Sandia's identification of numerous single points of failures, Sandia made a decision (with NNSA concurrence) not to accept the risk to workers and Z-Machine with the existing design configuration.</p> <p>Sandia did an excellent job in evaluating safety issues, defining and implementing design improvements and conducting test shots in preparation for the Pu shot.</p>

**Performance Measure 1.4**

Advance Sandia's vision of providing all environment testing capabilities for the NSE.

**NNSA Rating: Not Rated**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>1.4.1</b> Meet Level II Milestones for TCR, Phase 2.	Unscored (no milestones associated with TCR Phase 2 or IBL)	Not Rated	See PO-1.1 (RTBF) for further discussion.
<b>1.4.2</b> Meet Level II Milestones for the IBL.	Unscored (no milestones associated with TCR Phase 2 or IBL)	Not Rated	See PO-7.5 and PO-1.1 (RTBF) for further discussion.

**Other Considerations**

**ASC:** Sandia was proactive in providing technical support on the Exascale initiative during the FY 2012 budget request. This is the only initiative that the DOE Secretary will support as an "over target" to the Office of Management and Budget.

**Alternate Performance Evaluation Plan**

The Addendum to Sandia's FY10 Performance Evaluation Assessment Report, submitted separately, is addressed in the PO-2 "Other Considerations".

## PO-2: Defense Programs Directed Stockpile Work – Essential

Directed Stockpile Work and Readiness Activities - Conduct design and development, maintain the existing stockpile while supporting stockpile transformation, and develop modern production capabilities and capacity for weapons refurbishment or development and future stockpile requirements.

Adjectival Rating: **VERY GOOD**

### Summary of Performance

Sandia's overall performance in the areas of Defense Programs (DP) Direct Stockpile Work (DSW) is rated as "Very Good" for FY 2010. Sandia met 75 of the 76 milestones in FY 2010. (60 milestones for DSW, two milestones for Readiness Campaign, and 14 milestones for Engineering Campaigns). The scope of these milestones was to ensure that the nuclear weapons (NW) stockpile is safe, secure, reliable, and meets military requirements throughout the weapon life cycle. Milestone 3366: *B61 Evaluation & Surveillance* was not met due to the Aerial Cable Facility (ACF) not being operational to complete B61-11 surveillance testing.

**DSW:** Sandia had several significant achievements, the most notable achievements being:

- Delivered 848 neutron generators (NGs), more than double any past year, for the W76 and W78.
- Improved ion source design definition to more accurately match actual drive conditions saving more than 100 NG subassemblies and \$2.5 million.
- Identified root cause and eliminated voltage runaway issue at neutron tube test resulting in savings of \$3.5 million.
- Resolved delay time issue at neutron tube test by increasing accuracy of test conditions resulting in savings of approximately \$6 million.
- Delivered 21,167 explosive, microelectronic, powers sources, and other components all on schedule.
- Made progress and prepared for the nuclear scope B61 Phase 6.2 Life Extension Program (LEP) Study despite limited funding due to congressional limitations, which did not arrive until the fourth quarter.
- Assembled a team to support a new task to initiate the W78 Phase 6.1 LEP Study, which Sandia completed before the end of the FY 2010.
- Supported Pantex by providing staff and data, on an aggressive schedule, to achieve the W84 and B53 Seamless Safety (SS)-21 start-ups, the last of the SS-21 start-ups. These are part of the "Getting the Job Done" list that is watched by Congressional committees.
- Revised the Electronic Neutron Generator (ELNG) Timeline and Project Plan, with Technical Readiness Level 5 (TRL 5) assessment scheduled for October 2010, to support B83, B61 legacy, and B61 LEP objectives.
- Completed the Integrated Phase Gate (IPG) C for the W87 Small Ferroelectric Neutron Generator (SFENG) with no conditions.

Although Sandia demonstrated overall success in DP DSW, there are some areas that need improvement, such as:

- The W76-1 LEP continued to have issues throughout the year as the Code Blue continued.
- There were continuing problems with the Launch Accelerometer (LA), capacitors, and tooling supplied to Pantex.
- Weapons were returned from the Department of Defense (DoD) to be reworked which used resources at both Sandia National Laboratory (SNL) and other sites (Kansas City Plant (KCP) and Pantex), which could have been utilized for other mission activities.
- There continues to be difficulty in determining planning production options of NGs for future years.
- There were continuing issues at the Weapons Evaluation Test Facility (WETL), such as the W87 surveillance laboratory tests being completed six months after the Level II Milestone date.
- The W80 surveillance tests and the W88 surveillance tests scheduled for FY 2010 were delayed into FY 2011

and have the potential to affect the next cycle of annual assessment reports.

- The delay in starting up the ACF caused NNSA to go to the DoD and request that they move up planned surveillance tests at Tonopah Test Range (TTR) for FY 2011. This delay was caused by a lack of continuance from the Sled Track startup and resulted in a slip of 18 months from the original schedule.
- Failed to provide sufficient details for the FY 2011 budget input for the July 2010 Budget Summit. Namely, there was a significant increase in the funding request from FY 2009 to FY 2010 for the W87, which was not explained until after the Budget Summit.
- Changed the model for supporting the B61 LEP mid-year. During the first half of the year, project support was provided by Sandia's Systems Integration Technical Support (SITS) Team and funded outside the B61 LEP. Sandia unilaterally decided to move the SITS Team function to a Systems Group, which resulted in both a funding impact and support impact to the B61 LEP. Sandia's reduced funding support for the B61 LEP staff resulted so that NA-12 did not receive adequate technical resources and leadership to complete B61 LEP program deliverables for project plan updates or development and coordination of Integrated Phase Gate (IPG) plans. As a result, NA-12 was required to take these responsibilities back and add their own resources to accomplish the associated tasks.

**Readiness Campaign:** Met or exceeded all requirements in both Level II Milestones.

**Engineering Campaigns:** Completed 14 Level II Milestones in support of the Engineering Campaigns. Completed three of the Level II Milestones for Enhanced Surety ahead of the required completion dates. Sandia collected Foam validation data, in a geometry relevant to the fireset for the B61, including the transfer of the Foam Encapsulation Model to KCP for the Weapons Systems Engineering Assessment Technology (WSEAT). Further, Sandia developed laser tracking system hardware to track medium-speed targets through strong turbulence.

### Significant Accomplishments

#### DSW:

- Worked with the KCP and Pantex to achieve W76-1 Initial Operating Capability (IOC) for deliveries to the U.S. Navy in FY 2010.
- Delivered 848 NGs (more than double any previous year) for the W76 and W78 and delivered of 21,167 explosive, microelectronic, powers sources, and other components on schedule.
- Completed 26 surveillance flight tests including eight B61 and B83 tests at TTR.
- Made progress and prepared for the nuclear scope B61 Phase 6.2 Life Extension Program (LEP) Study despite limited funding due to congressional limitations, which did not arrive until the fourth quarter.
- Assembled a team to support a new task to initiate the W78 Phase 6.1 LEP Study, which they completed before the end of the FY 2010.
- Supported Pantex by providing staff and data, on an aggressive schedule, to achieve the W84 and B53 Seamless Safety (SS)-21 start-ups, the last of the SS-21 start-ups. These are part of the "Getting the Job Done" list that is watched by Congressional committees.
- Demonstrated technologies to field an Integrated Surety System (ISS) through development of conceptual design for the W78. Designing, procuring and delivering hardware for an end-to-end test and completed conceptual electronics and container design for the W76.
- Product Realization Integrated Digital Enterprise (PRIDE) successfully delivered Annual Planning Summary migration from KCP to SNL that enabled all sites to enter Weapon Information System (WIS), Mission Need Statement (MNS), Integrated Programmatic Scheduling System (IPSS), and Program Control Document (PCD) across the enterprise secure network.
- Completed War Reserve (WR) production and Retrofit Evaluation Stockpile Test (REST) supporting W76-1 LEP.
- Supported Power-Free Gas Sampling (PGS) implementation at Pantex for certification on the W78.
- Completed procurement of four development transmitters for the W78 Joint Test Assembly (JTA).
- Successfully passed through Gates A, B, and C of the W87 Small Ferroelectric Neutron Generator (SFENG)

phase gate process.

- Initiated a B61 JTA Modernization Replacement effort.
- Good management of Significant Finding Investigation (SFI) resources resulting in seven SFIs being closed.
- Provided technical expertise to B61 Project Officers Group (POG), subgroups and U.S. Air Force activities.
- Participated in IPG implementation on the B83 Electron Neutron Generator (ELNG) and Gas Transfer System (GTS) project and completed Gate A in September 2010.
- Developed GTS options and made timely recommendations for down selection of options.
- Supplied system, program and engineering resources to kick off W80 NG Alteration (ALT) Project Realization Team (PRT).
- Revised ELNG Timeline and Project Plan, with Technical Readiness Level 5 (TRL5) assessment scheduled for October 2010, to support B83, B61 legacy, and B61 LEP objectives.
- Completed design of prototype GTS two months early.
- Completed Solid computer-aided design (CAD) models for Magnetically Coupled Stronglink (MCSL) & Electrical Contact Stronglink (ECSL) two months early, enabling fabrication of a first prototype Stronglink development unit.
- Completed evaluation of the MC2854 LA high voltage hold off in a combined thermal/mechanical environment.
- Completed radiation testing at Annular Core Research Reactor (ACRR) on three sets of programmer and force balance integrating accelerometer (FBIA) hardware to understand component performance margin.

#### **Readiness Campaign:**

- Completed Multi-Site test equipment.
- Completed qualification activities completed for the Hot Liquid Poler Acceptance Tester.
- Accomplished integrated Radio Frequency (RF) Packaging.
- Participated in a multi-site Non-Destructive Evaluation Capability Assessment Team.

#### **Engineering Campaigns:**

- Exhibited a high level of detail and thoroughness in the documentation for the Laser Dose-Rate Assessment technique.
- Actively participated with other sites.
- Evaluated a component associated with the B53.
- Evaluated failure of eyelet solder joints in the B61 Radar.
- Confirmed the (tin-lead) Sn-Pb solder wicking approach deployed in the manufacture of certain W76-1 devices effective prevents Sn whiskers.
- Provided subject matter experts (SMEs) and technical support for implementation and qualification of PGS hardware at Pantex for WR use on the B61 and W78.

#### **Opportunity for Improvement**

##### **DSW**

- Failed to provide sufficient details for the FY 2011 budget input for the July 2010 Budget Summit. Namely, there was a significant increase in the funding request from FY 2009 to FY 2010 for the W87, which was not explained until after the Budget Summit.
- Has not been able to fully support activities at WETL (e.g. the W80 test scheduled for September 2010 was moved to October/November 2010 and is proposed to move to January/February 2011)
- Staffing shortfalls within the surveillance program will be further exacerbated by the loss of critical personnel in FY 2010 due to retirements and movements of staff to other organizations.
- Changed the model for supporting the B61 LEP mid-year. During the first half of the year, project support was provided by SITS and funded outside the B61 LEP. Sandia unilaterally decided to move the SITS function to a Systems Group, which resulted in both a funding impact and support impact to the B61 LEP. Sandia's reduced funding support for the B61 LEP staff resulted so that NA-12 did not receive adequate technical resources and



leadership to complete B61 LEP deliverables for project plan updates or development and coordination of IPG plans. As a result, NA-12 was required to take these responsibilities back and to add their own resources to accomplish the associated tasks.

- NNSA has concerns with the cost outlook for the NG portfolio, poor strategic communication, and responsiveness of the NG management. In recent years, the NG team at Sandia was innovative, responsive, and effective; however, in FY 2010 there was a concerning declining trend in all three areas. Cost growth, uncoordinated communication with external stakeholders, and inconsistent and slow responses to important questions gave the perception that Sandia and the NNSA could not meet the mission. Consequently, what should be a manageable issue became a national issue engaging undersecretaries and members of congress. So much so that the commander of USSTRATCOM made the production capacity of Sandia an issue for the Nuclear Weapons Council and an item of concern in his Annual Assessment letter to the President. NNSA recognizes that Sandia presented the NG funding issues at the February DSW Budget Summit and the subsequent Defense Programs budgeting conference in Nevada; however, these conferences are not a substitute for careful communication between Sandia and NNSA leadership prior to raising potentially sensitive issues to other national leaders within the DoD and congress. Due to the embargo of funding information during formulation, Sandia is not privy to all the decision being made affecting the entire Nuclear Security Enterprise. Poor coordination can damage relationships or upset careful negotiations with implications well beyond the confines of Sandia. Expected action: To ensure improved coordination and communication with NNSA Senior Executives, Sandia must submit final presentation material on all DSW subjects to NA-12 one week prior to presentations at national level venues such as the SAGSAT, the NWC, and other national leaders within the DoD and congress. This will provide sufficient time for NNSA to ensure Sandia is aware of all ongoing strategic engagements prior to presenting.

**Engineering Campaign:** Sandia has not shown a clear path forward to delivering a QASPR methodology for silicon on the timeline required for planned Arming, Fuzing and Firing (AF&F) refurbishments. The situation is exacerbated for III-V compound semiconductor devices that may also require high fidelity 2-D or 3-D models, because Sandia Pulse Reactor (SPR) III experimental data is limited, and achieving a neutron equivalent dose using the IBL has significant technical risk. A reconciliation of the current development and production schedule for silicon and compound semiconductor (III-V) device technology, with a realistic assessment of the risks associated with development of QASPR for III-V devices, should be conducted.

**Performance Measure 2.1**

Maintain the nuclear weapons systems in the stockpile by establishing the comprehensive technical basis for the existing stockpile that is necessary to assure the ability of the stockpile to meet requirements.

**NNSA Rating: Very Good**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
<p><b>2.1.1</b> Meet Level II Milestones associated with DSW for Production &amp; Planning Directive (P&amp;PD) delivery requirements, Annual Assessments and Stockpile Maintenance. Meet Level II Milestones associated with RTBF.</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>Sandia met all milestones, but the W76-1 LEP continued to have issues throughout the year as the Code Blue continued. While Sandia is currently on target to deliver the AF&amp;F with the Intent Stronglink with the new design, there have continued to be problems with the LA, capacitors, and tooling supplied to Pantex. For example, Sandia produced W76-1 assembly tools, shipped the tools to Pantex where the tools were found to be defective after several units were already shipped to the DoD customer. This required these units to be returned to Pantex, torn down and reworked. Because of this, Pantex did not have</p>

			<p>facilities available for units that could have been built if these units had not been returned. This rework used resources, at both SNL and other sites (KCP and Pantex), that could have been used for other mission activities.</p> <p>Issues have continued to occur related to stable production for MC4713 LA. This has resulted in ongoing challenges in testing and requirements and subsequent work stoppages or halts. Due to these stoppages/halts, there are probable impacts to the scheduled ramp-up of W76-1 units in FY 2011.</p> <p>Sandia was not able to maintain a 90-day lead on AF&amp;Fs to Pantex until August 2010.</p> <p>Finally, in August 2010, Sandia experienced issues with the MC4682 capacitor. Although the quality issues are discussed in Performance Incentive-2, the impacts from this will result in additional costs for new parts that will need to be produced and possible schedule impacts to the scheduled ramp-up in FY 2011. These possible schedule impacts may not be realized due to other schedule impacts from the MC4713 LA discussed previously.</p>
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**Performance Measure 2.2**

Integrate and transform stockpile evaluation to create a responsive, cost effective, science-based approach and annual evaluation plan that continually strengthens our technical understanding of weapon products for which we are responsible.

**NNSA Rating: Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p><b>2.2.1</b> Meet Level II Milestones associated with the Stockpile Evaluation schedules and implement the Surveillance Transformation Plan initiatives.</p>	<p>Outstanding</p>	<p>Disagree Good</p>	<p>Sandia met all milestones except for Milestone 3366 for the B61 and has had multiple issues related to surveillance in FY 2010 including:</p> <p><b>B61-11:</b> the ACF test was originally scheduled for March 2010 to support LANL for the current year's Annual Assessment Report (AAR) for Milestone 3366. The delay in starting up the ACF was a decision by Sandia Senior Management to start the Sled Track Facility before the ACF. The Sled Track Facility was started, several months behind schedule, which caused the ACF test to be delayed until September 2010 to support next year's AAR. Additionally, after the Sled Track startup, there were personnel changes, which</p>

		<p>delayed the ACF startup again. It took several months before an updated schedule was provided and when it was provided, the schedule had slipped until July-September 2011 (18 months from the original schedule) and could no longer support next year's AAR. This required NNSA to request that DoD move a planned JTA surveillance test for the B61-11 at TTR up to February 2011. A new milestone will be created for tracking the start-up of the ACF in FY 2011. This shows Sandia did not fully appreciate the priority of the start-up of the facility.</p> <p><b>W88:</b> WETL system testing was not performed in FY 2010 due to resource conflicts on the system tester and was delayed to FY 2011.</p> <p><b>W80:</b> The Cycle 28 Test Beds were delayed to FY 2011 due to resource conflicts on other systems. A new milestone will be created for tracking the testing of the Cycle 28 Test Beds in FY 2011.</p> <p><b>W87:</b> Sandia failed to provide priority to surveillance tests scheduled for FY 2009, which were delayed until February 2010 but not completed until August 2010, almost two years behind the initial schedule. Although this milestone was scored blue, it was extremely delayed and almost caused a lapse in the two-year certification for the W87. DoD had requested that the W87 flight tests not be completed for other priorities but due to the delay, NNSA could not accommodate DoD request. NNSA should never have been in the position of being close to the two-year lapse in data.</p> <p><b>W87:</b> Sandia did not meet Program Engineer expectations in participating in W87 Integrated Weapons Evaluation Team (IWET) meetings.</p> <p>As surveillance has taken on increased emphasis (it was one of six items that DoD provided \$500 million funds to support), NNSA requested Sandia and other laboratories provide a comprehensive surveillance report. Sandia took several additional months in to complete this task and submitted a series of emails rather than a report.</p>
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**Performance Measure 2.3**

Ensure the viability of future stockpile options by supporting stockpile refurbishment activities; by exercising component design and system engineering expertise; and, through demonstration vehicles that implement and test critical elements of future system architectures and matured technologies.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>2.3.1</b> Meet Level II Milestones for Life Extension Options and authorized refurbishments, advanced technologies and systems development, stockpile services and development of common adaptable system architectures for use in future weapon systems.	Outstanding	Agree	

**Performance Measure 2.4**

Execute the neutron generator enterprise to meet NNSA requirements and accomplish continuous process improvements.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>2.4.1</b> Meet Level II Milestones for capability maturation of technology in support of design, development and qualification of new neutron generators.	Outstanding	Disagree Very Good	Sandia met both milestones but there have been delays in the W80 NG development of Integrated Collaborative Oversight. In addition, the NG production planning options are not acceptable given the various funding streams provided. This continues to be an open issue at the end of FY 2010.
<b>2.4.2</b> Meet Level II Milestones for neutron generator production per the Directed Schedule.	Outstanding	Agree	

**Performance Measure 2.5**

Ensure modern production capabilities and capacities – including concurrent design and manufacturing - are available on time scales paced by requirements to carry out the weapons refurbishment or development projects and stockpile evaluation schedules and to support projected stockpile requirements.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>2.5.1</b> Meet Level II Milestones for production per the Directed Schedule.	Outstanding	Agree	

2.5.2 Meet Level II Milestones associated with the Readiness Campaign.	Outstanding	Agree	Sandia has further developed collaborative classified and unclassified environments to manage information for all components and provide tools for selecting, modeling, procuring and qualifying Commercial Off the Shelf (COTS) parts of NW systems and integrated Design Agency/Production Agency procurement processes for COTS parts to avoid counterfeit parts. This work was performed outside of a milestone, was to improve processes for extracting and verifying reliability and performance models for COTS parts to reduce design iterations.
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**Performance Measure 2.6**

Mature surety technologies that provide options for insertion into the stockpile, including: 1) advanced safety technologies, and 2) component technologies to support security architecture options.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
2.6.1 Meet Level II Milestones associated with the Engineering Campaign.	Outstanding	Agree	Sandia completed three of the six Level II Milestones ahead of schedule.

**Performance Measure 2.7**

Develop the tools and technologies needed to design and qualify components and subsystems to meet requirements for thermal, mechanical and radiation environments; and to assess knowledge gaps in margins and uncertainties for material and component lifetime predictions, in support of surveillance transformation.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
2.7.1 Meet Level II Milestones associated with the Enhanced Surveillance subprogram of the Engineering Campaign.	Outstanding	Agree	Sandia met or exceeded all milestones in this area and also completed the following: <ul style="list-style-type: none"> <li>• Evaluated a component associated with the B53 and a failure of eyelet solder joints in the B61 Radar;</li> <li>• Confirmed the Sn-Pb solder wicking approach deployed in the manufacture of certain W76-1 devices effective prevents Sn whiskers; and</li> <li>• Provided SMEs and technical support for implementation and qualification of PGS hardware at Pantex for WR use on the B61 and W78.</li> </ul>
2.7.2 Meet Level II Milestones associated with Quantification of Margins and Uncertainties, as well as other tools to support	Outstanding	Agree	

stewardship, development, and certification of the stockpile, as identified in the Weapon System Engineering and Assessment sub-program of the Engineering Campaign.			
<b>2.7.3</b> Meet Level II Milestones associated with development of tools and technologies needed to foster survivability of weapons in radiation environments, as identified in the Nuclear Survivability sub-program of the Engineering Campaign.	Outstanding	Agree	

**Other Considerations**

**DSW:** Sandia's support of the Kansas City Responsive Infrastructure Manufacturing Sourcing (KCRIMS) requalification effort was not coordinated with the KCP to achieve realistic budget forecasts, until June 2010. NNSA provided funds to Sandia mid-year for KCRIMS to support existing programs.

Sandia took on the new task of completing a 90-day study for the W78 and W88 Common Fuze working with the U.S. Air Force and U.S. Navy. Sandia completed the task in April 2010, but the final report was not completed by the end of the fiscal year.

**Engineering Campaigns:** There was a budget-induced temporary shutdown of Engineering Campaign activities for Qualification Analysis for Sandia Pulse Reactor (QASPR) in early FY 2009. Following restoration of full funding, the team was reassembled and rebuilt, and activities were rescheduled and restarted, with significant progress above expectations in FY 2010.

**Alternate Performance Evaluation Plan (PEP)**

Below addresses the addendum to Sandia's FY 2010 Performance Evaluation Assessment Report regarding the critical performance measures in the Alternate PEP.

**Critical Performance Measure 1:** Measures that assess revenue management, cost, and resource allocation compared to Mission Area plans. Customer satisfaction as expressed by both Project Customers and Key Customers, such as using data from the Sandia External Customer Satisfaction (CSAT) Survey Process.

**1.1 Evidence of monthly financial reporting, evaluating the percent revenue and percent costed to projected data plan and expectations.**

**Evidence:** Sandia enabled lab-wide planning in July 2009 by completing FY 2010 financial projections, which were updated in December 2009, and July 2010 based on new information. This allowed Sandia to meet current year deliverables and positioned Sandia to meet deliverables in FY 2011. The Total Revenue received was 102% of the \$985 million projection. The Total Cost was 99% of \$1,016 million projection. The Sandia Site Office (SSO) was invited to these meetings in the fourth quarter of FY 2010 and will be able to more closely

monitor this in FY 2011.

**1.2 Evidence of monthly evaluation of full time equivalent (FTE) charging both current month and year-to-date against internal targets.**

**Evidence:** Sandia estimated 2,515 FTEs charging to nuclear weapons program activities and at the end of FY 2010, there were 2,517 FTEs charging the nuclear weapons programs. In May 2010, the SSO expressed concerns with staffing the NW program due to the increased scope of work coupled with an anticipated increase in retirements. In June Sandia presented plans for addressing the increased workloads and the anticipated increased retirements and aggressively hired over 700 staff with a large number of those in the Nuclear Weapons Strategic Management Unit (NWSMU).

**1.3 Annual assessment analysis of laboratory CSAT surveys**

**Evidence:** Sampled 81 project customers and seven key customers and receiving 21 project customers' responses and three key customers' responses. Overall satisfaction was 8.5 to 8.8 on a 10 point scale. SSO was briefed on this during the NWSMU Senior Management review for the first time at the end of FY 2010 and was also provided access to the customer surveys and reviewed a sample of the surveys.

**Critical Performance Measure 2:** Performance against Level II Milestones associated with ASC, SC, ICF, Engineering Campaigns (EC), RTBF, and Readiness Campaigns (RC).

**Evidence:** The performance of Level II Milestones with the ASC, SC, ICF, and RTBF programs is discussed in PO-1 of this PER. The performance of Level II Milestones with the EC and RCs programs is discussed in PO-2 of this PER.

**Critical Performance Measure 3:** Performance against Level II Milestones associated with DSW.

**Evidence:** The performance of Level II Milestones with the DSW program is discussed in PO-2 of this PER.

**Critical Performance Measure 4:** Measures that demonstrate management review and assessment of performance of functional requirements by line organizations, such as Sandia Policy Areas of Safeguards and Security, Environment Safety and Health, Finance, and Corporate Governance, engaged in NW-funded work as they impact mission execution.

**4.1 Executive Management assessment of enabling support indicators by division/functional area/policy area.**

**Evidence:** The NWSMU began to include feedback from the line organizations to execute the NW mission into the management review process beginning in the second quarter of FY 2010. Key activities were highlighted during the NWSMU management level 3 and 4 reviews and areas of concern were escalated to the Executive Management Review (EMR). SSO Senior Management was invited the third and fourth quarter EMRs. During the last half of FY 2010, SSO staff requested multiple times to attend the NWSMU management 3 and 4 reviews and was only invited to the fourth quarter NWSMU management level 4 review. SSO is beginning to experience better transparency at these lower level reviews and expect this to improve in FY 2011.

**Critical Performance Measure 5:** Measures that demonstrate process efficiency and effectiveness for continuous improvement.

**5.1 Evidence that processes have been identified, analyzed, and improved as appropriate to promote efficiency of operation.**

**Evidence:** Improvement efficiencies are highlighted in PO-1, PO-2, PI-1, PI-2, and PI-6. SSO was briefed on the measures that demonstrate process efficiency and effectiveness for continuous improvement during the Joint Performance review Team in September 2010. Additional communication will be needed throughout FY 2011 between Sandia and SSO to understand how this is being met. Activities that demonstrated this are as follows: the implementation of the SS-21 WR tooling into JTA operations at Pantex which reduced the number of procedures required and improved process safety; resolving issues with NG productions to save over 100 NG assemblies; collaboration with KCP and Savannah River Site to support improvement of GTS production processes; efforts by Sandia to implement PRIDE into enterprise-wide information technology solutions that reduced duplication and leveraged resources; and improvements in the procurement of JTA power sources.



**PO-3: Defense Nuclear Nonproliferation (NA-20) – Essential**

Develop and maintain science and engineering capabilities and facilities required to support detection, prevention, and reversal of the proliferation of weapons of mass destruction.

**Adjectival Rating: OUTSTANDING**

**of Performance**

Sandia's overall performance in the area of Defense Nuclear Nonproliferation (DNN) is rated as "Outstanding" in FY 2010 as products were generally delivered on time, quality of work was outstanding and Sandia staff was dependable.

**Significant Accomplishments**

- Exceeded goals set by Global Threat Reduction Initiative (GTRI) on securing nuclear and radiological buildings and installing In-Device-Delay (IDD) program kits.
- Met delivery dates for subsystems and payloads, even under significant schedule and development challenges.
- Maintained crucial design interactions with the U.S. Air Force and the satellite vendor for NA-22.
- Provided outstanding technical and policy advisory support for NA-24's programs. Specifically, Sandia provided experts for the New Strategic Arms Reduction Treaty (New START) negotiations, Cooperative Monitoring Center (CMC)-Amman work, Interdiction programs, and Safeguards programs.
- As a result of Sandia's efforts, the Second Line of Defense (SLD) Program met its metric requirements for new sites completed in FY 2010. Sandia's management of this project was outstanding, and the number of sites completed was constrained only by limited Russian resources.

**Opportunity for Improvement**

The program would benefit from monthly or quarterly Sandia interaction with NNSA Headquarter (HQ) staff on aspects of the U.S. Nuclear Detonation Detection System (USNDS) program funded and directed through the DoD.

**Performance Measure 3.1**

Strengthen global nuclear and radiological security through the application of capabilities to assess the vulnerabilities of, and secure, remove, and facilitate the disposition of high-risk nuclear and other radiological materials. (NA-21).

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>3.1.1</b> Provide technical capabilities to secure vulnerable, high-priority nuclear and radiological material in the United States and internationally.	Outstanding	Agree	Sandia's efforts to secure nuclear and radiological materials globally totaled approximately \$42 million.  Sandia provided very good support in the security of domestic and international nuclear research reactors and radiological sources. Domestically, Sandia completed 82 buildings, slightly exceeding the goal of 79 buildings. Internationally, Sandia completed 10 international buildings in FY 2010, slightly exceeding the goal of nine buildings.

			<p>Sandia provided exceptional support for GTRI's IDD program. Sandia also worked with the commercial firms involved in this effort, completing 174 IDD installations, far exceeding the goal of 85 installations.</p> <p>Sandia efforts to begin critical security upgrades in South Africa were vital to President Obama's four-year goal of securing vulnerable nuclear material. Likewise, Sandia's efforts to complete security upgrades at Kazakhstan's BN-350 culminates a ten-year effort to secure the largest cache of weapons-grade material in a non-weapons state.</p> <p>Sandia also led four security-based Response Assessment table-top exercises in Serbia, Poland, the Czech Republic, and Hungary, followed by a Performance Testing Workshop that included participants from these four countries and Romania. GTRI received very positive feedback from the participants in all of these exercises as a result of Sandia's outstanding work.</p> <p>GTRI also benefitted from the outstanding support provided by a Sandia employee, serving on an M&amp;O contract at HQ. The employee provided critical support to GTRI's Africa team for three-years.</p>
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**Performance Measure 3.2**

Develop improved tools, technologies, and procedures that will support the national security community's ability to detect and prevent nuclear proliferation. (NA-22)

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>3.2.1</b> Advance remote sensing capabilities and algorithms to enable detection and exploitation of nuclear proliferation signatures worldwide.	Outstanding	Agree	Construction of the new uncooled Focal Plane Array with multispectral capability was a technological step forward.
<b>3.2.2</b> Improve sample collection and analysis tools for detection and characterization of declared and undeclared uranium and plutonium production facilities.	Outstanding	Agree	<p>Sandia has been a primary contributor to the success of a multi-laboratory project to automate nuclear sample analysis. They have been particularly successful in negotiating the design of equipment interfaces provided by each laboratory to facilitate system operation.</p> <p>The Sandia project "Reactor Monitoring Using</p>

			Antineutrinos" has successfully collaborated with Lawrence Livermore National Laboratory (LLNL) and engaged with the international community on a unique safeguards approach to detect plutonium (Pu) production.
3.2.3 Advance detector materials, detector technologies, and/or signal enhancement methods to detect Special Nuclear Material (SNM) movement.	Outstanding	Agree	Sandia's performance of the neutron scatter camera has been outstanding.
3.2.4 Provide NA-22 with timely and accurate reports on merit-reviewed publications and presentations; financial reports on industrial, small and disadvantaged businesses; and academic involvement in all NA-22 funded portfolio projects.	Outstanding	Agree	

**Performance Measure 3.3**

Design, develop, and deliver nuclear event detection capability to satisfy national level requirements for treaty verification and nuclear proliferation monitoring. (NA-22, Nuclear Detonation Detection (NDD))

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
3.3.1 Fabricate, test and deliver Burst Detector Optical, Burst Detector Analyzer, and Burst Detector Processor sensor and support systems that meet performance specifications for Global Burst Detector (GBD) payloads.	Outstanding	Agree	Sandia has met delivery dates for all subsystems even though there have been significant schedule and development challenges driven by external factors beyond the control of Sandia.
3.3.2 Integrate, test and deliver the SNL and Los Alamos National Laboratory (LANL) sensor and support systems in accordance with Government Furnished Equipment delivery dates to the U.S. Air Force satellite contractor that	Outstanding	Agree	Sandia has met delivery dates for all Sandia National Laboratory (SNL)-LANL integrated payload systems even though there have been significant schedule and development challenges driven by external factors.

meets the performance specifications for the GBD payloads for the space-based NDD systems.			
<b>3.3.3</b> Perform design and development for the next generation of GBD payloads on GPS III satellites, with a stretch goal of weight reductions to allow more capability for future systems. Pursue development of the new Joint Architecture Standard computing capability and the development of the Digital Bhangmeter with a goal of implementing these on the GPS IIIB satellites.	Outstanding	Agree	Outstanding progress has been made even under tight budget conditions. Sandia has sustained crucial design interactions with the U.S. Air Force and the satellite vendor on a constrained budget.
<b>3.3.4</b> Provide on-orbit analysis and support for legacy launched and delivered, but has not yet launched, Space NDD systems.	Outstanding	Agree	Sandia made outstanding and unanticipated improvements to already fielded systems that enable support to important national security missions other than those originally scoped for system.
<b>3.3.5</b> Research and develop new geophysical data processing and analysis technologies. Investigate and characterize sensor technologies, and deliver Sandia integrated research products into the NNSA Knowledge Base to improve ground-based nuclear explosion monitoring capabilities.	Outstanding	Agree	Sandia work was outstanding for the Regional Seismic Travel Time code and other 3-D seismic advances.

**Performance Measure 3.4**

Counter global proliferation and non-state actor threats through the application of capabilities to support policy and provide technical support for dismantlement and transparency, global security engagement, and development and implementation of international regimes and agreements. (NA-24)

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
<p><b>3.4.1</b> Complete the Technology and Assessment Demonstration (TAD) project, which evaluates the application of U.S. - and Russian-developed technologies for use under existing or potential future nonproliferation initiatives, including confidence building, and then demonstrate a subset of those technologies for a specific scenario.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia did an outstanding job completing the Technology Assessment and Demonstration (TAD) Report as part of the lead up to the TAD demonstration initially planned for FY 2010. NNSA directed that the TAD demonstration be postponed until FY 2011. Activities in FY 2010 associated with the demonstration were limited. This work will resume during FY 2011.</p> <p>Sandia provided a senior technical advisor to the New START delegation who contributed very directly and significantly to the negotiation of the New START Treaty - not just relating to telemetry and radiation detection equipment (RDE) but also to negotiation of the overall inspection regime for the treaty. In Washington D.C., this employee played an essential role from the DOE/NNSA perspective in the U.S. Government response to the over 900 New START questions for the record, and in preparing senior DOE/NNSA officials, including the NNSA Administrator and Secretary of Energy, for testimony before the Senate.</p>
<p><b>3.4.2</b> Provide support for international outreach efforts including preparations of materials for, and implementation of, export control training modules, safeguards and nuclear infrastructure development, border security evaluation methodologies and training tools, projects that advance Weapons of Mass Destruction scientist engagement, and other outreach initiatives.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia's coordination of NA-242's work with CMC-Amman has facilitated implementation of DOE/NNSA reform measures to improve Jordanian and regional support of CMC-Amman to better support Presidential priorities in the Middle East and progressively reduce DOE/NNSA's annual financial outlays. Sandia's guidance in shaping the direction of NA-24's Nuclear Energy and Nonproliferation (RSN103) project has improved its effectiveness as a regional, multilateral science and technology engagement asset for NA-24.</p> <p>Although not listed as a Performance Target, Sandia is the lead lab for the NA-241 International Nuclear Security (INS) program and provides valuable technical expertise and support for a number of projects. This assistance includes the development of physical protection guidance</p>

			documents (such as INFCIRC/225), development and conduct of training workshops and production of materials for and participation in bilateral consultations. Sandia also provides valuable technical expertise for U.S. government physical protection assessments in other countries holding U.S. obligated nuclear materials. Finally, Sandia also provides assistance for other special projects.
3.4.3 Provide support for technical reviews for export control license requests and interdiction case reviews while supporting multilateral regime projects and providing technical proliferation risk analysis papers.	Outstanding	Agree	<p>Sandia provides consistently strong support to the Interdiction portfolio. This support includes recommendations for re-calibrating Sandia support to better reflect current needs and trends and thereby improving spend planning and management of the annual program budget at SNL.</p> <p>Technical analysis provided by Sandia to the Shield Interdiction Technical Analysis Group (ITAG) Interagency (IA) working group (biweekly basis) was essential to allow the IA to make informed policy decisions. Some governmental agencies were complimentary of DOE's support to the IA working group, due in large part to these thorough reviews related to chemical/biological dual-use technology and/or material interdiction issues.</p> <p>Technical reviews for assigned export-control licensing cases for dual-use items were very good and met expectations. All were completed within the required time period.</p> <p>Sandia provides outstanding support for the Nuclear Supplier Policy Program. This support includes work on technical studies, including China before and after Nuclear Suppliers Group (NSG) Membership, and participation in the Fundamental Review of NSG Trigger and Dual-Use Lists. The Program is particularly appreciative of Sandia's efforts to help lead the review of Weaponization for the Fundamental Review. Sandia also provides outstanding support to Proliferation Security Initiative (PSI) efforts.</p>
3.4.4 Provide support for Next Generation Safeguards Initiative programs developing Enrichment Plant Safeguards, Advanced Safeguards Approaches and Assessments, and Human	Outstanding	Agree	<p>Sandia's support for safeguards and infrastructure outreach activities was outstanding in FY 2010. Sandia put together several key workshops in the Middle East in FY 2010, which allowed NA-24 to achieve one of its primary goals to establish and deepen relationships in the region. Sandia was also involved in a very successful project to demonstrate a new data authentication technique</p>

Resources Development.			with Euratom and the International Atomic Energy Agency (IAEA). Sandia also transferred an important piece of surveillance equipment to Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) to meet an urgent safeguards need.  Sandia has been supporting the Safeguards Policy Team in three areas and has been responsive to HQ requests.
3.4.5 Maintain Proliferation Information Network System certification and accreditation and protect access and handling of Department of Commerce 12(C) data.	Outstanding	Agree	Policy Office Network Systems maintained and 12 (C) data is protected.
3.4.6 Provide timely support to the Policy Office for both rapid turnaround and longer term policy-informed technical studies and analyses of key national security/nonproliferation issues, including support for China, South Asia and Middle East strategies.	Outstanding	Agree	Sandia support of NA-24 policy work, through the Gulf Nuclear Energy Infrastructure Institute, has surpassed expectations and whose efforts have been recognized by the White House. Sandia support for other policy work in the Middle East, including development of a Middle East Weapons of Mass Destruction free zone concept, is also outstanding. Sandia also continues to engage experts in East Asia and South Asia in support of high-level NA-24 policy objectives with consistently outstanding results.

**Performance Measure 3.5**

Work cooperatively with other countries to design and install upgraded material protection control and accounting (MPC&A) systems, and radiation detection systems to deter, detect, and defeat attempts to steal nuclear weapons, weapons useable materials, and radiological materials. (NA-25)

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
3.5.1 Provide subject matter expertise to support NA-25 MPC&A upgrade, national infrastructure and sustainability project teams.	Outstanding	Agree	Sandia worked on comprehensive nuclear security upgrade projects in Russia and Former Soviet Union (FSU) countries and produced timely and effective documents; generally responded efficiently to HQ requests; managed projects and associated budgets well; met project goals within Sandia's control; and effectively managed international negotiations and relationships.  For Material Consolidation and Civilian Sites (MCCS), Sandia has also effectively provided required physical protection expertise for projects outside of Russia, including the development of a Center of Excellence in China.

<p><b>3.5.2</b> Provide project management and procurement support for assigned NA-25 projects.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia continues to exceed the standard of performance in many areas of support to NA-25 programs and projects, providing analysis, budget support, project support, technical consultation, communications and Information Technology (IT)-related technical expertise.</p>
<p><b>3.5.3</b> Provide communications and IT-related technical expertise to the SLD Program to include Continental United States (CONUS) testing of Design Integration Construction Communication and Engineering (DICCE) contractor software.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>In FY 2010, Sandia utilized its CONUS test bed to test communications solutions provided by the Design, Integration, Construction, Communications and Engineering (DICCE) contractors against the program-level Communications System Design Requirements Document (CSDRD). Sandia participated fully in supporting the configuration management process at NNSA HQ with particular focus on communications issues and provided outstanding support in this area. Further, Sandia has developed a training course for CONUS test bed personnel to ensure streamlined testing. Overall project management by Sandia is rated as "Very Good". Sandia has done an outstanding job managing funds and tracking projects, and has been responsive to NA-25.</p>
<p><b>3.5.4</b> Design, install and/or acceptance test 15 sites in Russia for the core program.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia supported the Core program by conducting site surveys and acceptance tests in Russia, leading contracts for installation of radiation detection equipment (RDE) in Russia, and purchasing long-lead items for use in other countries. Sandia also assisted with site surveys in countries other than Russia. In support of the Core Russia project, Sandia conducted site surveys and participated in acceptance testing at sites in Russia. Sandia signed and administered multiple design and construction contracts for sites in Russia, as well as supported quarterly meetings, technical reviews, and other exchanges. Sandia showed flexibility in technical approach as well as contracting. As a result of Sandia's efforts, the SLD Program met its metric requirements for new sites completed in FY 2010. Sandia's management of this project was outstanding, and the number of sites completed was restrained only by limited Russian resources. Regarding purchase of long-lead equipment for other countries, Sandia helped to support timely completion of sites in Kazakhstan and Ukraine. Sandia successfully transitioned monitor procurement activities to the DICCE contractors, and has shown flexibility and originality in contracting. Sandia has provided site survey expertise in countries other than Russia on an as-</p>



			needed basis. These surveys have contributed to improved designs at complicated sites, airports and seaports.
<b>3.5.5</b> Conduct port surveys and prepare the Design Requirements Document and the Communications System Design Requirements Document (CSDRD).	Outstanding	Disagree Very Good	Sandia completed the Design Requirements Document (DRD) and CSDRD for 14 ports and completed 11 port familiarization reports as requested. The reports were generally timely and required minimal changes.
<b>3.5.6</b> Develop and maintain the Maritime Prioritization Model used by DOE/NNSA as a decision tool to identify ports that pose the greatest risk to the United States in terms of the potential for illicit trafficking in nuclear and other radioactive materials. Part of this prioritization assessment will rely on an analysis of nuclear smuggling and changing trends in nuclear smuggling since the mid-1990s.	Outstanding	Disagree Very Good	Sandia continues to provide very good support to the Megaports Maritime Prioritization Model (MPM). Sandia supports the technical research, updates data input and analysis for the MPM implementation. Work is completed typically on schedule. Sandia developed the MPM in 2004 and administers the database.

#### Other Considerations

The DNN work performed during the last quarter of FY 2010 was evaluated under the Alternate Performance Evaluation Plan's (PEP) PO-2 critical performance measures. However, all of the targets identified in the Alternate PEP PO-2 and the Original PEP PO-3 were tracked and rated under this PO (PO-3). Therefore, the rating identified in this PO represents an accurate evaluation of DNN work over FY 2010.

#### Alternate PEP

Below addresses the addendum to Sandia's FY 2010 Performance Evaluation Assessment Report regarding the critical performance measures in the Alternate PEP.

**Critical Performance Measure 1:** Measures that assess revenue management, cost, and resource allocation compared to Mission Area plans. Customer Satisfaction, as expressed by both Project Customers and Key Customers, such as using data from the Sandia external CSAT Survey results.

**Evidence:** Sandia International, Homeland and Nuclear Security (IHNS) Strategic Management Unit (SMU) provided FY 2010 Full-Time-Equivalent projections to Sandia leadership in July 2009, and used that plan as a baseline against which Sandia measured progress to plan for FY 2010, including NA-20 budget information. Updates to those projections were provided in December 2009 and again in July 2010 to align resources to current information. Sandia IHNS SMU participated in annual Corporate External Customer Satisfaction (CSAT) survey during FY 2010 and positive results were provided to the Sandia Site Office (SSO). Evidence is also maintained and available within Sandia's Integrated Laboratory Management System (ILMS).

**Critical Performance Measure 2:** Measures that demonstrate management review and monitoring of performance against customer milestones and deliverables associated with the National Security Technology Systems (NSTS) programs (former Sandia Strategic Management Group).

**Evidence:** Evidence of monthly assessment and evaluation of select program/project milestones and deliverables with issues is maintained by IHNS SMU. SSO attends quarterly management reviews and has access to project milestone status and information, using ILMS.

**Critical Performance Measure 3:** Measures that demonstrate management review and assessment of performance of functional requirements by line organizations, such as Sandia Policy Areas of Safeguards and Security, Environment Safety and Health, Finance, and Corporate Governance, engaged in NSTS funded work as they impact mission execution.

**Evidence:** Evidence of Sandia Executive Management evaluation of Enabling Support Indicators by Division/Functional Area/Policy Area is available through ILMS. A quarterly review of functional requirements by line organization is conducted and performance of supporting functional organizations is assessed. The Division review (line organization) is conducted as part of the Sandia Executive Management Review, in coordination with SSO. Evidence is also maintained and made available within ILMS.

**Critical Performance Measure 4:** Measures that demonstrate process efficiency and effectiveness for continuous improvement.

**Evidence:** Sandia processes have been identified, analyzed, and improved to promote efficiency of operations. This analysis is one of the factors that prompted Sandia's organizational restructuring which is focused on strengthening strategic customer relations, including NNSA DNN (NA-20) program organizations. The restructure is expected to improve the efficiencies and effectiveness by aligning the SNL structure with the Administration's non-proliferation mission.

## PO-4: Science & Technology Programs – Esstential

Enhance and foster a strong science and technology base in support of DOE/NNSA's missions and strategic objectives. Leverage Sandia's science, technology & engineering capabilities in support of the national security needs of Other Federal Agencies and Technology Partnerships in a manner, which benefits the development and maintenance of technical capabilities for strategic and national security objectives.

**Adjectival Rating: OUTSTANDING**

### Summary of Performance

Sandia's overall performance in Science and Technology (S&T) Programs is rated as "Outstanding" for FY 2010. A comprehensive evaluation was conducted using a performance based evaluation process with input from both external and internal DOE/NNSA sources, resulting in Sandia's performance rated overall as an "Outstanding".

Overall, Sandia's has significantly exceeded expectations in all of the performance measures and continues to maintain a strong Science, Technology and Engineering (ST&E) base that contributes to and strengthens the national security missions of DOE, NNSA, Other Federal Agencies (OFA), and Industrial Partnerships. Sandia's maintenance of unique technical capabilities and competencies, and ongoing dedication to national security, continues to bring credit to the DOE, NNSA and other national security federal agencies.

Sandia has successfully maintained critical skills during a very dynamic performance period, and has adopted innovative ways to maintain technical capabilities with no growth Defense Program (DP) budgets. Sandia continues to advance in innovative technologies that help: sustain, modernize and protect the nuclear arsenal; prevent the spread of weapons of mass destruction (WMD); protect national infrastructures; defend against terrorism threats; enhance capabilities to the armed forces and national defense; lead the way to ensure the stability of the nation's energy and water supplies; and contributes towards the creation of a firm platform for increased U.S. economic development.

Sandia continues to demonstrate leadership in ST&E by strategically concentrating on the science that underpins and enables technology for DOE missions. Sandia is able to maintain and further develop expertise, facilities and equipment to create world-class science that pushes the frontiers of knowledge, in anticipation of future emerging threats and other mission needs. Sandia is regarded amongst the science community as a national security asset.

Sandia continues to provide outstanding support of Energy and Water Development Act appropriated DOE sponsored Energy, Science and Environmental Management programs. Sandia has also managed an additional portfolio of American Recovery and Reinvestment Act (ARRA) sponsored work activities to help facilitate economic development for our nation's economic recovery.

The strategic investment made by Sandia for Laboratory Directed Research and Development (LDRD) is commendable. LDRD continues to help accelerate discovery and innovation that has lead to breakthroughs in S&T, which lead to broader strategic partnerships with OFA, industry and academia. These breakthroughs offer the opportunity for further integration across the National Security Enterprise (NSE).

#### 4.1 – DOE/NNSA Research Foundations

Sandia's performance in DOE/NNSA Research Foundations is rated as "Outstanding". Sandia had a very successful year supporting the goals of Biosciences, Computational and Information Sciences and Pulsed Power Sciences research foundations that directly support the nuclear weapons stockpile and other critical national security missions. Additionally, Sandia has embraced the NNSA's complex transformation initiative leading to a broader NSE infrastructure and strategically and proactively managed its technical capabilities to maintain essential expertise and

a strong technical capability base for various mission imperatives. Sandia has significantly contributed to all research foundations, further strengthening national security as follows:

- Biosciences – Outstanding bioscience discoveries and results to further develop biofuels in support of national energy strategy and biodefense and emerging infectious disease research.
- Computational and Information Sciences – Outstanding results to advance high performance computing and computational and information sciences in support of advanced simulation and computing (ASC), climate, cyber, and nuclear reactor design research.
- Pulsed Power Sciences – Outstanding results in support of weapon physics, inertial confinement fusion (ICF), dynamic materials, and fusion energy research.

In addition, the recent Sandia organizational and management transitions within former ST&E Strategic Management Unit (SMU) have positively challenged the Sandia National Laboratory's (SNL) institutional strategy, which prompted the opportunity for a comprehensive assessment and evaluation of all existing research foundations.

The Sandia Science Advisory Board successfully completed external reviews of the six research foundation areas over two reviews in FY 2010. Results of these external reviews confirm that Sandia's research foundation areas, and overall S&T programs, are consistently positive, while Sandia's ST&E programs are considered national assets and are regarded as "world-class" and "outstanding."

#### **4.2 – DOE/Office of Science and LDRD Programs**

##### *DOE Office of Science (SC)*

Sandia's contributions toward advancing science and support of SC sponsored programs are rated as "Outstanding", as Sandia is directly contributing towards DOE strategic planning goals to strengthen "scientific discovery and innovation" for the nation. Major contributions and significant accomplishments in the areas of Basic Energy Sciences (BES), Advanced Scientific Computing Research (ASCR), Biological and Environmental Research (BER), and Fusion Energy Sciences (FES) were performed during FY 2010. In addition, DOE/SC ARRA funded projects was a focus of this year's evaluation and Sandia has made significant mission contributions on ARRA sponsored projects in the areas of Nanoscale Science Research Centers (Center for Integrated NanoTechnologies), Energy Frontier Research Centers, Computational partnerships, Scientific Discovery through Advanced Computing, General Atomics DIII-D Tokamak Facility Upgrades (Fusion Energy), and Plasma Science Centers.

##### *LDRD*

Sandia has made significant program management improvements to administer its LDRD program, resulting in greater transparency and overall program effectiveness. The Sandia LDRD program has made notable efforts to improve operating efficiency, sustain strategically directed research relevant to national needs, maintain the SNL's scientific and technical vitality, document and publish results in technical reports, and ongoing assessment of mission impact and outcomes of all funded efforts.

Outstanding mission impacts and scientific breakthroughs, complemented by success in Sandia's inherent LDRD strategic goals, has nurtured Sandia's workforces' core S&T expertise which supports the of broader national security mission. Sandia's strategic investments in LDRD projects, inclusive of Grand Challenge projects, continue to provide the foundational science that leads to innovative technical solutions to help structure our nation's defense, energy, and economic security.

#### **4.3 – DOE/Energy and Environment Technology Programs**

The evaluation of this performance measure during FY 2010 was focused on projects sponsored under the ARRA.

##### *DOE Office of Energy Efficiency and Renewable Energy (EE)*

Sandia's has directly contributed towards DOE strategic planning goals to strengthen "energy security" for our nation. Major contributions and noteworthy accomplishments in the areas of Solar Energy Technologies, Wind &

Hydropower Technologies, FreedomCAR & Vehicle Technologies, Hydrogen, Fuel Cells & Infrastructure Technologies, Geothermal Technologies, and Federal Energy Management programs were performed in FY 2010. Major projects sponsored under ARRA include the Distributed Energy Technology Laboratory (DETL), photovoltaic simulators and National Solar Thermal Test Facility (NSTTF), recapitalization. Despite initial slow progress on ARRA projects, both DETL and NSTTF are currently on schedule. Sandia developed comprehensive project management systems, thereby initiating supply chain management and acquisition actions on all major tasks.

*DOE Office of Electricity Delivery and Energy Reliability (OE)*

Sandia provided outstanding support to OE in the area of Energy Storage technologies. Sandia successfully performed state of the art research and development (R&D) and collaborated with state energy agencies, utilities, industry and with DoD to develop and characterize micro grid systems, and advanced stationary energy storage technologies to determine the benefits of deploying stationary energy storage systems on the grid.

ARRA sponsored Solar Energy Grid Integration Systems (SEGIS) project is on schedule and developments are meeting the goals of program, thereby enhancing overall DOE energy technology commercialization goals and objectives to deploy solar energy technologies – in collaboration with utilities, photovoltaic manufacturers, communication experts, academia, and other national laboratories.

*DOE Office of Environmental Management (EM)*

Sandia continues to provide outstanding leadership as lead laboratory and scientific/technical advisor to DOE/EM on all radioactive waste regulatory and recertification compliance program elements associated with the Waste Isolation Pilot Plant (WIPP). Following the WIPP Compliance Recertification Application (CRA) submission in FY 2009, Sandia continues to provide experimental studies and technical performance assessment basis in response to Environmental Protection Agency (EPA) inquiries and CRA completeness comments. ARRA sponsored WIPP Performance Assessment (PA) computing platform upgrades are progressing well. Substantial progress has been made to migrate numerical models, used in WIPP PA, into new platform that will provide increased computational capability for ongoing Sandia WIPP performance assessments.

*DOE Office of Fossil Energy (FE)*

Sandia's support of FE sponsored programs is outstanding, specifically in areas of upstream and downstream technology for enhanced fossil energy production. Upstream activities included advanced reservoir diagnostics accomplished by geophysical imaging and sensor development, increased production accomplished by numerical and physical simulation of reservoir response, and the mechanics of the well-bore and near well-bore research. Downstream activities included underground oil and gas storage, and the beneficial treatment of produced water research. Sandia made significant contributions in support of national energy strategy, including Strategic Petroleum Reserve (SPR), Clean Coal, Upstream Oil and Gas, Carbon Sequestration, and Fuels (large-scale liquefied natural gas fire research) programs. In addition, Sandia provided outstanding leadership in support of DOE (S-1) response to Deepwater Horizon Incident in the Gulf of Mexico.

*DOE Office of Civilian Radioactive Waste Management (OCRWM)*

Sandia's support of OCRWM sponsored programs, in association with Yucca Mountain Project (YMP) close-out activities, has been outstanding. Prior to the DOE termination of all licensing related activities associated with YMP, Sandia provided outstanding deliverables in support of Nuclear Regulatory Commission (NRC) license application. These major contributions included timely responses to numerous technical questions from the NRC staff on the post-closure component of the license application, development of responses for numerous contentions filed by YMP interveners under the Nuclear Regulatory Commission's licensing process, and resolving and closing of several hundred condition reports related to the post-closure technical baseline supporting the YMP license application. Following DOE decision to terminate YMP (May 24, 2010) and initiation of close-out activities, Sandia has provided steadfast leadership to help preserve records and archive information pertaining to the post-closure technical baseline. This archived information will be necessary to maintain DOE's capability to participate in any future licensing proceedings if high-level radioactive waste repository strategy resumes in the future.

#### **4.4 – Institutional Programs, OFA/WFO and Technology Partnerships**

Sandia's WFO continues to provide outstanding capabilities, technical solutions, technology deployments, and strategic response to a broad spectrum of national security challenges and missions. Outstanding S&T contributions made in support of OFA missions, including Defense, Homeland Security, and Intelligence programs. Sandia has made significant contributions for defense strategy including Remote Sensing and Verification, Space Based Technologies, Surveillance and Reconnaissance, and Integrated Missile Systems. Significant contributions for Homeland Security Strategy including Infrastructure Protection, Defense Nuclear Detection, Boarder Security, Airworthiness Technologies, BioDefense, and several S&T developments. Sandia continues to ensure that appropriate program management systems, processes, procedures, and facilities are available to support a diversified portfolio of Interagency Agreements (IAA) valued at approximately \$925 million. Sandia continues to receive positive customer surveys.

Technology Partnerships program management is outstanding across all sub-program elements. NNSA/SSO Program Review during FY 2010 resulted in positive review of all program elements with outstanding partnership results that ultimately provide an enhanced supplier base for Sandia mission including nuclear security, energy security, Cyber Security, and science technology and innovation. Impressive strategic maturation of partnerships continues to grow across all Sandia SMU to enhance mission success. Positive customer survey feedback and evidence of enduring long-term industrial partnerships with key strategic partners continue to mature. In addition, Sandia received several awards of excellence and commendations throughout FY 2010 that reflects an outstanding and well managed Technology Partnerships Program. Sandia Technology Partnerships Program is regarded by DOE as a model national laboratory program.

#### **Significant Accomplishments**

The following are select examples of Sandia accomplishments:

- Successful computational and informational science applications to develop risk assessment and uncertainty quantification methods to better understand climate change to determine the avoidance value of mitigation and adaption options for U.S. State-Level Risk Assessment through FY 2050.
- Created computational algorithmic approaches to model the complex geology of the earth's interior using simulation technologies through large-scale seismic inversion.
- Significant advances in biofuels research to better understand the fundamentals of biofuel combustion chemistry in support of national transportation energy security.
- Completed the Phoenix Series of large-scale Liquefied Natural Gas (LNG) engineering and thermal science experiments to complete threat consequence and vulnerability assessments.
- Significant advances in hydrogen storage research to advance scientific understanding of metal borohydride materials, as lead laboratory of the Metal Hydride Center of Excellence.
- Major scientific contributions as partner in the Joint BioEnergy Institute to advance the technology of efficient biofuel production leading to the next-generation of biofuels.
- Materials science and technology breakthroughs to advance solid state lighting by exploring growth mechanisms that control indium gallium nitride (InGaN) step morphology to better understand how InGaN quantum well structures can be tailored to enhance localization and thereby advance light emitting diodes (LED) brightness.
- Development of nanoscience tools and capabilities to measure the structural changes and electro-mechanical behavior of lithium ion (Li-ion) battery materials during active charge-discharge cycling.
- Development of a new multi-wavelength, range-resolved Light Detection and Ranging (LIDAR) system to expand remote sensing capabilities.
- Developed low-cost, portable, highly-sensitive detection system for simultaneous, individual hazardous chemical detection in water, using nanoporous-carbon coatings in surface acoustic wave devices.
- Enhanced quantum computing capabilities by successfully demonstrating functioning Y junction ion trap in silicon ion trapping and shutting.
- Enhanced Microsystems capabilities by successfully completing chip integration of terahertz quantum-cascade laser and diode mixer into a monolithic solid-state transceiver.

- Performed first beam on tandem accelerator in new Ion Beam Laboratory (IBL).
- Outstanding experimental and theoretical results in dynamic materials properties, radiation physics, and magnetically driven implosions research.
- Completed the tenth year of remote sensing and verification using Sandia based (on orbit) Multispectral Thermal Imager satellite.
- The Global Burst Detector (GBD) on Space Vehicle (SV-1) was successfully powered on and transmitting data from enhanced/pixilated optical sensor.
- Successful launch of Materials International Space Station Experiment No. 7 aboard Space Shuttle Atlantis, which contained two Sandia based material science experiments.
- Delivered the first single channel Enhanced Test Source (ETS) unit developed by Sandia for the U.S. Nuclear Detection System (USNDS) program, Global Positioning System receiver validation.
- Delivered a unique pathfinder space-based electro-optical payload that incorporates cutting edge technologies that are unique to creating space based missions.
- The Radiant Falcon Ku-Band Synthetic Aperture Radar (SAR) was delivered to SAIC/Dynamic Aviation for integration into testing fuselage.
- Completed upgraded All Condition Exploitation System (ACES) Flight Test (radar) on U.S. Navy Aircraft.
- Completed six successful launches at Kauai Test Facility (KTF) within five week period, including one intercept mission (JFTM3) having international participation with the Japanese 24 Navy.

Notable S&T programmatic accomplishments, include:

- Numerous awards and commendations for excellence in S&T, including four *R&D 100 Awards*.
- Enhanced S&T capabilities with the completion of two major facility upgrades, including the IBL (August 2010) and Combustion Research Computation and Visualization Facility (September 2010).
- Completion of complimentary DOE Office of Science/Basic Energy Science sponsored Materials Science and Center for Integrated Nanotechnologies (CINT) triennial program reviews.
- Selected to lead two technical areas for creation of virtual nuclear reactor in support of DOE Nuclear Energy Modeling and Simulation Energy Innovation Hub.
- Selected for Defense Advanced Research Projects Agency (DARPA) sponsored Ubiquitous High Performance Computing (UHPC) program to help reinvent computing for terascale embedded systems, petascale racks and exascale computer systems.
- Awarded Intelligence Advanced Research Projects Activity (IARPA) sponsored project for Multi-Qubit Quantum Coherent Operations (MQCO) technology development.
- Major scientific breakthroughs that have generated various patents, licenses, science publications, and awards of excellence in technology transfer, which have resulted in numerous invitations for presentations at various scientific symposia, colloquiums and major conferences.
- Outstanding and significant outcomes and technology deployments in support of DOE sponsored science, energy security, nuclear security, and environmental programs, including successful management of ARRA sponsored projects, valued at \$59 million.
- Successfully managed 432 LDRD projects, \$155 million program, which provides the underlying science to develop technology and engineering solutions for a broad spectrum of national security applications.
- Outstanding S&T contributions made in support of OFA missions, including Defense, Homeland Security, and Intelligence programs.

### Opportunity for Improvement

Although Sandia demonstrated overall success in S&T capabilities, there are areas described below that Sandia should focus on during FY 2011 to further strengthen overall ST&E base, including:

- Assessment of research foundations' portfolio to assure SNL is in a position to respond to emerging national security threats, such as Cyber Security.
- Strengthen S&T capabilities integration across all SNL SMUs.

- Maturation of performance assurance based management of ST&E.
- Integration of laboratory operational requirements with mission planning and execution.
- Revamp early career development program to further strengthen scientific and engineering workforce with critical skills.
- Develop partnerships that leverage talent and ideas as an additional driver for innovative science-based engineering at Sandia.

**Performance Measure 4.1**

Enhance and foster a strong multidisciplinary Science and Technology base, inclusive of Sandia's Research Foundations.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>4.1.1</b> Programmatic planning, management and performance.	Outstanding	Agree	Outstanding S&T Strategy and Capabilities Management across all Research Foundation areas. Increased management attention on capabilities and strategic planning across all existing and emerging mission areas are impressive. Strategic investments to further strengthen Sandia core competencies are very positive.  Sandia's emphasis on "...science with the mission in mind," continues to mature strong S&T base across all mission execution elements.
<b>4.1.2</b> Quality of ST&E.	Outstanding	Agree	Impressive results and strong leadership across all Research Foundation Areas, with ongoing emphasis in mission focus.  External Advisory Panel feedback is very positive across all Research Foundation areas, which is a reflection of a strong ST&E base for Sandia. Sandia Science Advisory Board (SSAB) confirms excellence and outstanding performance across all Performance Measures.
<b>4.1.3</b> Performance in the technical development and sustainment of capability.	Outstanding	Agree	
<b>4.1.4</b> Relevance to national needs and agency mission.	Outstanding	Agree	Impressive results in science, technology and innovation, including numerous scientific breakthroughs across all mission execution elements.



**Performance Measure 4.2**

Enhance and foster a strong multidisciplinary S&T base through the SNL Directed R&D program and inclusive of DOE Office of Science program.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
4.2.1 Programmatic planning, management and performance.	Outstanding	Disagree Very Good	LDRD program management maturation continues to improve across all elements. Increased emphasis on objective LDRD proposal selection process has improved substantially, with very strong management support.  Increased assessments and maintenance of program metrics and outcomes continues to mature to make sound strategic management decision on future research investments.  Excessive reserve funding at beginning of FY 2010 resulted in numerous late starts at end of year and the development of Early Career program to attract next generation of scientists and engineers across all mission areas is imperative to future mission success.
4.2.2 Quality of ST&E.	Outstanding	Agree	External reviews of LDRD Grand Challenge projects provide positive feedback and very useful information to help with overall success of these projects.
4.2.3 Performance in the technical development and sustainment of capability.	Outstanding	Agree	Impressive strategic planning and ongoing assessment of investments made in LDRD program.
4.2.4 Relevance to national needs and agency missions.	Outstanding	Agree	LDRD continues to provide foundational science that underpins technology capabilities for broad spectrum of national security applications.

**Performance Measure 4.3**

Leverage Sandia's strong multidisciplinary engineering, S&T base to ensure success of programs for DOE Energy and Environment Technology Offices in a manner that strengthens the base capabilities needed to support strategic and national security objectives.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
4.3.1 Programmatic planning, management and performance.	Outstanding	Disagree Very Good	The ARRA sponsored project for recapitalization of SNL National Solar Thermal Test Facility (NSTTF) has been progressing slowly since initial FY 2009 appropriation and FY 2009 DOE issued Work Authorization. Through the third quarter of FY 2010, execution and costing against

			authorized work activities progressed slowly. A project manager was hired at Sandia during the third quarter and has taken corrective actions, making notable progress during the fourth quarter FY 2010 on all major tasks.
4.3.2 Quality of ST&E.	Outstanding	Agree	DOE program sponsors regard Sandia ST&E contributions as outstanding.
4.3.3 Performance in the technical development and sustainment of capability.	Outstanding	Agree	Sandia continues to attract numerous industrial partners and academia to collaborate on challenging research and development endeavors, which further strengthens capabilities.
4.3.4 Relevance to national needs and DOE missions.	Outstanding	Agree	Significant contributions across all DOE sponsored programs to further strengthen overall nuclear security and energy security, in support of national energy strategy.  Impressive energy technology deployments in applied energy programs, inclusive of solar, wind and geothermal technologies.

#### Performance Measure 4.4

Leverage Sandia's strong multidisciplinary ST&E base to ensure success of programs for OFA and Technology Partnerships in a manner, which has high national security impact and strengthens the base capabilities needed to support strategic and national security objectives.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
4.4.1 Programmatic planning, management and performance.	Outstanding	Agree	Evidence of less than 10% rejection following SSO review of proposals.  Impressive Annual Partnerships Report and Strategic Planning documents.
4.4.2 Quality of work performed.	Outstanding	Agree	Positive Customer Mean Loyalty Rating, which reflects satisfied sponsors/customers in support IA work activities.  Evidence of positive metrics and effective Intellectual Property Management and Licensing programs, which reflects positive enduring long-term partnerships across all mission areas.
4.4.3 Performance in the technical development and sustainment of capability.	Outstanding	Agree	Evidence of IA sponsors contributing to indirect costs. Very strong strategic partnerships across broad spectrum of IA work activities with OFA and Industrial Partners.

<p>4.4.4 Relevance to national needs, and DOE/NNSA and OFA missions.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Outstanding national security technical contributions and deployment of technologies.</p> <p>Provided significant capabilities for national defense, defense against terrorism, protection of national infrastructures, and sustainment of stable sources of energy and other critical resources.</p>
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**Other Considerations**

Despite Sandia organizational and management changes during FY 2010, inclusive of transition to new governance operations and oversight model, Sandia continues to maintain the integrity of all ST&E capabilities – seeking opportunities for improvements consistently. Additionally, progress on all identified FY 2009 Opportunities for Improvement was recognized with broader transparency and insight into all mission execution Policy Areas.

**Alternate Performance Evaluation Plan (PEP) for DNN**

Below addresses the addendum to Sandia’s FY 2010 Performance Evaluation Assessment Report regarding the critical performance measures in the Alternate PEP.

During the last quarter of FY 2010, DNN work was evaluated under Performance Objective 2 (PO-2) in Alternate PEP, which was issued for the last quarter of the fiscal year. All of the targets identified in Alternate PEP PO-2 and the Original PEP PO-4 were tracked and rated under this PO (PO-4). The rating for PO-4 is an accurate evaluation of DNN work, with a focus on ARRA sponsored Science, Energy and Environment Programs, described in both the Alternate PEP PO-2 and the Original PEP PO-4.

**Critical Performance Measure 1:** Measures that assess revenue management, cost, and resource allocation compared to Mission Area plans. Customer Satisfaction, as expressed by both Project Customers and Key Customers, such as using data from the Sandia external CSAT Survey results.

**Evidence:** Sandia SMUs provided FY 2010 Full-Time-Equivalent projections to Sandia leadership in July 2009, and used that plan as a baseline against which Sandia measured progress to plan for FY 2010, including DOE Programs (non NNSA) budget information. Updates to those projections were provided in December 2009 and again in July 2010 to align resources to current information. Sandia SMUs participated in annual Corporate External Customer Satisfaction (CSAT) survey during FY 2010 and positive results were provided to the Sandia Site Office (SSO). Evidence is also maintained and available within Sandia’s Integrated Laboratory Management System (ILMS).

**Critical Performance Measure 2:** Measures that demonstrate management review and monitoring of performance against customer milestones and deliverables associated with the National Security Technology Systems (NSTS) programs (former Sandia Strategic Management Group).

**Evidence:** Monthly assessment and evaluation of select program/project milestones and deliverables with issues is maintained by SMUs. SSO attends quarterly management reviews and has access to project milestone status and information, using ILMS.

**Critical Performance Measure 3:** Measures that demonstrate management review and assessment of performance of functional requirements by line organizations, such as Sandia Policy Areas of Safeguards and Security, Environment Safety and Health, Finance, and Corporate Governance, engaged in NSTS funded work as they impact mission execution.

**Evidence:** Sandia Executive Management evaluation of Enabling Support Indicators by Division/Functional Area/Policy Area is available through ILMS. A quarterly review of functional requirements by line

organization is conducted and performance of supporting functional organizations is assessed. The Division review (line organization) is conducted as part of the Sandia Executive Management Review, in coordination with SSO. Evidence is also maintained and made available within ILMS.

**Critical Performance Measure 4:** Measures that demonstrate process efficiency and effectiveness for continuous improvement.

**Evidence:** Sandia processes have been identified, analyzed, and improved to promote efficiency of operations. Sandia's organizational restructuring has focused on strengthening strategic customer relations, including DOE Energy, Science and Environment Programs. The restructure is expected to improve the efficiencies and effectiveness by aligning the SNL structure with the Administration's National Energy Strategy and Energy Security mission.

#### **Alternate PEP for S&T**

During the last quarter of FY 2010, S&T was evaluated under PO-3 in Alternate PEP, which was issued for the last quarter of the fiscal year. All of the targets identified in Alternate PEP PO-3 and the Original PEP PO-4 were tracked and rated under this PO (PO-4). The rating for PO-4 is an accurate evaluation of ST&E, described in both the Alternate PEP PO-3 and the Original PEP PO-4.

**Critical Performance Measure 1:** Measures that assess the health and impact of science and engineering and associated capabilities.

**Evidence:** Sandia continues to assess the viability of six core research foundations in the areas of Computational and Information Sciences, Biosciences, Pulsed Power Sciences, Microsystems and Microelectronics, Engineering Sciences, and Material Sciences. Evidence of a balanced scorecard system is maintained by Sandia's Office of Chief Technology Officer and available in ILMS to assure ST&E capabilities are being maintained.

**Critical Performance Measure 2:** Measures that assess the planning, management, and execution of ST&E SMU Programs.

**Evidence:** Sandia maintains a quarterly and annual assessment of Balance Scorecard indicators to assess performance with industrial, university and national laboratory partnerships. Sandia maintains external advisory boards to provide feedback of planning, management, and execution of S&T Strategy for SNL. Evidence is also maintained and available in ILMS.

**Critical Performance Measure 3:** Measures that demonstrate process efficiency and effectiveness for continuous improvement.

**Evidence:** Sandia uses an external advisory review process to assess and identify potential areas of improvement and efficiencies. The Sandia Chief Technology Officer meets with a SSAB to assess health of the ST&E capabilities. The SSAB convened September 2010 and provided very useful and strategic counsel and advice on a path forward for Sandia S&T Strategy and Capabilities Management.

## Operations and Business Performance Objectives

### PO-5: Facility Operations - Essential

**Sandia operates facilities to fully support successful accomplishment of mission, while protecting the public, the worker, the environment, and national security.**

**Adjectival Rating: VERY GOOD**

#### Summary of Performance

Sandia's overall performance in the area of Facility Operations is rated as "Very Good" for FY 2010. Sandia operated the nuclear and non-nuclear facilities in a safe and compliant manner. Safety basis documents for the nuclear facilities have been maintained up-to-date, but weaknesses persist with the non-nuclear facility safety basis documentation. Sandia successfully shipped 224 non-certified Cobalt-60 sources, avoiding future shipping costs. Problems were identified with delays in the Auxiliary Hot Cell Facility (AHCF) startup activities, and operational issues at the Manzano Nuclear Facilities and Hazard Category 3 (HC3) Onsite Transportation.

#### Significant Accomplishments

Sandia coordinated the successful shipment of 224 non-certified Cobalt-60 source pins from the Gamma Irradiation Facility (GIF). This included a portion of pins that required a dry-load configuration. Sandia analyzed the hazards, put appropriate controls into place, and completed the dry-load activity in time to meet the shipment date. This not only helped to reduce the non-certified inventory at the facility, but avoided future, far more expensive, shipping costs.

#### Opportunity for Improvement

While the readiness activities for the startup of the AHCF were completed this fiscal year, Sandia failed to move through the readiness preparation and verification processes in a timely manner, requiring significant Sandia senior management engagement.

Sandia's lack of adequate resources resulted in a slow response to operational issues at the Manzano Nuclear Facilities and HC3 Onsite Transportation.

#### Performance Measure 5.1

Nuclear facilities (HC-2 & HC-3) meet programmatic commitments while operating in a safe and compliant manner.

**NNSA Rating: Very Good**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
5.1.1 Sandia will complete the startup of the AHCF by March 1, 2010.	Very Good	Satisfactory	Sandia Organizations 1385 and 4126 failed to move through the readiness preparation and verification processes in a timely manner. This resulted in a nine-month slippage in the completion of the Contractor Operational Readiness Review (ORR) and impacted the timely disposition of transuranic (TRU) waste. This target would have been rated as "Unsatisfactory" if not for the efforts of Sandia senior management to regain schedule to meet commitments.

			<p>Sandia declared readiness of the AHCF on June 28, 2010. The DOE ORR was conducted from July 12-20, 2010 with only two pre-start findings identified. SSO authorization to startup the AHCF was provided to Sandia on September 28, 2010. The AHCF currently is on track to meet the shipment target for the remote handled TRU waste in May 2011.</p>
<p><b>5.1.2</b> Sandia will continue to improve nuclear facilities operations with independent assessments and self-assessments that address and track any issues identified by the assessments.</p>	Very Good	Agree	<p>Sandia's lack of adequate resources resulted in a slow response to operational issues at the Manzano Nuclear Facilities and HC-3 Onsite Transportation.</p> <p>As part of Sandia's Nuclear Operations Independent Assessment Program, Sandia conducted a self-assessment of the Nuclear Safety Culture at the Annular Core Research Reactor (ACRR). The assessment was modeled on those conducted by the Institute for Nuclear Power Operations. This assessment provided a comprehensive review with robust recommendations. Sandia should consider performing similar reviews at its other nuclear facilities to assess Sandia's nuclear safety culture.</p> <p>Additionally, TA-V has implemented the use of the "Quick Reference of Techniques and Tools for Human Performance Excellence and Error Prevention." Use of this guide was identified as a Noteworthy Practice by the Federal Operational Readiness Review Team report on the AHCF</p>
<p><b>5.1.3</b> Sandia will implement configuration management software for the nuclear facilities in TA-V by September 30, 2010.</p>	Very Good	Agree	<p>The eB (Enterprise Bridge) application was identified as a Noteworthy Practice by the Federal Operational Readiness Review Team report on the AHCF.</p>
<p><b>5.1.4</b> Sandia will comply with nuclear safety rules and controls specified in technical safety requirements for each facility (reference Sandia Safety Basis Manual CPR400.1.1.41/ MN471017), while operating nuclear facilities in a safe and compliant manner in support of Sandia programmatic commitments.</p>	Very Good	Agree	

5.1.5 Maintain configuration management of the Nuclear Facility (HC-2 & HC-3) Safety Basis documentation (10CFR830 Subpart B).	Very Good	Agree	
5.1.6 Sandia will develop a plan and cost estimate to remove non-ANSI standard certified sources from the Gamma Irradiation Facility (GIF) leading to non-nuclear reclassification of the facility per DOE Standard 1027 by the end of March 2010. Removal of sources will begin as soon as possible but no later than FY 2011.	Very Good	Outstanding	Sandia significantly exceeded expectations by not only completing planning but also removed 224 Cobalt-60 source pins offsite from the GIF. This not only helped to reduce the non-certified pin, source inventory at the facility, but also avoided future, far more expensive, shipping costs.

**Performance Measure 5.2**

Moderate hazard non-nuclear facilities and accelerators meet programmatic commitments while operating in a safe and compliant manner.

**NNSA Rating: Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
5.2.1 Sandia moderate hazard facilities (ACF, Rocket Sled Track, TTR, MESA MicroFab, and MDL) and accelerators (HERMES-III, and RITS-6) will maintain configuration management of the safety basis documentation and implement controls as identified in facility safety basis documentation in accordance with the requirements and processes established in the Sandia Safety Basis Manual (CPR400.1.1.41 / MN471017).	Very Good	Disagree Satisfactory	<p>Sandia transitioned to a Corporate Policy System (CPS), but did not conduct a detailed gap analysis of changes in the CPS from the previous Environment, Safety and Health (ES&amp;H) Manual. Sandia Nuclear Facilities received an approved exemption from Sandia Management to follow the new CPS and continue to follow the previous ES&amp;H Manual.</p> <p>Sandia has developed a Management of Change process for moderate hazard facilities. However, problems with implementation were identified during the year.</p> <p>While significant improvements have been implemented at Microsystems and Engineering Sciences Application (MESA) throughout the year, some weaknesses in implementation of the surveillance requirements to support the safety basis continue to exist.</p> <p>Sandia submitted the High-Energy Radiation Megavolt Electron Source III (HERMES) Safety</p>

			<p>Assessment Document (SAD) on June 11, 2009. However, Sandia did not provide the necessary supporting documentation for SSO approval of the SAD. Most recently, SSO received the revision to the HERMES Fire Protection Assessment on October 19, 2010.</p> <p>The current Tonopah Test Range (TTR) Safety Assessment (SA) is dated July 2005. TTR submitted a Safety Assessment Update Strategy Document in August 2009 to Organization 4126. This strategy identifies a 90-day update time frame. Little progress has been made on this strategy to date, and no updated SA was completed during FY 2010.</p> <p>The current Aerial Cable Facility (ACF) SA is dated September 2005. The ACF SA Project schedule identifies completion of the SA in September 2010. The SA currently is pending Organization 4126 concurrence.</p> <p>The current Rocket Sled Track Complex SA is dated November 2006. The SA currently is being reviewed by Organization 4126.</p>
<p><b>5.2.2</b> Sandia will comply with requirements and processes established in the Sandia ES&amp;H Manual while operating non-nuclear facilities in a safe and compliant manner in support of Sandia programmatic commitments.</p>	Very Good	Agree	

**Other Considerations**

None



## PO-6: Safeguards & Security and Counterintelligence (NA-70) - Essential

Sandia will manage and operate its operational safeguards and security (S&S) and counterintelligence (CI) functions to fully support successful accomplishment of the mission, while protecting the public, the worker, the environment, and national security assets in accordance with the terms and conditions of the contract.

**Adjectival Rating: VERY GOOD**

### Summary of Performance

Combining the S&S rating of "Very Good" and the CI rating of "Outstanding", Sandia's overall performance is rated as "Very Good." Overall Sandia exceeded many of the basic performance expectations in the areas of S&S. Sandia was able to reduce several aspects of the overall S&S footprint related to vaults and vault-type rooms (VTRs) and the total number of cleared facilities. Sandia has demonstrated enterprise-wide leadership with implementation of WFO full cost recovery efforts that yielded approximately \$22 million in funds that were returned to NA-70. Sandia also achieved \$5 million in cost efficiencies that were due in part to implementation of the ACES program and streamlining of programmatic requirements that reduced the level of effort required in administration of the Protective Force Training program and the Physical Security programs.

The Sandia Security organization has demonstrated effective performance in most elements of the S&S program at the New Mexico (NM), Tonopah Test Range (TTR) and California (CA) sites as well as at Sandia's remote site operations. Performance in the topical area of Protection Program Management was rated as "Marginal" in the Annual Operating Procedure, based on the following S&S program elements that were assigned less-than-effective performance ratings: Resolution of Findings (Marginal), Incident Reporting, Management (Marginal) and Operations Security (Unsatisfactory). There was no adverse impact to S&S protection and control due to these ratings. These ratings should not be confused with the adjectival ratings assigned in the Performance Evaluation Report these are S&S ratings as defined in DOE Manual 470.4-1, *Safeguards and Security Program*.

The DOE Office of Enforcement (OE) issued its formal investigation report entitled "Adverse Classified Information Security Trend at Sandia National Laboratories" in June of 2010. As a result of this report, Sandia has developed a Security Improvement Plan to address the areas of concern that will be forwarded to the OE for inclusion in a potential settlement agreement.

Sandia performance in the area of CI is rated as "Outstanding" in FY 2010 as Sandia continues to exceed almost all of the performance expectations in Sandia's CI program. The information presented in Sandia's FY 2010 Performance Evaluation Assessment Report (PEAR) for this metric is representative of the conditions acknowledged by the DOE CI Program Office (IN-20) and observed by NNSA during routine interactions and oversight activities at the target level.

The Sandia CI Program has a dedicated workforce that has contributed to the success of the overall CI program. They have undergone a successful transition with the Senior Counterintelligence Officer (SCIO) position and continued Sandia's outstanding performance. The CI Program has effectively integrated the different CI elements into all of Sandia's program activities. The Sandia CI Program has a very strong awareness program in which guest speakers are utilized and briefings are tailored for the attendees. Awareness briefings are provided to diverse groups of personnel and may be unclassified or classified based on the clearance and accesses of those in attendance. CI program personnel received training during FY 2010, but the amount of training was restricted due to budget constraints. CI Investigations are risk-based and all CI program elements are involved in mitigating threats to Sandia National Laboratory (SNL). The CI program has a very good working relationship with the Intelligence Community and law enforcement agencies. The NNSA HQ CI Program Office values the quality and completeness of investigations and during FY 2010, the Sandia CI Program has conducted quality and complete investigations that

have met or exceeded the NNSA HQ CI Program's standards. The Sandia CI Program has integrated Cyber Security with other areas of the CI Program. The Sandia CI Cyber Security has contributed to accomplishments in investigations, analysis, and training and awareness. The Sandia CI Cyber Security has partnered with the Sandia Cyber Security Office in proactively deterring threats. The CI Analysis Program has supported and been integrated with other CI program areas. Analysis has contributed to the Sandia's successes in the areas of awareness briefings, investigations and Cyber. Analysis of information received during briefings and debriefings has been used to support awareness briefings and CI investigations.

### **Significant Accomplishments**

**Work For Others (WFO) Full Cost Recovery:** Sandia has demonstrated enterprise-wide leadership through return of approximately \$22 million to the Defense Nuclear Security program budget resulting from successful WFO Program full cost recovery efforts initiated by the Sandia S&S organization.

**Cost Efficiencies:** Sandia was able to realize \$5 million in cost efficiencies while maintaining effective performance in the S&S Program. Cost Efficiencies were due in part to implementation of ACES and streamlining of programmatic requirements that allowed reductions in the level of effort required in administering the Protective Force Training Program and Physical Security programs. This includes \$2.3 million in General Plan Project (GPP) associated with efficiencies in Security Systems Replacement Project (SSRP).

**Protective Force Staffing Reduction Plan:** As a result of post-deinventory follow on actions, Sandia determined the need to reduce the number of Protective Force positions at SNL/NM by a total of 20 by the end of FY 2011. The reduction goal for FY 2010 was 13 with the remaining seven to be removed from the rolls by the end of FY 2011. Sandia S&S actively engaged with Human Resources (HR) in an attempt to place all individuals within SNL in order to minimize Reduction In Force (RIF) actions, as a result only two employees are subject to the potential RIF.

**Reduction of S&S Footprint:** The following are examples of successes in reducing SNL's S&S footprint. Sandia reduced vaults and vault-type rooms by 28% in NM and 18% in CA through implementation of a principle-based system for establishing and managing vaults and VTR using a life-cycle management approach including leading indicators. Additionally, Sandia was able to reduce the number of facility clearances by utilizing newly developed "Facility Clearance Principles" for subcontractors by more than 15%, which is well above the 10% goal set for the year. Although Sandia established a reduction goal of 5% for the reduction of personnel clearances, Sandia was only able to reach a 3% reduction. However, it is noteworthy in that Sandia also developed "Personnel Clearance Principles". Principles in both the Facility and personnel clearance arenas are essential in ensuring clearances are limited to those with a valid need and proper justification.

**Integrated Assessments (IA):** For FY 2010 15 IAs were completed as part of a pilot program established primarily to increase the effectiveness of line self-assessments. SSO has observed some of the IAs completed and preliminary indications and results appear to have yielded more effective line self-assessments that take into account human performance and human error factors.

### **Opportunity for Improvement**

The FY 2010 Annual Operating Procedure (AOP) goal was 90% but only 85.75% of the AOP commitments were met by the end of FY 2010. 13 of the 54 fourth quarter deliverables are rated as 'not met' (Red AOP status).

**Continued Reduction of 10CFR824 Incidents:** The FY 2010 goal of 80 or less incidents related to 10CFR824 was exceeded by six for a total of 86 during FY 2010. SSO recognizes that Sandia has made some progress in improving performance in the area of security incidents; however, many of the improvements are directly tied to improvements in the Security program, and do not necessarily address issues associated with line/mission performance in the S&S arena and Senior Management commitment to continued and sustained performance.

**Performance Measure 6.1**

Support the NNSA Enterprise through Defense Nuclear Security (DNS) Management Excellence.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>6.1.1</b> Provide transparency into the Security Budget.	Outstanding	Agree	Sandia continues to exceed expectations in the management and execution of the S&S budget. The current processes and reporting mechanisms in place allow the Sandia Site Office (SSO) and NA-70 to track and monitor S&S expenditures at appropriate levels. Changes and modifications to the budget are carefully managed through a formal and robust change control process that includes the SSO Assistant Manager of S&S.
<b>6.1.2</b> Prepare the 2011 Annual Operating Plan (AOP) by the established due date.	Very Good	Agree	The FY 2011 AOP was submitted to the site office on time. Sandia made the changes to the AOP necessary to transition it from a transactional activity/task based document to one that is more S&S budget oriented as required by NA-70. The document was prepared in a manner that only required minor data adjustments before SSO could submit it to NNSA Headquarters (HQ).
<b>6.1.3</b> Maintain and successfully complete the milestones reflected in the FY 2010 S&S AOP.	Good	Agree	Approximately 85.75% of the AOP commitments were met by the end of FY 2010 which is 4.25% below the agreed upon target of 90%. Areas not met include resolution of findings that identified specific percentage goals for successful CAP submissions and validations, and a reduction of 5% in personnel clearances. The goal for reduction of lab-wide incidents was not met.
<b>6.1.4</b> Execute the S&S budget process in accordance with the Office of Planning, Programming, Budgeting and Evaluation process.	Outstanding	Agree	
<b>6.1.5</b> Demonstrate the requirements/cost basis for conducting all FS20 funded work.	Outstanding	Agree	Sandia continues to use an outstanding requirements-based approach to build the annual FS20 funded S&S budget. Additionally, Sandia has successfully implemented a cost recovery mechanism associated with WFO (customer funded) activities that is being used to reduce the overall FS20 funding requirement at the enterprise level.

**Performance Measure 6.2**

Manage risk to address the spectrum of security threats.

**NNSA Rating: Very Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>6.2.1</b> Manage the security footprint.	Very Good	Agree	Sandia has initiated several activities designed to reduce the overall security footprint for SNL. In one area, Sandia has developed and implemented a "principles-based" methodology for authorizing the implementation of vaults and VTRs, which has reduce VTRs by 27% in NM and 18% in CA. Facility clearances were reduced by 15%, exceeding their goal of 10%, and although Sandia was not able to meet their reduction goal of 5% for personnel clearances, Sandia achieved a 3% reduction by establishing an effective principles-based methodology that will ensure future clearances are adequately justified.
<b>6.2.2</b> Realize operational efficiencies	Outstanding	Agree	ACES deployment resulted in the ability to consolidate certain access control functions between sites allowing efficiencies to be gained at the CA site. Additionally, two Full Time Equivalents (FTEs) (SNL/NM) were reduced in FY 2010, and additional reductions are expected as ACES is completed. Sandia has also been successful in achieving efficiencies throughout the implementation of other IT and process efficiencies. So far, three positions at SNL/NM (Physical Security, Requirements Management, and Pro Force Management) have been eliminated or consolidated.
<b>6.2.3</b> Implement technology deployment to reduce costs.	Not Scored	Not Scored	This was not included in the PEP for Sandia. It was not funded by NA-70. As a Security Protection Level (SPL)-4 facility Sandia was not expected to meet this target.

**Performance Measure 6.3**

Recruit, sustain, and exercise the talents of people and critical skills.

**NNSA Rating: Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>6.3.1</b> Identify and address skills gaps.	Good	Disagree Satisfactory	Sandia uses individual development plans to identify training needs but there is no analysis to address skill gaps. Sandia has self-identified this issue and is taking appropriate steps to fix this.
<b>6.3.2</b> Maintain trained and qualified staff.	Outstanding	Disagree Good	In general, normalized turnover and separation rates within the S&S organization appear to have

		<p>begun to slow down during this fiscal year. It is recognized that some of the numbers for FY 2010 appear high due to planned realignments within the organization including the centralization of the performance assurance function within Center 4000. However, there is still a concern with the turnover within the Protective Force management structure.</p> <p>During this performance period, Sandia overcame obstacles and was able to make several strategic external hires including Physical Security, Technical Surveillance Countermeasures, Classified Matter Protection Control, Facility Clearance program, despite legacy corporate requirements that had previously impeded many external hires into the security organization. Additionally, despite the lean budget year in FY 2010 that initially included a hold on all training costs except for training required by DOE Order, Sandia was able to provide training via the National Training Center, internal corporate resources, on-the-job training and some external resources.</p>
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<b>Performance Measure 6.4</b>			
Provide assurance of effective performance.			
<b>NNSA Rating: Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
6.4.1 Emphasize continuous improvement and performance assurance.	Outstanding	Disagree Satisfactory	Sandia is involved in NNSA's efforts to reform Performance Assurance, as well as Corporate Contractor Assurance System (CAS) development activities. During FY 2010, S&S developed an enhanced CAS framework (approach) - resulting in PEP Critical Performance Indicators and S&S program performance measures that have been posted in Integrated Laboratory Management System (ILMS) for FY 2011. Follow on activities in support of this target during FY 2011 include continued work on S&S-related critical performance measures and indicators under Business Operations and Mission Support. (See 6.4.4 for more details.) Although a significant effort has been put into the approach and some into deployment, during FY 2010 there were no measurable results directly attributable to this target.
6.4.2 Maintain and sustain effective programs.	Good	Agree	The Protection Program Management was rated marginal based on the marginal ratings assigned

			<p>to the subtopics of Management Controls (Resolution of Findings and Incident Reporting and Management) and “Unsatisfactory” rating assigned in the subtopic of Operations Security. SNL/CA, SNL/TTR, SNL/Washington D.C. Office, SNL/Minnesota and SNL/Kauai were assigned composite ratings of “Satisfactory” in accordance with DOE M 470.4-1 ratings, which is the highest level attainable.</p> <p>For FY 2010 15 Integrated Assessments (IAs) were completed as part of a pilot program established primarily to increase the effectiveness of line self-assessments. SSO has observed some of the IAs completed and preliminary indications and results appear to have yielded more effective line self-assessments that take into account human performance and human error factors.</p>
6.4.3 Identify and apply best practices and lessons learned.	Good	Disagree Satisfactory	Two of the three preplanned/scheduled benchmarking activities (Security Incident Management Program and systems for classified visits) for FY 2010 were cancelled. The remaining benchmarking activity related to security badging was scheduled for and conducted in the third quarter. However, at the close of the performance period SSO has not been provided any of the results and there is no evidence available on ILMS to support success in this target. The report for this activity is expected in the first quarter of FY 2011.
6.4.4 Implement an effective Contractor Assurance System. Monitor performance through standardized metrics.	Good	Disagree Satisfactory	Sandia has continued to struggle developing meaningful performance-based metrics that provide leading indications of potential issues or performance degradation in the security program. Sandia did not publish quarterly data analysis and trending results for the last three quarters of this performance period.

**Performance Measure 6.5**

CI Program: Detect, deter, and mitigate Foreign Intelligence collections and espionage efforts and International terrorist’s threats against NNSA personnel, classified and other sensitive programs, and information architecture.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
6.5.1 CI Training and Awareness Program – Provide a CI training and awareness program that will assist personnel with their understanding of the	Outstanding	Agree	

general risks posed by foreign intelligence services and international terrorist organizations.			
<b>6.5.2</b> CI Investigations Program – Implement and manage an effective CI investigations program that addresses the latest specific threats through the investigation and assessment of any suspicious activities that may occur during contacts between NNSA employees and persons from sensitive countries or international terrorist organizations.	Outstanding	Agree	
<b>6.5.3</b> CI Information and Special Technologies Program – Implement and manage a CI information and special technologies program capable of identifying and mitigating cyber-based threats against NNSA.	Outstanding	Agree	
<b>6.5.4</b> CI Analysis Program – Provide a counter-intelligence analysis program capability that can effectively analyze, compile and provide appropriate threat information to senior leadership in NNSA, DHS and other elements of the U.S. intelligence community.	Outstanding	Agree	

**Other Considerations**

None

**PO-7: Environment, Safety and Health, Emergency Management, Fire Protection, and Facilities  
Policy Area Programs – Essential**

Sandia manages its Environment, Safety and Health, Emergency Management, and Fire Protection Programs to fully support successful accomplishment of mission, while protecting the public, the worker, the environment, and national security assets.

**Adjectival Rating: VERY GOOD**

**Summary of Performance**

Sandia's overall performance in the area of Environment, Safety and Health (ES&H), Emergency Management (EM), and Fire Protection (FP) Programs is rated as "Very Good" for FY 2010. Sandia continues its five-year trend of reductions in its Total Recordable Case Rate (TRCR) and Days Away, Restricted, Transferred Case Rate (DART-CR). Sandia continued to maintain ISO 14001 compliance for Environmental Management, and continues a three-year trend of successfully passing the annual New Mexico Environment Department (NMED) unannounced Hazardous Waste Inspection without issuance of any violations noted. Sandia EM continues to maintain an effective and comprehensive program, and have recently implemented a rigorous process to address longstanding issues with the Emergency Public Information program and issues management processes. Sandia has demonstrated that FP improvements have been made against long-standing concerns, and has implemented improvements due to its Certificate of Occupancy process.

With respect to Facilities, Sandia's performance in the Energy, Maintenance, and Site Planning has been rated as "Very Good" for FY 2010. The Line Item Projects are projected to be completed ahead of schedule and under budget in FY 2011. The Ion Beam Laboratory (IBL) facility succeeded in obtaining the Leadership in Energy and Environmental Design (LEED) Gold certification. Real Property and management of projects less than \$5 million performed adequately but did not meet all established expectations. Opportunities for improvement are ensuring sufficient Work Planning and Control (WP&C) sustainment efforts, and strengthening implementation efforts associated with Earned Value Management System (EVMS) in FY 2011 in order to maintain certification.

**Significant Accomplishments**

- Growth of the Sandia Electrical Safety Advisor Program is a significant indicator that Sandia seeks to prevent electrical events.
- Five-year trend on TRCR/DART reductions (TRCR: 2.67 in 2006 and 1.30 in 2010. DART: 1.22 in 2006 and 0.4 in 2010).
- Continuing management commitment in support of maintaining ISO 14001 certification.
- Three-year trend of NMED performing unannounced hazardous waste inspection without identification of any violations.
- Improvements in FP over the last three years.
- The Line Item Projects, IBL & Heating System Modernization (HSM), are projected to be completed ahead of schedule and under budget in FY 2011. In addition, The IBL facility succeeded in obtaining the LEED Gold certification and Building 750 was "LEED Existing Buildings: Operations & Maintenance Silver" certified.

**Opportunities for Improvement**

- Ensure sufficient efforts in FY 2011 to sustain implementation of WP&C activities (including support to address the four issues identified in the internal Sandia National Laboratory (SNL) effectiveness review for closure of HS-64 Finding C-1).
- Prioritize implementation efforts associated with the EVMS Corrective Action Plan (CAP). Significant improvements are needed in FY 2011 in order to maintain EVMS certification.



**Performance Measure 7.1**

Sandia demonstrates continuous improvement to the ES&H programs that support the Integrated Safety Management System (ISMS).

**NNSA Rating: Very Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p><b>7.1.1</b> Implement an effective and sustainable Work Planning and Control (WP&amp;C) process that enables mission success.</p>	<p>Very Good</p>	<p>Agree</p>	<p>Sandia completed all planned corrective actions associated with 2008 HS-64 Finding C-1 as scheduled. Noteworthy key support activities included training over 1600 personnel and development of the electronic WP&amp;C tool. Sandia conducted an effectiveness review and concluded the corrective actions were partially effective due to some line organization(s) implementation, while noting overall improvement in conditions, including fewer reportable incidents with correspondingly less impact on the mission. Analysis of the review data resulted in issuance of four Significant Findings, which are being tracked for further action by Sandia. While efforts by the Policy Area group to promote effective WP&amp;C merit recognition are considered to be very good, implementation results by some line organizations were less than fully effective (see discussion under the <i>Performance Objectives Overview, Mission Performance Group, Mission Impact</i> section). NNSA agrees with the Sandia's rating due to the very good support to the line organizations.</p>
<p><b>7.1.2</b> The TRCR meets the FY 2009 NNSA average.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>The FY 2009 NNSA average TRCR was 1.5. Sandia's TRCR through FY 2010 was 1.30. There have been 128 recordable cases in FY 2010. In FY 2009, there were 155 recordable cases. Reductions have occurred the last five years.</p>
<p><b>7.1.3</b> The DART-CR meets the FY 2009 NNSA average.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>The FY 2009 NNSA average DART-CR was 0.7. Sandia's DART-CR in FY 2010 was 0.40. There are 39 DART cases for FY 2010. For this same timeframe in FY 2009, there were 51 DART cases. Reductions have occurred the last five years.</p>
<p><b>7.1.4</b> Reduce the number of incidents that have the possibility of serious or fatal injury for Sandia employees and/or contractors in the</p>	<p>Very Good</p>	<p>Agree</p>	<p>Sandia has demonstrated very good management commitment to monitor and improve Electrical Safety and Explosive Safety.</p>



related hazards.			outstanding commitment and support to Mission organizations for identification and evaluation of IH related hazards in the workplace.
7.1.7 Evaluate critique process for unplanned ES&H Events (Occurrences and Non-occurrence Trackable Events) and provide specific feedback to organizations to assist in producing sustainable improvement.	Outstanding	Disagree Good	The Sandia's Performance Evaluation Assessment Report (PEAR) states, "the critique process sustained consistent level of performance and continues to provide information that contributes to the subsequent causal analysis pertaining to occurrences and non-occurrence tracking events." However, the SSO Facility Representatives noted that approximately 25% of critiques conducted did not include the individuals involved in the event (excluding instances where it was not practical or necessary). Additionally, while Sandia performed an evaluation/self-assessment of their critique process and acknowledges the issue of inconsistent participation by individuals involved in the event(s), actions to correct this issue were lacking.

**Performance Measure 7.2**

Sandia maintains a satisfactory and effective Environmental Management System.

**NNSA Rating: Very Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
7.2.1 Maintain International Organization for Standardization (ISO) 14001, Certification and the Environmental Management System.	Outstanding	Agree	Third party auditors reviewed the programs at both sites (New Mexico and California) and each site has maintained their ISO 14001 certifications. At both sites, the Environmental Management Systems continue to improve. Sandia management has demonstrated outstanding commitment toward environmental management.
7.2.2 Ensure environmental compliance with DOE, Federal, State and local requirements.	Satisfactory	Agree	There were two Notices of Violation (NOVs) for the Sandia California site for the two copper exceedences, which occurred on two separate days. Receipt of any NOV is serious. Sandia conducted investigations and implemented a flushing program specific to California to avoid recurrence. Also within California was the receipt of four issues from the Alameda County Environmental Health Services from a 2008 inspection (issues have been addressed).  Sandia received one NOV (without fine) from the Albuquerque Bernalillo County Water Utility Authority for an arsenic exceedance.

			<p>NNSA agrees with the rating of "Satisfactory", in part due to noteworthy compliance achievements below:</p> <ul style="list-style-type: none"> <li>• Sandia's efforts on development of the SNL/NM and SNL/CA Annual Site Environmental Report (ASER) are commendable.</li> <li>• The effort to date by Sandia in preparation of the Site Wide Environmental Impact Statement (SWEIS) was noteworthy.</li> <li>• In May 2010, the NMED conducted a Hazardous Waste Compliance Inspection, resulting in no violations of hazardous waste management regulations (20.4.1 NMAC).</li> </ul>
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<b>Performance Measure 7.3</b>			
Sandia maintains a satisfactory and effective EM Program.			
<b>NNSA Rating: Very Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>7.3.1</b> Complete all milestones and commitments implemented through the Sandia/New Mexico FY 2010 Business Plan for EM and develop an FY 2011 Business Plan.	Very Good	Agree	Sandia EM completed 86% of the commitments in the FY 2010 Business Plan prior to the end of FY 2010. SSO agrees that 86% completion of the milestones in the business plan should be rated as "Very Good".
<b>7.3.2</b> All EM program elements are rated Satisfactory during SSO, NNSA, or DOE Oversight activities.	Outstanding	Disagree Very Good	<p>SSO evaluated Sandia performance in the annual full-scale exercise. The SSO evaluation resulted in eight Noteworthy Practices and five Opportunities for Improvement (OFI), three of which were self-identified by Sandia. The annual full-scale exercise encompasses all aspects of the EM programmatic and response elements.</p> <p>The Noteworthy Practices addressed effective utilization of consequence assessment tools by the Consequence Assessment Team; timely and accurate protective action decision making by the Incident Commanders; and effective reentry planning by the Emergency Response Team. This indicates that the corrective actions that were implemented to address findings from the 2009 Office of Independent Oversight (HS-63) inspection were effective.</p> <p>The OFIs were specific to less than adequate</p>

			<p>implementation of Emergency Public Information (EPI) processes, specifically with regard to timely dissemination of EPI to workers and the public and adequate communication between the Emergency Operations Center (EOC) and the Joint Information Center. Plans to address these OFI's are being implemented.</p> <p>In FY 2010, SSO was unable to validate the effectiveness of the milestones that were implemented to address Finding 8 from the 2006 Office of Independent Oversight (SP-43) inspection. The finding related to less than adequate implementation of an effective issues management program. This is also a longstanding issue that Sandia is working using the Influencer Model (causal analysis and identification of desired results) to improve the issues management process.</p> <p>Although the emergency response elements of the program have improved significantly, issues with effective implementation of the Sandia EPI program and issues management processes justify a rating of "Very Good".</p>
<p><b>7.3.3</b> Implement an EM Program consistent with DOE O 151.1C, Comprehensive EM System, Contract Requirements Document (CRD), and NNSA approved plans and schedules. (PO-40.1)</p>	<p>Very Good</p>	<p>Agree</p>	<p>Sandia EM has effectively implemented DOE O 151.1C CRD, which encompasses 15 elements of a comprehensive EMS. In FY 2011, they will use the Influence Model (causal analysis and identification of desired results) to improve the Emergency Public Information and Readiness Assurance programs. SSO concurred with this approach, and progress is briefed at bi-weekly and monthly SSO and Sandia program level and senior management meetings.</p>
<p><b>7.3.4</b> Improve EM program performance and readiness. (PO-40.2)</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>In FY 2010, SSO was unable to validate the effectiveness of the milestones that were implemented to address Finding 8 from the 2006 SP-43 inspection. The finding related to less than adequate implementation of an effective issues management program. Although Sandia has recently initiated a process (Influencer Model) to improve issues management processes, issues management in the EM program continues to be an issue.</p> <p>Results from the FY 2010 EM performance targets demonstrate outstanding EM program performance and readiness. Of note was the outstanding response by Sandia during the EMCORE shooting incident (public company</p>

			located close to Sandia), and the subsequent learning from this unfortunate event.
<b>7.3.5</b> Provide assurances of effective and sustained performance in EM by fully integrating the site's EM Program into the CAS. (PO-40.3)	Satisfactory	Agree	Sandia is working to improve their Readiness Assurance Program to ensure an effective issues management process. Sandia is planning to implement the Issues Management and Resolution System (IMaRS).
<b>7.3.6</b> Promote innovation and proactiveness in EM by benchmarking and implementing best practices and lessons learned from DOE/NNSA sites and external organizations. (PO-40.4)	Satisfactory	Disagree Good	<p>The following positive activities were noted but not discussed in Sandia's FY 2010 PEAR.</p> <p>Sandia has proactively implemented Web-EOC as a means to better document and learn from drills and events.</p> <p>Sandia EM performed several comparison activities during the reporting period. For example, inquiries were made from the other DOE laboratories as to the length of time it takes them to complete field monitoring activities. Sandia also worked with the Los Alamos National Laboratory Consequence Assessment Team to exchange best practices and processes when modeling hazardous materials consequences.</p> <p>Sandia arranged benchmarking sessions with local Emergency Operation Officials (city, county, state, etc) on a routine basis.</p>

<b>Performance Measure 7.4</b>			
Sandia maintains a satisfactory and effective Fire Protection Program. <b>NNSA Rating: Very Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>7.4.1</b> Complete the annual scheduled assessments (e.g., Program, Fire Hazard Analysis (FHAs), Fire Protection Assessments (FPAs), Annual Fire Loss Report).	Outstanding	Disagree Very Good	Sandia demonstrated a very good assessment program in the FP area. Sandia, in coordination with SSO, developed a comprehensive three-year self-assessment plan of the FP program that targets specific areas within the five major program elements of 1) Inspection, Testing, and Maintenance, 2) Emergency Response, 3) Construction, 4) Operations, and 5) Program Administration. Sandia worked with SSO to ensure its self-assessment program also addresses the SSO FP Criteria Review and Approach Document (CRADS). The plan considers perceived risk, previous performance, external events, lessons learned, and importance

			<p>to the mission when identifying specific self-assessments.</p> <p>Completed assessment activities and results include:</p> <ul style="list-style-type: none"> <li>• Sandia completed Baseline Needs Assessment of emergency services for Tonopah Test Range (TTR).</li> <li>• Completed 93% scheduled facility Fire Protection Assessments (FPAs) and updates of all nuclear facility Fire Hazard Assessments (FHAs).</li> <li>• FPA's accuracy is being improved. One example is the updated FPA for Building 970 in January 2010 to reflect the removal of an automatic foam sprinkler system that was taken out of service three years ago.</li> <li>• Identified corporate issue regarding hazardous materials management. Developed a gap closure plan to remediate risk in the short term and to improve the overall program for sustained improvements to help the line self-manage compliance.</li> <li>• Completed an Effectiveness Review of the SNL/NM Baseline Needs Assessment, NFPA 1500 Evaluation, and Master Plan.</li> <li>• All FPA findings were risk ranked and used to develop investment strategy for remediation.</li> </ul> <p>Some of the activities mentioned above were long standing items of concern. However, Sandia has demonstrated very good progress completing annual scheduled assessments.</p>
<p>7.4.2 Implement the Certificate of Occupancy (COO) process for new and existing facilities</p>	<p>Outstanding</p>	<p>Agree</p>	<p>The COO process for existing facilities was developed in 2009 and is tied to the rolling five-year schedule for conducting facility FPAs. The required frequency for performing FPAs is as follows: one year for Nuclear Facilities; three years for DOE Mission Critical and High-Cost Buildings; and five years for other facilities.</p> <p>A total of 54-FPAs were scheduled for FY 2010. Of those scheduled, 48 were completed, which included all of the nuclear facilities. Additional FPA's requested by the line (and completed by FP personnel) were Aerial Test Facility (four buildings) and Rocket Sled (four buildings). The 50-FPA's conducted (93% against the 58 scheduled) covered 89 buildings. During FY</p>

			<p>2009, 40-FPA's were conducted under the new COO process. All facilities will have experienced the new FPA/COO process by FY 2014.</p> <p>Improvements identified/made during FY 2010 resulting from the FPA/COO process, and providing a basis for NNSA to agree with the Sandia rating of Outstanding, were:</p> <ul style="list-style-type: none"> <li>• Upgraded FP system in the Annular Core Research Facility, B6588</li> <li>• Installed sprinklers in EOC, B801, B802</li> <li>• Upgraded B858 fiber network for local fire alarm system</li> <li>• Designed smoke removal system in B858EL</li> <li>• Replaced isolation valves on main water distribution system in SNL/California(CA)</li> <li>• Designed fire alarm reporting system at SNL/CA</li> <li>• Installed seismic bracing on C978 sprinkler system at SNL/CA</li> <li>• Designed upgraded TTR fire alarm system</li> </ul>
<p><b>7.4.3</b> Complete scheduled commitments on Fire Protection activities (results from Baseline Needs Assessment (BNA), corrective actions, Vault Type Room (VTR) lock replacements, etc)</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>Sandia made very good progress completing commitments, including:</p> <ul style="list-style-type: none"> <li>• Sandia increased its Fire Protection engineering (FPE) resources by hiring two new staff members. One is highly credentialed with BSME, MS FPE, PhD Manufacturing Engineering, PE, member of NFPA 13 Technical Writing Committee, and brings in fire risk analysis expertise from the auto industry. The other new hire is a recent graduate BS FPE who is working during the summer and then will be on a Special Masters Program in the fall to obtain his MS FPE in May 2011. These resource needs were identified via a program staffing analysis.</li> <li>• Sandia has made significant strides in evaluating and correcting code deficiencies especially in the nuclear facilities of Technical Area V this year. Several expensive sprinkler system upgrades were designed and installed. Also a long-standing deficiency was corrected by installing an automatic sprinkler system in the SNL/New Mexico (NM) EOC</li> <li>• Sandia continues to provide significant support to the DOE complex and national FP community (including the NFPA.</li> </ul>



			<p>Sandia chairs the FP EFCOG and is a member of the writing teams tasked to revise the DOE FP corporate policy and DOE FP requirements in DOE O 420.1B and align the FP engineering design requirements of DOE-STD-1066 with these order requirements. In addition, Sandia FP Engineers are members of NFPA 55 and NFPA 400 Technical Writing Committees. These NFPA committee involvements ensure Sandia stays ahead of pending code changes and understands their impacts before their release. Sandia FP Engineers also provided technical support to the line for an external DOE customer.</p> <ul style="list-style-type: none"> <li>• Sandia demonstrated good application of recognized industry metrics to their Corporate FP Program this year. SNL risk ranks, tracks and trends all FPA findings to ensure limited resources are applied where most benefit will occur for reducing overall site fire risk and ensure maximum support of programmatic missions.</li> </ul> <p>With the exception of providing outstanding support to the DOE and NNSA FP community, many of these completed commitments were associated with long-standing issues in fire protection staffing, qualification, and design deficiencies. The overall effort is rated as "Very Good".</p>
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<b>Performance Measure 7.5</b>			
Sandia implements efficient and cost-effective programs in the areas of Utilities and Energy; Real Property, Maintenance, Site Planning, and Project Management and ensures transparency for performance measures and targets via a reporting tool in Integrated Laboratory Management System (ILMS).			
<b>NNSA Rating: Very Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
7.5.1 Sandia will continue to implement and report on established quality energy management program objectives consistent with the guidance in DOE Order 430.2B and E.O. 13423.	Outstanding	Agree	Sandia met or exceeded the 10 metrics tracked in the FY 2010 Executable Energy Plan. Notable metrics include energy intensity reduction went from 13.8% to 15.9% (target is 30% by FY 2015), water intensity reduction went from 21.5% to 37.8% (exceeded target of 16%) and percent of buildings compliant with High-Performance Sustainable Building (HPSB) Guiding Principles is being tracked to hit target of 15% by FY 2015.

<p><b>7.5.2</b> Sandia will effectively manage and measure Real Property and Space usage to meet SNL objectives and DOE asset management goals consistent with DOE O 430.1B Real Property Asset Management (RPAM) and formal guidance.</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>The FY 2010 Facility Information Management System (FIMS) was conducted as required and the scorecard was submitted to the Office of Engineering and Construction Management (OECM) with a score of 'Green' noting zero variances in the data.</p> <p>Sandia has exceeded the established office space utilization goal to achieve a 1% improvement in FY 2010. Office space utilization improved from 82% in FY 2009 to 84% in FY 2010.</p> <p>Preliminary Real Estate Plans (PREPs) were submitted on or ahead of schedule and several Real Estate actions have been aggressively pursued and completed in the fourth quarter. However, delays were experienced on the submittal of two permit renewal real estate packages due to the lack of tracking and tracing of U.S. Air Force environmental documents. Consistent attendance of the U.S. Air Force Technical Advisory Sub-committee (TAS) meetings should have prevented these delays from occurring. The 26000 Igloo area on-site validation and analysis requested by NNSA in May 2008 was delayed and never completed. In the fourth quarter of FY 2010, Sandia took the initiative to resolve the action but final resolution must be a collaborative agreement between Sandia, NNSA, and the U.S. Air Force.</p>
<p><b>7.5.3</b> Sandia will maintain real property assets and provide associated trending consistent with DOE Order 430.1B RPAM to support mission.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Maintenance completed by Sandia (\$104.1 million), combined with a Replacement Plant Value (RPV) of facilities and infrastructure (\$4.295 billion), exceeded the industry standard of a minimum maintenance expenditure of 2% of RPV which resulted in a final target maintenance expenditure value equal to 2.4% of RPV.</p> <p>The FY 2010 Facility Condition Index (FCI) for Mission-Critical facilities exceeded the established metric of &lt;5% by 1.42%, resulting in a final target of 3.58%. However, the FCI for Mission-Dependent, Non-Critical facilities was 7.31%, which did not meet the established metric of &lt;7%. Sandia should monitor Maintenance expenditures to stay closer to the performance metric.</p> <p>The maintenance backlog is within the four to eight week target range at five weeks.</p>

			<p>Additionally, proactive maintenance fell slightly below the established metric of &gt;65%, at 64.2% for the fiscal year but Sandia has significantly increased proactive maintenance by 7.7% over the FY 2009 year-end result.</p>
<p><b>7.5.4</b> Sandia will continue to conduct quality site planning activities consistent with DOE O 430.1B and support integrated environmental planning. The Ten-Year Site Plan will be aligned with DOE/NNSA requirements and will meet requirements and NNSA guidance.</p>	Outstanding	Agree	<p>In addition to the activity Sandia performed in response to the NA-524 requirements, Sandia performed additional work to mesh the requirements of this organization with the often disparate requirements of an NA-16 data call that occurred late in the cycle and required immediate turnaround.</p> <p>Sandia has developed a comprehensive process for planning site development efforts across SNL, synthesizing an overall vision for SNL's technical areas, detailing facility requirements for NNSA as compared with those of other programs and users, and is moving to land use strategies that will benefit the Nuclear Security Enterprise (NSE).</p>
<p><b>7.5.5</b> Sandia Facilities will support mission objectives through sound line item project management practices as required by DOE Order 413.3A and address gaps in its Corporate EVMS.</p>	Very Good	Disagree Satisfactory	<p>Sandia's performance on the IBL Project has been exceptional. Key IBL project milestones were achieved in FY 2010 and significant risks were mitigated. The project is now positioned to finish early and under cost in FY 2011. The HSM Project Schedule Performance Index Cost Performance Index (SPI/CPI) data cumulative as of September 2010 is 0.97/0.92, respectively; this data has been corrected. The project is expected to be completed ahead of schedule and under cost in FY 2011. However, Sandia missed several Level II Milestones during FY 2010.</p> <p>Sandia had several months to complete EVMS process changes and to implement improvements to address gaps in Sandia's EVMS system. However, Sandia's late efforts resulted in a lost opportunity to demonstrate <i>implementation</i> of a fully functional and improved system. Sandia failed to deliver a series of monthly EVMS reports on line item projects in the third and fourth quarter of FY 2010 from improved processes. Therefore, the DOE OECM verification team will not have a track record of monthly earned value reporting to assess implementation. Gaps in EVMS implementation have been open for well over a year.</p>

<p><b>7.5.6</b> Sandia will meet the goals for authorized projects per the Program Plan for Projects &lt;\$5 million and will demonstrate improvements in process efficiency.</p>	<p>Very Good</p>	<p>Disagree Good</p>	<p>Sandia stated it accomplished a 100% success rate completing projects within the authorized baseline in FY 2010. However, the ILMS project reporting tool (with approximately forty projects &lt;\$5 million) indicates that the baselines on five of these projects have been changed four times. In addition, eight of the projects underwent a baseline change in the last quarter of FY 2010. The number and timing of baseline changes raises questions about the 100% success rate.</p> <p>All metrics to demonstrate improvement in project process efficiencies relate to schedule. Cost, quality, or productivity metrics are not trended to demonstrate efficiency. The value derived by tracking these schedule related metrics is not explained by Sandia. Conclusions and decisions based on positive and negative trends are also absent. Tracking the duration to obtain security approvals, project authorizations, and NEPA determinations is a myopic and unjustified approach to measure improvements in process efficiency.</p> <p>Sandia reporting in Baseline, Analysis, Reporting and Tracking Tool (BARTT) was poor due to limited access and network interfaces. In lieu of the network, Sandia used email and the input of accurate information proved to be a difficult task. It is essential that this data to be timely and accurate, as NNSA relies on this under the Contractor Assurance System (CAS). Despite the problems with BARTT, Sandia did get all required data to NNSA accurately and on time.</p> <p>Sandia performed well in the Facilities Infrastructure Recapitalization Program (FIRP) General Plant Project (GPP) execution of projects.</p>
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**Other Considerations**

Sandia Facilities Management and Operations Center (FMOC) has inconsistently implemented corrective actions identified in the HS-64 Finding C-2 CAP and attempted to close the finding despite evidence of unsatisfactory effectiveness detected by both Sandia and the Sandia Site Office (SSO). Due to the SSO rejection of the validation, Sandia has committed to additional improvement activities and the submission of a second validation to determine effectiveness during the first quarter of FY 2011. It is imperative that Sandia ensure implementation of all actions committed to and conduct a thorough validation to determine the effectiveness. The closure of this milestone by Sandia FMOC shall be contingent upon the fact that the second validation is determined to be successful; upon which the closure of the finding by SSO is also dependent.

The IBL construction phase ended recently after two years of construction. This project achieved a noteworthy ES&H record during its many project phases. There were zero recordable and lost-time injuries and one occurrence report submitted. This phase was accomplished by team effort, which included procurement, architecture and engineering firms, management, project management, Facility, Environment, Safety & Health (FESH), inspection, and individual contractors.

Sandia completed the East Avenue modification project to enable open access to Combustion Research Facility, in support of the Livermore Valley Open Campus (LVOC) plan.

Sandia's quality of evidence packages for closure of HS64 findings and Nevada National Security Site issues could be improved. SSO noted multiple submittals contained issues indicative of inconsistent quality review.

Sandia mission support towards safety has improved this year. Sandia developed a new electronic WP&C tool, which will aid commonality to line implementation. This tool, along with the improved WP&C training (over 1600 personnel trained so far) will promote continual WP&C improvements by line organizations. With respect to electrical safety, the Sandia Electrical Safety Advisor program continues to improve as more advisors are deployed at the line level. Sandia presence in the EFCOG and revisions to national electrical standards such as NFPA 70E continues to grow. Sandia worked diligently to meet LPS requirements to assess/upgrade systems and completed upgrades to the Manzano Storage Area. Balancing limited safety resources in support of mission needs has also improved. Sandia's limited Radiation Protection technicians provided critical support to the AHCF restart activities and the Pu ICE at Z-Machine while meeting other line organization radiation protection needs. Safety education at Sandia has improved this year with over 800 personnel receiving training on Human Performance. Furthermore, Sandia senior management continues to fully support engineered safety analysis similar to Z-Machine and is creating a framework of principles, requirements, and methodology for assured safe operations through engineered design. These improvements, along with Sandia's five-year trend of safety rate reductions, are considered very good.

## PO-8: Business System Performance Business Management (NA-10, NA-60) – Essential

Sandia will manage and operate its Business functions in an efficient and cost effective manner using the Integrated Laboratory Management System (ILMS) to fully support successful accomplishment of mission, while protecting the public, the worker, the environment, and national security assets in accordance with the terms and conditions of the contract. Business functions include Supply Chain, Finance, Human Resources, Information Technology, Cyber Security, and Legal Management.

**Adjectival Rating: OUTSTANDING**

### Summary of Performance

Sandia's overall performance in the area of Business System Performance Business Management is rated as "Outstanding" for FY 2010. Sound business practices are integrated into all work activities throughout Sandia to maintain effective and efficient operations and support mission objectives. Performance in the areas of Supply Chain, Contractor Human Resources (HR), Information Technology (IT), and Cyber Security were measured through negotiated performance objectives matrices developed for each of these programs, in conjunction with a subjective assessment of their overall Policy Area program performance. The Finance program was evaluated through objectives and measures established by the NNSA Chief Financial Officer (CFO). Sandia is to be commended for its Property/Fleet Management Programs as they continue to be recognized for outstanding performance as evidenced by their second recognition as one of "The 100 Best Fleets in North America". Sandia demonstrated enterprise-wide leadership with implementation of initiatives in HR, IT, and Cyber Security. Sandia's HR team retooled processes and doubled talent acquisition attempting to ensure the requisite workforce is in place to meet increased mission requirements. This was part of the implementation of a HR strategic roadmap for Sandia National Laboratory (SNL). In IT, Sandia developed data collection and repositories for both national crisis response and enterprise-wide initiatives. Cyber Security professionals conducted a complete review classified and unclassified security plans and controls to establish comprehensive picture of program health across its geographically separate facilities. Sandia exceeded the standard of performance by integrating sound business processes throughout its infrastructure in support of mission and other work activities.

### Significant Accomplishments

- Logistics obtained International Standards Organization (ISO) 9001 registration.
- Small Business Utilization Manager received the 2009 Minority Enterprise Development Small Business Advocate of the Year and the 2009 New Mexico Business Weekly Power Broker (October 2009).
- Fleet Services was selected (out of ~38,000 public fleets) as one of the top 100 fleets in "The 100 Best Fleets in North America" program meeting its Standards of Excellence for 2010.
- Continued to make critical improvements in its HR program and realized "Good" or better ratings in its critical performance measures. There was great emphasis, activity and accomplishment of acquiring talent, particularly given the anticipated attrition over the next year. Sandia also implemented a Workforce Planning and Control (WP&C) process to strategically and tactically approach their workforce needs.
- Created a single repository for Deepwater Horizon Gulf oil crisis records at the request of Dr. Hunter (former SNL President and Laboratories Director) and DOE Secretary Chu. This repository is in a searchable format that all other labs in supporting DOE's efforts accessed to support this critical national mission.
- Developed a requirements Oracle database to meet an emerging NSE requirement to support the NNSA Governance Initiative. This database now serves as the Enterprise solution for requirements analysis.
- Recognized throughout DOE and NNSA for its incident management capabilities in the areas of forensics, real-time analysis, remediation and response as to come to the assistance of other sites when needed.
- In order to ensure a comprehensive picture of program health across its facilities, Sandia Cyber Security performed 13 Classified and Unclassified Cyber Security self-assessments at SNL/NM, SNL/CA, Tonopah Test

Range (TTR), Kauai Test Facility (KTF), and Washington DC Office (WDCO), resulting in field assessments of 385 systems and the review of 29 Unclassified Cyber Security Authorization Agreements (CSAAs) and 19 Classified Cyber Security plans.

- Went above and beyond by offering a voluntary Cyber Security awareness event for general users in February 2010 that was attended by more than 1,200 people. This training was noteworthy both for the interactive nature of the presentation and the tailoring of the information presented around recent Sandia-specific Cyber Security incidents. This training was so valuable that the SSO staff used a DVD of the training to increase federal awareness.
- Active participant at and supportive of the NNSA Functional Data Call meeting and a participated in shaping the template. Sandia also updated the FY 2009 functional cost template, which was a major and time consuming undertaking with a significant investment of contractor staff.
- Integrated best industry practices from its parent company, Lockheed Martin (LM) to improve Sandia's operational efficiencies as evidenced by LM's ISO 18001 and Voluntary Protection Programs site certification guidance on optimizing the certification process and LM's guidance in seven key areas of business standard practices.
- Achieved initial scope corporate ISO 9001:2008 registration for its management system in November 2009.

**Opportunity for Improvement**

- There are concerns with Sandia's Purchase Card (P-Card) Program and lack of ownership for this high risk, high visibility program.
- Sandia subcontract terms and conditions are not being reviewed and updated in a timely manner when directives are updated. This could have long lasting, negative consequences for both Sandia and DOE/NNSA.
- Sandia Property was to complete a self-assessment in FY 2010 on Training Property Coordinators. However, Sandia informed NNSA SC they would not undertake the self-assessment due to focusing on completion of recommendations identified by the Contractor Assurance System (CAS) review team and activity associated with the closure of the machine shop. Sandia should address areas of potential risk in personal property management and then perform rigorous self-assessments of those areas.
- Ensuring accurate reporting of all Emergency Management (EM)/non-EM and ES&H liabilities. This has been an area of focus for external auditors and has produced previous findings.
- Need to address the CFO concerns in regards to the potential non-compliance with several Cost Accounting Standards issues for both existing and upcoming liabilities.
- Reconsider Sandia's level of participation in Enterprise-wide initiatives such as the Roof Asset Management Program, Enterprise Wireless, and the Supply Chain Management Center (SCMC).

**Performance Measure 8.1**

Sandia will operate its Supply Chain Management Program and Policy Area in an effective and efficient manner in accordance with applicable contract requirements.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
8.1.1 Performance will primarily be measured as stipulated in Supply Chain critical performance measures identified below and will be reported on a quarterly basis to ensure operations are within established control levels.	Outstanding	Disagree Very Good	Sandia Supply Chain achieved a rating of "Outstanding" in 18 of 19 of their objective matrix metrics. Although Sandia has done very well in most areas, there is room for improvement in the P-Card Program, Property-Vehicle Utilization, and the Completion of CAS Baseline Review items.





<p><b>8.1.1.8</b> Property: Address findings and/or recommendations identified in the FY 2009 Personal Property Management System CAS Baseline review</p>			<p><b>8.1.1.8:</b> To date, Sandia has addressed all 13 recommendations but the actions are in various states of completion, the majority remaining open.</p> <ul style="list-style-type: none"> <li>• <i>Property Manual and Tagging of Accountable Property</i> - documents are not yet finalized.</li> <li>• <i>Government Furnished Property with Subcontractors</i> - Funding was approved for the Lean Six Sigma (LSS) event in 2010, but due to scheduling conflicts, Sandia was not able to address all the identified areas.</li> <li>• <i>Leased Equipment Control</i> – Sandia was given until September 30, 2010 to correct any gaps in the procedural review but required an extension to complete the corrections by the end of the calendar year.</li> <li>• <i>Excess (Re-application) Operation</i> - Clean-up review and reapplication is pending.</li> <li>• <i>Precious Metals</i> – The Work Instruction are pending, and the process is yet to be verified.</li> <li>• <i>P-Card Procured Property</i> - The total number of P-Card holders continues to be of concern.</li> <li>• <i>Storage</i> - First Source Program has not yet been evaluated.</li> <li>• <i>Terminated Employee Property</i> - Not yet been evaluated.</li> <li>• <i>Equipment Held for Future Programs</i> – Closed.</li> <li>• <i>Walk-Through Program</i> – Closed.</li> <li>• <i>Transfers</i> – Closed.</li> <li>• <i>Internal Audits</i> - Sandia Property Management was scheduled to perform an internal self-assessment on training Property Coordinators in FY 2010. Sandia stated that due to the closure of the machine shop and responding to the CAS assessment recommendation they were not able to perform the self-assessment; therefore, DOE/NNSA was unable to conduct its scheduled Shadow assessment in FY 2010.</li> <li>• <i>Shipping</i> - Sandia’s shipping process was recognized by the CAS Team as a Best Practice.</li> <li>• <i>Fleet</i> - Sandia’s fleet system was recognized by the CAS Team as a Best Practice.</li> <li>• <i>Tagging</i> - NNSA Headquarters (HQ) is attempting to obtain a waiver from the DOE Accounting Handbook.</li> </ul>
<p><b>8.1.2</b> Sandia shall continue supporting all Supply Chain Management functions.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia was unable to get credit for savings or for holding events due to money being pulled and objections from the local small business community. Lessons learned from FY 2010 will be applied to FY 2011 for continued growth and</p>

<p><b>8.1.2.1</b> Increase their utilization of E-procurement tools, specifically those provided by the SCMC or resident equivalent tools.</p> <p><b>8.1.2.2</b> Provide personnel to actively participate and contributing to commodity teams.</p> <p><b>8.1.2.3</b> Increase the utilization of SCMC developed acquisition vehicles.</p> <p><b>8.1.2.4</b> Improve the percentage of procurement actions fulfilled without direct procurement action (i.e. “paperless contracting”).</p> <p><b>8.1.2.5</b> Enhance commodity demand management activities.</p> <p><b>8.1.2.6</b> Continue the development of enterprise-wide procurement training requirements and, at a minimum, provide one multi-site class.</p>			<p>support of SCMC functions. It is noted that Sandia led the human capital team for FY 2010 and all sites leveraged Sandia’s high quality procurement training courses.</p>
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**Performance Measure 8.2**

Sandia will operate its Finance program and Policy Area in an effective and efficient manner and in accordance with applicable contract requirements.

**NNSA Rating: Very Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p><b>8.2.1</b> Performance will primarily be measured through the NNSA OFFM’s Contractor Performance Measures and Rating Criteria. Performance results will be reported on a quarterly basis to ensure operations are within established control levels and in accordance with Federal requirements. Performance</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>The Office of Field Financial Management (OFFM) uses a three tier rating system: Good, Satisfactory, and Unsatisfactory. OFFM rated Sandia as “Satisfactory” in the first quarter and “Good” for the second through fourth quarter as well as “Good” overall. Although an overall “Good” rating was achieved, OFFM assessed a “fail” rating in Measure 6 for Environmental Management Liability Estimates. Sandia has continued to strengthen its controls over</p>

reports will be loaded into ILMS and available for SSO review two business days prior to scheduled JPRT meetings. Final ratings will be determined by SSO and will consider operational awareness and cooperation with, and timeliness of responses to SSO inquiries.			Environment Liability estimates through identification of POCs and application of the Model Code application. Additionally, while OFFM assessed a “pass” on Measure 8, there is still a concern and potential non-compliance with Cost Accounting Standards. It is a complicated issue with uncertain resolution. Sandia has engaged OFFM to resolve the CAS issues. A path forward and continuing communication will be the key to resolving this issue. See the OFFM FY 2010 Fourth Quarter Financial Performance Measure Report for complete details.
<p><b>8.2.2 Critical Financial</b> performance measures will be identified for each of the functional areas below and will be reported on a quarterly basis to ensure operations are within established control levels. Performance reports including evidentiary documentation will be loaded into ILMS and available for SSO review two business days prior to scheduled JPRT.</p> <p><b>8.2.2.1 Accounting Services</b>  <b>8.2.2.2 Payroll Services</b>  <b>8.2.2.3 Accounts Payable</b>  <b>8.2.2.4 Treasury &amp; Travel</b>  <b>8.2.2.5 Indirect Financial</b>  <b>8.2.2.6 WFO Partnerships</b></p>	Outstanding	Agree	SSO and Sandia met on a quarterly basis to discuss the performance of these measures. Sandia achieved a rating of “Outstanding” on all six of the sub-targets.

<b>Performance Measure 8.3</b>			
Sandia will operate its HR Program and Policy Area in an effective and efficient manner and in accordance with applicable contract requirements.			
<b>NNSA Rating: Very Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>8.3.1</b> Performance will be monitored by the FY 2010 HR critical performance measures and will be reported on a quarterly basis to ensure operations are within established control levels. Performance	Very Good	Agree	<p>Sandia scored well on the FY 2010 HR Line Oversight and Contractor Assurance System (LOCAS) measures and achieved nine “Outstanding” ratings, four “Very Good” ratings, and three “Good” ratings.</p> <p>Sandia reported that they hired 709 new employees into SNL compared to the goal of</p>

<p>reports including evidentiary documentation will be loaded into ILMS and available for SSO review two business days prior to scheduled JPRT meetings. Prompt action will be taken on any negative performance trends.</p> <p><b>8.3.1.1 Offer Acceptance Ratio.</b></p> <p><b>8.3.1.2 Lab-wide Effort in Training is Value-Added.</b></p> <p><b>8.3.1.3 Overall Company Satisfaction as measured by Full Spectrum Leadership Pulse Survey.</b></p> <p><b>8.3.1.4 Rolling Year-to-Year Growth Rate of Health Care Costs.</b></p> <p><b>8.3.1.5 Customer Satisfaction with HR &amp; Health Benefits and Employee Services (HBE).</b></p>		<p>hiring 699 personnel for the year. Typical recruitment is approximately 325 a year; however, with the unusual expected high attrition, Sandia wanted to ensure that a requisite workforce is in place to meet mission requirements. Sandia assessed their workforce needs via a newly developed Workforce Planning and Control process that took into consideration Sandia's anticipated work scope over a five-year period and a two-year tactical approach to filling occupational/skill voids.</p> <p>Sandia has been a leader throughout the NNSA in initiating changes to pension and benefit plans that will reduce the government's long-term liability and aligned their plans with market comparators.</p> <p><b>8.3.1.1:</b> Offer to Acceptance Ratio is at 90%.</p> <p><b>8.3.1.3:</b> Sandia's survey for <i>Overall Company Satisfaction</i> was measured at a rating of "Good". However, given Sandia's changes to the pension benefit, health care for current and retiree health and low compensation increases over the last two years.</p> <p><b>8.3.1.4:</b> Sandia has taken steps to address the rising cost of health care by initiating a consumer driven health care plan, changed from fully insured to self insurance, and will implement changes to retiree health for current employees effective January 1, 2012. This significant plan design change is expected to save the government money if health care costs continue to increase as they have by double digits over the last five years.</p> <p><b>8.3.1.5:</b> One could expect a poor response on this particular metric given changes to pension benefits, changes to retiree health, compensation increase plan funds of &lt; 2%, and workforce restructuring actions; however, Sandia's customer satisfaction survey for HR scored a "Very Good". This is a reflection of the confidence Sandia employees have in the HR organization.</p>
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<b>Performance Measure 8.4</b>			
Sandia will operate its IT Program and Policy Area in accordance with applicable contractual requirements. <b>NNSA Rating: Outstanding</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>SSO Agreement</b>	<b>Comments</b>
<p><b>8.4.1</b> Performance will be measured as stipulated in the FY 2010 IT critical performance measures identified below and detailed in the attachment and will be reported on a quarterly basis to ensure operations are within established control levels. Performance reports including evidentiary documentation will be loaded into ILMS and available for SSO review two business days prior to scheduled JPRT. Prompt action will be taken on any negative performance trends.</p>	Outstanding	Agree	<p>Sandia's IT performance measures consistently achieved outstanding thresholds in nine of eleven areas in FY 2010. Sandia ended the year with a rating of less than "Outstanding" in one area. That area was rated as "Very Good" based on overall quarterly performance. This area, "Maintain ISO Certification in Computing Support Organization", fell short in the last two quarters due to missed milestones although the recertification produced no findings. Recertification was achieved by the end of the fiscal year. IT performance reporting in ILMS improved significantly over the last two quarters.</p>
<p><b>8.4.2</b> Performance will be based on the results of validating Sandia's stated performance, compliance and cross-functional integration. Primary criteria used to assess contractor's performance includes maintaining a customer-focused IT environment that supports the NNSA mission and providing full lifecycle management of IT investments, per OMB Circular A-130, OMB Circular A-11 and DOE O 200.1A.</p>	Outstanding	Agree	<p>Sandia met Office of Management and Budget (OMB) requirements by timely response to data calls for reporting IT investments. Linkage problems for SSO users to access ILMS remained a problem throughout the year. Sandia made progress in completing the Virtual Desktop Interface (VDI) remote access to solve this federal/contractor interface problem. The VDI solution has been piloted and proven extremely successful. This approach is now being examined by other field sites as a Nuclear Security Enterprise (NSE) benchmark.</p> <p>Legacy infrastructure concerns were addressed this year with a Network Revitalization Initiative. Phase I was completed with optical network terminals installed in 13 buildings. Sandia's virtualization of servers to manage the computer footprint continued with the realized efficiencies and cost savings being recognized under the business performance incentive. Sandia's Blackberry Pilot, part of a larger site-wide wireless initiative, has expanded to nearly 600 employees carrying devices in the limited area. Major IT deployments this year included: PeopleSoft 9.0 (facilitating HR processes and</p>

			industry best practices), Windows 7 (supporting better and more secure operating system), 798 virtual desktop deployments (enabling the ability to “work anywhere”) and Mobile Expense Report Application Approval for Blackberry devices (effecting efficient work practices). Finally, Sandia recovered the computer infrastructure and electronic data from the closedown of the Yucca Mountain Project.
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**Performance Measure 8.5**

Execute an effective and efficient program for Cyber Security, operated in accordance with applicable Federal requirements, that balances confidentiality, integrity and availability of information and information systems to guard against unauthorized access, modification or denial.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>SSO Agreement</b>	<b>Comments</b>
<p><b>8.5.1</b> Sandia will provide SSO quarterly reports on performance results for the Cyber Security targets identified by this plan. Performance will be measured through a variety of means to include the established goals in the negotiated performance measures matrix for Cyber Security that demonstrate compliance with the following subtargets.</p> <p><b>8.5.1.1</b> Sandia ensures that managers, Cyber Security professionals, and users are made aware of the applicable requirements and security risks associated with their activities through the dissemination of Corporate Process Requirements and ensuring that organizational personnel are adequately trained to</p>	Outstanding	Agree	<p>Seven of eight metrics that support target 8.5.1 are rated as “Outstanding” for all of FY 2010. One metric was rated as “Good” for three of the four FY 2010 quarters and “Outstanding” in the remaining quarter. Sandia has developed nine new metrics for measuring Cyber Security performance that were piloted in the fourth quarter and will be considered for implementation in FY 2011. Two out of the three risk management weaknesses identified by SSO in the FY 2010 quarterly CAS assessments were addressed through updated risk documents posted in the ILMS during the fourth quarter. While some identified weaknesses with Cyber Security’s implementation of CAS procedures remain open, overall Sandia’s performance on this target and its related sub-targets was exceptional.</p> <p><b>8.5.1.1:</b> In FY 2010, 100% of managers and 99.94% of general users completed their required Cyber Security training and. However, Sandia went above and beyond the minimum required training by offering a voluntary Cyber Security awareness event for general users in February 2010 that was attended by more than 1,200 people. This training was noteworthy both for the interactive nature of the presentation and the tailoring of the information presented around recent Sandia-specific Cyber Security incidents. To keep Cyber Security awareness at a high level throughout the year, Sandia published a</p>

<p>carry out their assigned Cyber Security duties and responsibilities.</p> <p><b>8.5.1.2</b> Sandia must: (1) establish an operational incident handling capability for systems that includes adequate preparation, detection, analysis, containment, recovery, and user response activities; and (2) track, document and report incidents to appropriate organizational officials and/or authorities.</p> <p><b>8.5.1.3</b> Sandia must provide effective oversight of the tools, techniques, mechanisms, and personnel used to provide information system security, to include annual assessments of the effectiveness of implemented security controls on all systems.</p>			<p>continuous stream of 26 Cyber Security tips in a prominent location on its internal home page. Finally, Sandia offered 15 role-based Cyber Security training modules to ensure its Cyber Security Representatives, Information System Security Officers, and System Administrators have a common understanding of baseline protection requirements and Sandia's corporate procedures for dealing with various cyber security issues.</p> <p><b>8.5.1.2:</b> Sandia is recognized throughout DOE and NNSA for its incident management capabilities in the areas of forensics, real-time analysis, remediation and response and does not hesitate to come to the assistance of other sites when needed. One such example is the assistance Sandia provided to Lawrence Livermore National Laboratory (LLNL) in March 2010 when they learned of systems at LLNL having been compromised through a spear phishing attack. Sandia contacted LLNL and arranged to provide technical assistance in detecting the compromised systems as well as malware and protocol reverse engineering and data analysis to determine the full extent of damage. Sandia also continues to provide training on host and network based forensics and reverse engineering to incident responders from various NNSA sites and the Federal Bureau of Investigation in conjunction with its participation in the Cyber Tracer incident response exercises. Sandia documented its ongoing refinement of incident reporting procedures in a formalized Cyber Security Implementing Instruction to provide clear direction to all potential responders and ensure all cyber security incidents were reported within NNSA and DOE incident reporting time constraints.</p> <p><b>8.5.1.3:</b> Sandia made substantial progress in improving the quality of its Unclassified and Classified Cyber Security self-assessment program in FY 2010 by incorporating select Telecommunications Security topics and establishing procedures to verify the sustainability of previously implemented corrective actions. Sandia increased effectiveness by eliminating lower risk compliance items and dedicating more resources to the evaluation of critical security controls. In order to ensure a comprehensive</p>
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<p><b>8.5.1.4</b> Sandia regularly assesses all systems for vulnerabilities and performs timely maintenance to mitigate or eliminate new vulnerabilities as they are identified.</p>			<p>picture of program health across its facilities, Sandia Cyber Security performed 13 Classified and Unclassified Cyber Security self-assessments, resulting in field assessments of 385 systems, the review of 29 Unclassified Cyber Security Authorization Agreements (CSAAs) and 19 Classified Cyber Security plans. Sandia issued 13 findings and nine opportunities for improvement (OFIs). There has been a 38% decrease in findings and an 18% reduction in OFIs from FY 2009. However, more emphasis is needed on implementing the same level of rigor for Telecommunications Security self-assessments. This issue has been formally communicated to Sandia through SSO finding 10SEP30-SSO-501-SSPS-CSEC.7-001.</p> <p><b>8.5.1.4:</b> On average, Sandia scanned 96% of its network assets for vulnerabilities in FY 2010, well above the 85% threshold for an “Outstanding” rating on this metric. Sandia identified two high-risk vulnerabilities on its systems this year, and both were successfully remediated within four hours, which exceeds the threshold for outstanding on this metric.</p>
<p><b>8.5.2</b> Sandia must (a) meet all SSO approved Corrective Action Plan and FY 2010 Cyber Security Annual Operating Plan milestones; and (b) perform trend analysis of negative indicators from the Cyber Security performance measures matrix and take appropriate remediation actions.</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>Sandia successfully completed all milestones identified in its 2010 Cyber Security Annual Operating Procedures (AOP). In addition, Cyber Security made good progress in FY 2010 on corrective actions by closing 37 corrective action plans, plans of action and milestones, and OFIs. Sandia also corrected an issue identified by SSO regarding inaccurate metric information reported on the number of incidents involving classified e-mails or documents on unclassified systems. This metric measures one of the areas at Sandia with which the DOE Office of Enforcement has expressed concern. The revised metric information now indicates that an upward trend in these incidents from 2008 and 2009 has been reversed in 2010. However, there is insufficient evidence at this time that the downward trend isn't a temporary fluctuation or that the decline in incidents involving classified e-mails or documents on unclassified systems can be correlated to the corporate actions taken by Sandia to date. Furthermore, the fact that Sandia did not self-identify that inaccurate data was being reported for this Cyber Security metric suggests their analysis of the data was not as thorough as it needed to be.</p>



**Performance Measure 8.6**

Legal Management: Sandia will effectively implement an NNSA-approved Legal Management Plan that complies with 10CFR719 and Clause I-91, Insurance—Litigation and Claims, DEAR 970.5228-1, (MARCH 2002).

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
<p><b>8.6.1</b> Sandia's Legal Management Plan will incorporate internal controls and best practices and procedures designed to demonstrate continuous improvement in the control and reduction of all legal costs, including outside counsel fees and costs associated with litigation and non-litigation legal services, and costs such as judgments, awards, and settlements. Sandia will comply with 10CFR719's deviation procedures for best practices that deviate from 10CFR719.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia is to be commended for the Legal Division's increasing focus on providing training to Sandia management on legal issues related to management of employees. Utilizing in-house resources, rather than contracting with high-cost outside law firms or corporate trainers, the Legal Division provided an impressive body of training on topics designed to heighten management awareness of legal pitfalls associated with management of human resources, e.g., <i>E-mail: The Legal Perspective; Human Resources and Legal, Partnership to Best Practices; Impact of Revised FMLA Regulation &amp; ADAA; Litigation Process &amp; the HR Professional; Medical Restrictions: Do's &amp; Don'ts; New Manager's Legal Briefing—Managing Employees to Minimize Legal Risk; and Preventing Harassment in the Workplace.</i></p> <p>Employment and labor-related litigation currently represents the highest risk area for litigation associated with the operation of SNL. While it may not be possible, at least at this point, to conclude definitively that such targeted training has resulted in lower levels of employment litigation and related costs, the data suggest a positive correlation warranting continued monitoring, analysis, and evaluation of training effectiveness.</p> <p>The Senior Attorney for Sandia's Legal Litigation Management Center provided a litigation review briefing to the Sandia Board of Directors, addressing the following: (1) data on number of litigation cases and associated costs, including outside counsel costs and costs of settlements; (2) cost allowability issues/impact on fee; (3) HR policy revisions to mitigate legal risk; (4) training targeted to mitigate legal risk; (5) litigation lessons learned process; and (6) status of pending litigation. Sandia is to be commended for (1) recognizing the need to sustain heightened management awareness of the legal risks inherent in the management of human</p>

			resources, and (2) apprising the Board of NNSA/SSO's concerns and Sandia's responsive actions.
<b>8.6.2</b> Sandia will modify its Legal Management Plan from time to time in order to ensure the conduct of litigation and management of non-litigation legal matters serves broader NNSA and Sandia interests. Sandia will submit any revised Plan to SSO Site Counsel for review and approval.	Outstanding	Agree	Sandia's proposed revisions to the Legal Management Plan were timely submitted and are being reviewed by Site Counsel and the Contracting Officer, in consultation with the NNSA General Counsel.

**Performance Measure 8.7**

Ensure accurate and timely ARRA reporting and administration.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>SSO Agreement</b>	<b>Comments</b>
<b>8.7.1</b> Provide adequate oversight of ARRA funded work to ensure individual project objectives are achieved and are in accordance with applicable laws, regulations, internal guidance, and reporting requirements.	Outstanding	Agree	Sandia managed 62 ARRA projects and ensured timely, accurate reporting compliance for nearly \$60 million in funding. Of the 62, Sandia had 52 projects as the prime recipient of the funding, totaling \$51 million. Sandia was a sub-recipient of \$9 million of the funding. Sandia's development and execution of ARRA Project Management system, using Work Authorization System (DOE O 412.1A), underpinned their successful management as they utilized existing processes to ensure contractual compliance. The Sandia initial reporting was benchmarked by other sites for its clear, cogent, and complete format.

**Performance Measure 8.8**

Continue to improve implementation, use, communication, and assurance results from the ILMS/CAS in accordance with Clause H-3 "Contractor Assurance System," and Clause H-5 "Accountability" of the contract.

**NNSA Rating: Very Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>8.8.1</b> On a quarterly basis, Policy Areas will assess a risk-based selection of requirements from Appendix G DOE Directives. The assessment will address	Very Good	Agree	The risk-based selection of requirements was drawn from the requirements mapping for Performance Target 8.8.2. Each Policy Area assessed requirements of highest importance or higher risk to them. Policy Areas also used Performance Measures to monitor risks.

<p>line implementation of the Policy Process or Procedures that implement the requirements that are associated with the selected directives and compliance with the Appendix G directive requirements.</p>			<p>Sandia conducted an assessment to document achievement of the target. All nine Policy Areas effectively flow down requirements and assess implementation of the selected higher-risk directives, but do so with a variety of methods, tools, detail, and rigor.</p>
<p><b>8.8.2</b> Establish documented linkages between Sandia Policy, Processes, and Procedures (PPP) and individual Appendix G requirements. Using the SSO Federal Oversight Requirements Spreadsheet (FORS) as a baseline, in FY 2010 implement this for the plan provided on December 19, 2008 to SSO for FY 2010, and beyond, to document linkage for the remaining requirements and Policy Areas. The plan includes the approach for updating the linkages for new or revised Appendix G directives. Where Sandia is unable to find evidence of PPP or implementation of a requirement, determine what is required to implement the requirement and prepare separate plans that include implementation schedules.</p>	<p>Very Good</p>	<p>Agree</p>	<p>The crosswalk of the FORS to the implementing Sandia documents and procedures was successfully completed.</p> <p>In FY 2009, Sandia mapped portions of Integrated Surety System (ISS) and Environment, Safety and Health (ES&amp;H) Policy Area requirements, and several orders specific to nuclear facility operations.</p> <p>The FY 2010 effort included the remaining requirements of ISS and ES&amp;H, and all the other Policy Areas (Corporate Governance, Facilities, Finance, HR, IT, Mission Execution, and Supply Chain Management).</p> <p>In addition, all Policy Areas conducted gap analyses to evaluate whether all requirements were documented in Sandia Corporate Policy System documents. The gap analyses indicated gaps in Corporate Governance specific to DOE O 414.1C.</p> <p>Sandia has discussed Corrective Actions with their SSO counterpart. In light of impending contractual changes (replacement of DOE O 414.1C with ISO 9001:2008), there was no need for specific corrective action relative to DOE O 414.1C.</p>
<p><b>8.8.3</b> Deleted through Rev 3.</p>	<p>Very Good</p>	<p>N/A</p>	
<p><b>8.8.4</b> Ensure quarterly Laboratory Transformation Leadership Council assurance briefings by Sandia Assurance Review Board (SARB) capture the "so what" by documenting management decisions, expectations, etc., that resulted from review and discussion of institutional</p>	<p>Very Good</p>	<p>Agree</p>	<p>A new Executive Management Review (EMR) process was established during the second quarter of FY 2010 at the direction of the Sandia's Director A tabletop review of the new EMR was conducted on March 3, 2010 and the EMR of second quarter data occurred in June 2010. SSO Management is invited to all EMRs and other management reviews where Sandia Management decisions are captured in the EMR minutes.</p> <p>The new EMR process affected lower level management reviews and precipitated the need for</p>

<p>cross-cutting assurance data that are intended to drive continuous improvement so that results and path forward are transparent to SSO.</p>			<p>additional analysis at the lower levels. Formerly, the Sandia Assurance Review Board (SARB) sub-team leaders analyzed the Management Assurance Reports to identify critical topics and trends for escalation to Executive Management. This responsibility has been transferred to the appropriate Vice Presidents who are more involved and are held accountable for the information. The nature of the Management Reviews is now focused on mission success.</p> <p>Lower level management groups are developing a strategy for local management reviews that feed up to the EMR and report on the state of SMUs, Divisions, and Policy Areas.</p> <p>In parallel, the SARB was disbanded in March 2010. Sandia Vice Presidents now conduct the analysis and trending that SARB had conducted previously.</p>
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**Other Considerations**

The Corporate Governance Policy Area has continued to manage its risks. The Management Reviews for Corporate Governance are being conducted and continue to improve. The Management Reviews cover all assurance topics and the reviews are documented in Management Assurance Reports. Through the Joint Performance Assurance Improvement Team (JPAIT), the Corporate Governance Policy Area and the SSO have reached agreement on a set of performance measures and milestones that will be placed under change control and used to evaluate Sandia's performance, in conjunction with other measures that are broader in nature.

## PERFORMANCE INCENTIVES

### PI-1: NNSA Mission - Stretch

Achieve stretch goals described in the performance targets below to increase Sandia's effectiveness as a leading contributor to the success of the Nuclear Security Enterprise. Evaluation of the stretch goals in this section will consider the availability of sufficient funding needed to complete such additional work.

**Adjectival Rating: OUTSTANDING**

#### Summary of Performance

Sandia's overall performance in achieving the stretch goals relating to the NNSA Mission is rated as "Outstanding" in FY 2010 as Sandia has increased their effectiveness as a leading contributor to the success of the Nuclear Security Enterprise (NSE).

#### Significant Accomplishments

- Enhanced technical maturation of Reentry Vehicle/Reentry Body (RV/RB) design in support of the future W78 Life Extension Program (LEP) and W88 Alternate (ALT).
- Developing surety mechanisms and firing set technology that will support the B61 LEP and W78 LEP and W88 ALT.
- Accelerated progress on the Electronic Neutron Generator (ELNG) will support the B61 LEP as well as the B83 neutron generator (NG) replacement to meet increased schedule demands.
- Excellent progress on the Small Ferro-Electric Neutron Generator (SFENG), which will support the W87, W80 and W88 NG programs.
- Supported the B83 Gas Transfer System (GTS) program planning from B83 Stockpile Systems and completed the preliminary options recommendations.
- Completed the comprehensive Enhanced Surveillance Annual Report, approximately four months ahead of the March 31, 2010 schedule.

#### Opportunity for Improvement

A baseline for the nuclear weapons (NW) lab space needs to be accomplished.

#### Performance Measure 1.1

Exceed the PO-1 Level II Milestones to focus on the development and maintenance of the science and engineering capabilities, facilities, and associated infrastructure needed to contribute to a flexible and responsive NSE.

**NNSA Rating: Good**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
1.1.1 Develop a methodology to validate and assess current utilization of laboratory and storage space, and establish a baseline. This information will be used to support future utilization improvement initiatives for laboratories	Outstanding	Disagree Satisfactory	Sandia's initiatives in improving space utilization lab wide were initiated in FY 2008. NW office space utilization was improved by 12% in FY 2009 and FY 2010. Sandia's Monitoring Systems Division substantially improved their laboratory space efficiency by 17% in FY 2009. Sandia's Energy, Security and Defense Technologies Division baselined their current space and developed a plan to improve the lab space

and storage spaces within the nuclear weapons Strategic Management Group (SMG).			efficiency in FY 2011. However, the FY 2010 stretch goal to establish a baseline for the NW lab and storage space was not accomplished. The benefits and efforts realized over the years from the Division 5700 and Division 6000 lab space utilization improvement activities will be applied to help Sandia improve utilization of NW Lab space in FY 2011 and beyond.
<b>1.1.2</b> Predict the aerodynamic performance of a full-scale stockpile gravity bomb with Aria.	Very Good	Agree	
<b>1.1.3</b> Perform first 25-keV X-ray backlighting experiment on the refurbished Z-Machine.	Not Scored, deleted from Alternate PEP	Not Rated	Deleted from the Alternate PEP but incorporated into ICF Milestone 3684.
<b>1.1.4</b> Perform the first structure flyer experiment on Z-Machine.	Outstanding	Agree	

**Performance Measure 1.2**

Exceed the PO-2 Level II Milestones pertaining to the maintenance of the existing stockpile while supporting stockpile surveillance transformation, and to the development and application of modern production capabilities and capacity for weapons refurbishment or development projects, as described in the target(s) below.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>1.2.1</b> Integrate Sandia's technology maturation activities and roadmaps across DSW and Engineering Campaigns to support readiness for future insertion opportunities.	Outstanding	Agree	Using the re-entry systems transformation vehicle, Sandia enhanced technical maturation of RV/RB design in support of the future W78 LEP and W88 ALT. Microelectronic devices are in development that will enable faster application deployment and reduce program risk of Arming, Fuzing & Firing (AF&F) for the B61 LEP and W78 LEP and W88 ALT. Sandia is developing surety mechanisms and firing set technology that will support the B61 LEP and W78 LEP and W88 ALT. The Surety Campaign is developing surety sensor technology to the Technology Readiness Level (TRL) 5 level that will support the B61 LEP. The ELNG development effort achieved TRL 5, which will support the B61 LEP as well as the B83 NG replacement initiative. The SFENG in development will support the W87, W80 and W88 NG programs.
<b>1.2.2</b> With Federal Program Manager approval, implement Lean Six Sigma (LSS) methodology	Outstanding	Agree	Sandia applied LSS processes and methodologies to three new Joint Test Assembly (JTA) Power sources, (MC4765, MC4082A, and MC4707) to achieve increased efficiency, eliminate non-value

on at least one new product.			added work and shorten cycle-times. The first application was a LSS event held with the Power Sources organization focused on identifying contributors to the long lead times required for procurement of ambient battery JTA power supplies. The LSS event resulted in better understanding of the overall procurement process and the specific activities that drive long lead times; opportunities to shorten the lead time and risks associated with potential changes and trade-offs in the overall process were identified.
<b>1.2.3</b> With Federal Program Manager approval, accomplish validated but unfunded FY 2009 work scope from the DSW site-specific stretch goals list or other emerging issues work scope. These site-specific deliverables are negotiated with the DSW federal Program Manager to address FY 2010 emerging issues and critical success factors that are not contained in the DSW base program.	Outstanding	Agree	Sandia responded to the request to support the initiative of exploring a potential Phase 1 for the W78. Sandia completed a 90-day W78/W88 AF&F study requested by NNSA and the DoD. Sandia conducted a Command and Control (C2) Study that evaluated advanced Aircraft Monitor and Control (AMAC) concepts and presented the results to the U.S. Air Force and to NNSA. Sandia started an initiative to examine the relative security risks associated with a variety of weapon venues, in different configurations called the Integrated Lifecycle Surety (ILS). Finally, Sandia supported the B83 GTS program planning from B83 Stockpile Systems and completed the preliminary options recommendations with no funding.
<b>1.2.4</b> Demonstrate leadership and improved management of enhanced surveillance activities by completing an FY 2009 Engineering Sciences Center (ESC) site annual report per approved guidance prior to March 31, 2010, that includes key stockpile aging issues and potential impacts on material and component lifetimes.	Outstanding	Agree	Sandia completed the comprehensive Enhanced Surveillance Annual Report, approximately four months ahead of the March 31, 2010 deliverable. Sandia sent encrypted CDs containing the 2009 Sandia Annual Report to NNSA on December 3, 2009.

**Performance Measure 1.3**

Increase effectiveness and transparency of Integrated Laboratory Management System (ILMS) focusing on WFO Management Assurance.

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
<b>1.3.1</b> NSTS SMG and SMU management assurance	Outstanding	Agree	SSO access to project quad charts and management assurance reports within ILMS was

<p>information updated at least quarterly and available for SSO review within ILMS and SNL Performance Assurance System. Inform SSO of relevant issues and accomplishments impacting key programs and projects. Identify opportunities for SSO to observe major project reviews, tests and demonstrations.</p>			<p>significantly increased following each quarterly Management Review Level 3 (MR3). In addition, Sandia ensured that SSO was aware of the following:</p> <ul style="list-style-type: none"> <li>• SMU and Division MR 3 and 4 summary status slides were available within ILMS.</li> <li>• Key WFO projects were briefed at MR3 meetings and quad charts were available within ILMS.</li> <li>• Mission Execution Management Assurance Graded Approach was developed and “piloted”.</li> </ul> <p>SSO was invited to monthly meetings and more often updated on issues, successes, performance, ILMS/ Contractor Assurance System (CAS), SMU and Division processes, operational and business strategies, WFO sponsor initiatives and other WFO developments.</p>
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<b>Other Considerations</b>
None



## PI-2: Quality Assurance - Stretch

Sandia must demonstrate by documented objective evidence that the Quality Management Systems (QMS) meet applicable quality requirements. (QC-1 DOE Order 414.1C, Quality Assurance). A focus on quality performance is the main highlight of this performance objective and will be demonstrated through a collection of objective measures.

**Adjectival Rating: GOOD**

### Summary of Performance

Sandia's overall performance in achieving the stretch goals in the area of Quality Assurance (QA) (nuclear weapons and non-weapons) is rated as "Good" for FY 2010.

Sandia shipped over 20,000 parts in FY 2010 with four escapes. Senior Sandia Management understands the Weapons Quality issues. They have a path forward to address these issues and have developed performance measures in order to monitor their progress. There was meaningful progress on issues raised by way of improved Quality Assurance Survey (QAS) responses. These thorough responses set the stage for reduced issues in the future and developed a path forward toward prevention. Although many product and process issues occurred this fiscal year, there is a noticeable change in the Sandia Nuclear Weapons (NW) management approach and understanding of the quality issues that surfaced. There were numerous discussions with Sandia management that demonstrated this approach as the quality issue was recognized quickly and early in the discussion. This allowed actions to be appropriately taken to address those issues thoroughly thus providing high confidence that the solutions would be effective.

In the area on non-weapons QA, Sandia did complete the translation of the DOE O 414.1C QA requirements into their documentation of the Policy Areas and did complete those assigned assessments of those Policy Areas. For the most part, QA issues were handled satisfactorily. Late in the year, Sandia completed a quality awareness survey that provided insight for programmatic improvements. Sandia is encouraged to increase attention on determining the adequacy and improvement of QA across all work at Sandia

### Significant Accomplishments

In the Sandia NW organization, there was an improved restructure completed by adding an NW QA Subject Matter Expert (SME) to report to the Sandia 2000 Vice President (VP)/Chief Engineer. This enhancement was crucial for the Sandia 2000 Vice President (VP) in better understanding and providing those actions relative to overall NW QA and associated product issues. In addition, the Sandia Organization 2000 interface with the SSO Weapons QA Manager was improved with effective discussions related to: 1) Sandia design and production for both internal and external production, 2) Sandia design activities at the Kansas City Plant (KCP), and 3) qualification activities at the Pantex Plant. Throughout the year, there was outstanding discussion on NW QA areas to improve and QA areas that were doing well. Those discussions have made better the overall technical and quality understanding than witnessed in previous years. Sandia shipped over 20,000 parts in FY 2010, slightly lower than the number of parts shipped in FY 2009. Sandia continues to enhance and provide better awareness of the Suspect/Counterfeit Items (S/CIs) program as managed from their procurement organization. There continues to be outstanding synergy between the Sandia QA management, SMEs (non-weapons expertise) and the SSO QA Team.

### Opportunity for Improvement

Weapons Opportunity for Improvement (OFI) is focused on developing a prevention approach to reducing design and manufacturing issues in the future. In addition, there is a repeating concern with two examples (MC4682 and Pantex Tooling) related to Sandia's supplier management practices resulting in scrap, screening and rework. Sandia should review the effectiveness of their supplier management solutions implemented in FY 2008.

Non-weapons OFI revolve around the path forward for expedient implementation of the QA ISO 9001:2008 standard. In oversight of QA, Sandia is slow to perform assessments and/or to monitor performance measures to provide necessary awareness of QA implementation of the requirements. It is imperative that Sandia embrace these opportunities to not only measure status of implementation of requirements, but also to improve existing mechanisms or processes to better gauge the QA program. It would benefit the overall QA program if Sandia becomes more proactive with measuring the "effectiveness" of QA implementation for the organization.

**Performance Measure 2.1**

Execute an effective NW quality management program in accordance with Weapon Quality Policy, QC-1 that incorporates prevention of [both] weapon product defects and recurring quality deficiencies.

**NNSA Rating: Good**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
<p><b>2.1.1</b> Provide objective evidence of improvement in effective management of the NW QMS.</p> <p><b>2.1.1.1</b> Improve processes within the NW QMS. Evidence and documentation of improvements made.</p> <p><b>2.1.1.2</b> Develop and deploy a process to accept and respond to results of QASs, escapes, IG audits, OE investigations, and other DOE assessments/audits related to NWQ. Sandia</p>	<p>Very Good</p>	<p>Disagree Good</p>	<p><b>2.1.1.1:</b> Although there were improvements to the QMS, several improvement ideas have not yet been or are very slow to be implemented, e.g., the necessary revised set of Realize Product Procedures (RPPs).</p> <p>Furthermore, implementing preventive processes to reduce inspecting in quality has been very slow to implement thus often causing quality issues to be detected late in the product realization process.</p> <p>In addition, there were serious issues (MC4682 and Pantex Tooling) with supplier management involving two suppliers, which resulted in scrap, screening, and rework problems caused by inattention to quality detail. This clearly indicates that current supplier management practices need immediate attention and improvements. In addition, although there was supplier management issues this fiscal year overall scrap costs were reduced compared with previous years.</p>

<p>will implement this process in the second quarter of FY 2010.</p> <p><b>2.1.1.3</b> Reduce product and process quality issues, including reliance upon pre-acceptance activities and processes, by using preventive independent assessments and self-assessments to identify quality issues throughout the product lifecycle, including design, pre-production, and production.</p>			
<p><b>2.1.2</b> Provide objective evidence of overall improvement in NW quality, especially using the metric listed below:</p> <p><b>2.1.2.1</b> Illustrate implementation of the mutually agreed upon process for accepting and responding to results from QASs and escapes.</p> <p><b>2.1.2.2</b> Improve relative to FY 2009 the rate of first time acceptances by SSO of Sandia responses to QASs and escapes.</p> <p><b>2.1.2.3</b> Reduce the rate of occurrence of repeat findings for all QAS's (QAS Levels 1-4) taken together, compared to the FY 2009 baseline rates of one repeat finding from six QAS's.</p> <p><b>2.1.2.4</b> Achieve a Sandia product submittal to NNSA: SSO Quality Assurance Inspection Procedures (QAIP) acceptance rate of 93% to</p>	<p>Good</p>	<p>Agree</p>	<p><b>2.1.2.1:</b> Achieved 100% implementation.</p> <p><b>2.1.2.3:</b> Two quality findings reoccurred, with a FY 2010 goal of no greater than one finding.</p>

<p>obtain a Satisfactory rating for this target. The percentage rating is based on QAIPs rejected divided by total number of QAIPs completed.</p> <p><b>2.1.2.5</b> Limit the total escapes for FY 2010 to &lt;four, with a goal = zero escapes in FY 2010. Escapes that are identified as having a cause that could not have been precluded in the Product Realization and assurance processes will not be counted. Escapes are defined as products that have to be screened or evaluated after product acceptance due to suspected quality problems.</p>			<p><b>2.1.2.5:</b> A fourth escape occurred in late September 2010 related to the MC4682 capacitor. In addition, the severity and impact of one of the three Sandia reported escapes dealing with Sandia fabricated tooling for Pantex impacted both the DoD and NNSA customers financially.</p>
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**Performance Measure 2.2**

Continue to improve implementation and performance in non-weapons quality in accordance with DOE O 414.1C "Quality Assurance".

**NNSA Rating: Very Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p><b>2.2.1</b> Complete any remaining translation of the DOE QA requirements into the SNL documentation of the assigned Policy Areas and verify that all requirements are addressed.</p>	<p>Outstanding</p>	<p>Agree</p>	
<p><b>2.2.2</b> Ensure Policy Areas monitor performance measures or perform assessments of line organizations throughout the year to confirm execution of QA requirements. Results will be reported quarterly.</p>	<p>Good</p>	<p>Agree</p>	
<p><b>2.2.3</b> Establish baseline measure of familiarity of</p>	<p>Very Good</p>	<p>Agree</p>	

<p>QA requirements among SNL members of the workforce (MOW) through a survey of MOWs, and develop an action plan to improve line understanding and implementation of QA requirements.</p>			
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<p><b>Other Considerations</b></p>
<p>None</p>

### PI-3: Removal of Materials from Sandia National Laboratories - Stretch

Sandia will safely and efficiently remove nuclear material from the site.

**Adjectival Rating: VERY GOOD**

#### Summary of Performance

Sandia's overall performance in achieving the stretch goals of Removal of Materials from SNL is rated as "Very Good" for FY 2010. Sandia has performed well in preparing no defined use (NDU) nuclear material for disposition, and in removing explosives. Sandia's collaboration with external organizations resulted in the achievement of numerous disposition goals and Sandia's diligence has resulted in exceeding some of the targets within this objective. SSO and Sandia worked together to acquire FY 2010 DOE/ Environmental Management (EM) funding to prepare Lovelace Respiratory Research Institute (LRRRI) transuranic (TRU) waste for off-site shipment. The funding was received in the fourth quarter of FY 2010, which delayed third quarter activities and impacted performance targets in this performance incentive. While Sandia acknowledges and remains accountable for delays in TRU waste removal, several of the issues were outside of Sandia's control (e.g., Waste Isolation Pilot Plant (WIPP) small site procedures, Idaho National Laboratory (INL) requirements, DOE/EM funding, etc.).

#### Significant Accomplishments

- Significant progress made working with the State of New Mexico, SSO and other DOE sites (WIPP and INL) to ship TRU waste from SNL, including the startup of two new nuclear activities (operational readiness review (ORR) readiness preparations for Hazard Category 3 (HC3) Onsite Transportation and Auxiliary Hot Cell Facility (AHCF)).
- Using an integrated project approach, with Sandia Senior Management involvement, Sandia continues to aggressively drive the schedule to meet the first TRU shipping date of December 2010, which is a Sandia Site Treatment Plan milestone with the state of New Mexico.
- Partnered with SSO to receive ARRA funding to remediate TRU waste drums associated with the cleanup of an EM site on Kirtland Air Force Base (KAFB). As a result, Sandia National Laboratory (SNL) was chosen as one of eight small quantity sites to remove all TRU waste from the site by September 2011.
- Orchestrated the removal of 224 Co-60 source pins from the Gamma Irradiation Facility (GIF) in a continuing effort to reduce the quantities of hazardous materials at Sandia, which is the first step toward downgrading GIF to radiological facility.
- Worked closely with officials at KAFB and other regional AFBs to accept energetic material, resulting in over 75,000 pounds of rocket motors, explosives, etc. removed from Sandia.
- Exceptional progress preparing NDU material for removal from site. The acquisition of recently certified Type A shipping containers will complete the process in FY 2011.
- Partnered with Los Alamos National Laboratory (LANL) to take over the disposal of the plutonium-Isentropic Compression Experiments (Pu-ICE) residue resulting in progress toward shipment of the material offsite.

#### Opportunity for Improvement

Sandia did not achieve the goal of shipping the TRU waste in FY 2010. Although significant progress has been made to reach this goal, many challenges remain and new challenges continue to appear. Most recently, concern was raised about the radiological hazards associated with LRRRI TRU waste SNL/New Mexico (NM) has been storing for several years. The requirement to remediate these drums was established in January 2010 resulting from Real Time Radiography; however, the presence of the materials and hazards associated with these drums has been known by SNL/NM for years. Sandia should have identified the hazards and the appropriate facility in which to conduct this work earlier in the project. Additionally, Sandia should have been able to identify and request funding for this work in the 2008/2009 timeframe, thus avoiding delays in preparing the TRU waste for shipment.

<b>Performance Measure 3.1</b>			
Sandia will safely and efficiently remove nuclear NDU materials from the site.			
<b>NNSA Rating: Outstanding</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>3.1.1</b> Sandia will coordinate NDU material removal with a prioritization being focused on TRU waste.	Outstanding	Agree	Sandia made all preparations in anticipation of a new certified Type A shipping container. These preparations will support successful shipment early in FY 2011.
<b>3.1.2</b> Sandia will complete removal of the Highly Enriched Uranium Scrap by end of September 2010.	Outstanding	Disagree Very Good	<p>Sandia made all preparations in anticipation of a new certified Type A shipping container. These included pre-packaging highly enriched uranium scrap into individual shipment quantities, ready for placement into the Type A container. The Type A containers did not become available until August 2010, and their cost exceeded the amount Sandia had budgeted for this incentive item. Sandia elected to postpone the procurement of the Type A containers into FY 2011.</p> <p>Sandia did ship eight containers of enriched uranium this fiscal year. This material consisted of small pieces of sodium bonded fuel. Sandia safely removed the sodium component and packaged the items in Department of Transportation compliant containers that were shipped to the Nevada National Security Site.</p>

<b>Performance Measure 3.2</b>			
Sandia will safely and efficiently process and stage the TRU waste for removal in accordance with the TRU Waste Repackaging Plan.			
<b>NNSA Rating: Satisfactory</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>3.2.1</b> Sandia will complete repackaging of mixed TRU waste (excluding sealed sources) by end of May 2010, in preparation for shipment off site by end of September 2010.	Outstanding	Satisfactory	<p>Sandia did not complete the repackaging of all the mixed TRU waste in FY 2010. The Site Treatment Plan milestone with the State of New Mexico requires the mixed TRU waste be offsite by the end of calendar year 2010. Some of the delays with repackaging were beyond Sandia's control (e.g., WIPP procedures, INL requirements, DOE/EM funding, etc.).</p> <p>Other delays were due to issues that were not addressed in a timely manner. Sandia was slow to acknowledge the hazards associated with, and identify an appropriate facility to conduct</p>

			<p>repackaging work for, remediating a number of TRU waste drums associated with the cleanup of an EM site on KAFB.</p> <p>As of September 2010, the WIPP projected that the first TRU waste shipment from Sandia would take place in December 2010. Sandia repackaging activities have focused on achieving this date, but a number of issues need to be resolved to complete the offsite shipment.</p> <p>Sandia did make significant progress starting up two new nuclear activities (HC3 Onsite Transportation and AHCF) which helped support this target, but additional work is necessary to achieve this target's goal.</p>
<p><b>3.2.2</b> Sandia will complete packaging and preparations to facilitate one shipment of TRU waste from the site by end of September 2010.</p>	Outstanding	Satisfactory	<p>Sandia did not complete repackaging or shipment of TRU waste in FY 2010. Some of the delays with repackaging and shipment were beyond Sandia's control (e.g., WIPP small site procedures, INL requirements, DOE/EM funding, etc.). The Site Treatment Plan milestone with the State of New Mexico requires the mixed TRU waste be offsite by the end of calendar year 2010. As of September 2010, the WIPP projected that the first TRU waste shipment from Sandia would take place in December of 2010.</p> <p>Other delays were due to issues that were not addressed in a timely manner. Sandia was slow to acknowledge the hazards associated with, and identify an appropriate facility to conduct repackaging work for, remediating a number of TRU waste drums associated with the cleanup of an EM site on KAFB.</p>

<b>Performance Measure 3.3</b>			
Sandia will effectively develop a disposal path for the Pu-ICE experiments.			
<b>NNSA Rating: Outstanding</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p><b>3.3.1</b> Sandia will work LANL to ship the post-shot material currently at Sandia by the end of September 2010.</p>	Outstanding	Agree	<p>Sandia effectively partnered with LANL to take ownership of the disposal of the Pu-ICE experiments resulting in significant progress toward shipment of the material offsite. Shipment of these items offsite was dictated by factors beyond Sandia's control, but Sandia's efforts have resulted in the establishment of a clear disposition path.</p>



<b>Performance Measure 3.4</b>			
Sandia will safely and efficiently remove explosives/energetic material in FY 2010.			
<b>NNSA Rating: Outstanding</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>3.4.1</b> Sandia will continue to work with the KAFB Explosive Ordinance Disposal Unit and Hill Air Force Base on the disposal of excess explosive and energetic materials. Sandia will deliver a minimum of 45,000 pounds of explosives, energetic materials and/or rocket motors for disposal, destruction or beneficial reuse.	Outstanding	Agree	Sandia significantly exceeded the target for disposition of explosives and energetic materials. Sandia successfully created agreements with KAFB and Hill AFB to receive explosives and rocket motors and the results were outstanding. Sandia is currently looking at FY 2011 locations to receive explosives and rocket motors to continue the de-inventory of excess materials
<b>3.4.2</b> Sandia will deliver a Rocket Motor Inventory Management Plan by the end of June 2010. The five-year plan will include the projected need for rocket motors, the inventory status, acquisition mgt, and the projected disposal of unneeded motors.	Outstanding	Agree	Sandia's formalization of the management of their rocket motor inventory has resulted in a significant improvement in the control of this energetic material. The 2010 five-year plan will facilitate the management of explosives and rocket motors and assist with forecasting future needs to support laboratory work.

<b>Performance Measure 3.5</b>			
Sandia will provide support to the Office of Secure Transportation (OST) mission work.			
<b>NNSA Rating: Outstanding</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>3.5.1</b> Sandia will promote the efficient and effective use of NNSA transportation resources (Secure Transportation Assets) by:  <b>3.5.1.1</b> Updating, on a quarterly basis, the shipping requirements	Outstanding	Agree	Sandia has worked with SSO and OST to assure OST received the shipping plans for the FY 2010 on time.  <b>3.5.1.1:</b> Sandia has customers that request SNL to ship items on very short schedule. SNL is relied



**PI-4: Learning Organization – Stretch (Original PEP)**

Sandia will use human performance principles and Human Performance Improvement tools to improve methods for detection of error precursors and awareness of error-likely situations.

**Adjectival Rating: GOOD**

**Summary of Performance**

Sandia’s overall performance in achieving the stretch goals of Learning Organization is rated as “Good” for FY 2010. The efforts to provide Human Performance Improvement (HPI) training are good, but the realization of HPI implementation efforts continues. Sandia worked to achieve the stretch goals of using human performance principles and HPI tools to improve methods for detection of error precursors and awareness of error-likely situations. For example, Sandia made significant progress in developing an HPI training curriculum and has provided trained to 639 personnel for HPI-100 and 245 personnel for HPI-200. However, while some HPI deployment activities have occurred, efforts to institutionalize HPI were delayed. Sandia identified the need for additional funds by the middle of FY 2010, and a portion of the requested funds were made available in the fourth quarter of the FY 2010. As a result, completion of an HPI website, development of metrics, establishment of a charter for the long-term HPI working group occurred late in the fourth quarter and deployment pushed into FY 2011. These activities, if continued in FY 2011, should demonstrate significant visible progress in HPI deployment and practice or provide evidence of results indicating HPI practices have had an impact on performance.

**Significant Accomplishments**

Sandia reported larger numbers of trained personnel and deployment of toolkits.

**Opportunity for Improvement**

There is a lack of specific goals, metrics and performance indicators are needed to show deployment is having an impact on performance. Activity to date has not demonstrated significant deployment of practices site-wide. Evidence of improvement in performance due to HPI application is expected as the year progresses.

**Performance Measure 4.1 (Original PEP)**

Sandia will institutionalize human performance principles into daily practices (Approach).

**NNSA Rating: Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>4.1.1</b> Establish a HPI Working Group.	Very Good	Disagree Satisfactory	Efforts to establish a working group were initiated but were not visibly active until later in the year.
<b>4.1.2</b> Establish an HPI Steering Committee to guide/oversee integration of HPI and other learning organization items.	Good	Disagree Satisfactory	Although Sandia transitioned from the HPI working group to an Executive Steering Committee and some information (strategy, resource requests) were presented to senior management, the effectiveness of deployment cannot be yet measured.
<b>4.1.3</b> Complete curriculum development for HPI training.	Outstanding	Agree	Sandia devoted its limited resources in this area effectively.
<b>4.1.4</b> Continue to provide HPI training.	Outstanding	Agree	Sandia devoted its limited resources in this area effectively.

<b>Performance Measure 4.2 (Original PEP)</b>			
Sandia will institutionalize human performance principles into daily practices (Deploy).			
<b>NNSA Rating: Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>4.2.1</b> Incorporate HPI principles into SNL ES&H and S&S assurance processes.	Very Good	Disagree Good	Sandia has made good progress in integrating HPI into the Safeguards and Security (S&S) organization assessment activities, but some efforts integrating within Environment Safety & Health (ES&H). HPI was included in the deployment of a risk identification process during the 4 <sup>th</sup> quarter and aided in the identification of future planned ES&H assessments. It is expected that lessons learned from these deployment activities will be shared between the policy areas.
<b>4.2.2</b> Establish strategy and goals to deploy in FY 2010 and put into practice the HPI principles (e.g. proceed beyond training into deployment).	Outstanding	Disagree Good	Sandia has a strategy and initiated some activities to support deployment (websites, training) within some organizations, but has not yet expanded deployment and practices site-wide.

<b>Performance Measure 4.3 (Original PEP)</b>			
Sandia will institutionalize human performance principles into daily practices (Results).			
<b>NNSA Rating: Satisfactory</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>4.3.1</b> Identify FY 2010 measures of improvement that can be credited or linked to practice of HPI principles.	Good	Disagree Satisfactory	Sandia has not yet defined a set of metrics and reported on specific improvements that can be linked directly to application and deployment of HPI.
<b>4.3.2</b> Assess progress (and effectiveness) of PI-4.1 and PI-4.2 targets including identified milestones quarterly.	Very Good	Disagree Satisfactory	Since deployment of HPI tools/practices did not fully occur as planned, assessment of effectiveness was limited.

<b>Other Considerations (Original PEP)</b>
None

**PI-4: NNSA Governance – Stretch (Alternate PEP)**

**Achieve stretch goals described in the performance targets below to increase Sandia's effectiveness as a leading contributor to the success of the NNSA Governance Initiative.**

**Adjectival Rating: OUTSTANDING**

**Summary of Performance**

Sandia's overall performance in achieving the stretch goals for the NNSA Governance is rated as "Outstanding" for FY 2010. Throughout FY 2010, Sandia diligently worked with the Sandia Site Office (SSO) to plan and implement initiatives to respond to the NNSA Administrator's direction to pursue governance reform and improve mission performance for non-nuclear operations. This effort was addressed through a number of deliverables provided to the NNSA Governance Committee in April 2010. Sandia continued to work with SSO and NNSA subject matter experts (SMEs) to clarify products, improve understanding, and resolve conflict/concerns. The results were requirements exempted, special contract clauses matured, a mission focused performance evaluation plan, improved transparency, and an enterprise-wide launch toward a new Governance Model.

**Significant Accomplishments**

- Championed the SNL/SSO Joint Governance and Oversight Project Execution Plan.
- Developed jointly with SSO the Governance and Oversight Project Execution Plan and the Joint Operating Requirements Review Board (JORRB) charter.
- Analyzed 39 directives to reduce redundancy and to shift from DOE directive requirements to industrial standards.
- Assisted with revision of the Management and Operation (M&O) contract special clauses to clarify clauses and mature the approach to capture governance reform.
- Assisted with the implementation of a revised FY 2010 Performance Evaluation Plan (PEP) in the fourth quarter that focused on the mission and to properly balance support priorities to hold the contractor accountable for performance.
- Helped transform the Joint Performance Council (JPC) to integrate with Sandia Executive Management Review (EMR) process.
- Proactively addressed NNSA concerns/issues with Governance efforts, resolved conflict with multiple NNSA functional offices, and facilitated compromise, to meet the Administrator's vision.

**Opportunity for Improvement**

None

**Performance Measure 4.1 (Alternate PEP)**

Sandia, in collaboration with NNSA, will aggressively implement the Governance Framework as defined in the January 28, 2010 *Governance and Oversight Project Execution Plan*, and revisions thereto.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
4.1.1 JORRB dispositions directives per Project Execution Plan schedule.	Outstanding	Agree	Sandia, in collaboration with SSO, chartered a JORRB to review and propose changes to reduce redundancy with regulations and to shift from DOE directive requirements to industrial and site-specific standards, where beneficial. Sandia, in their effort

			for JORRB Phase 1 for non-nuclear activities, jointly with SSO reviewed 39 of the 108 DOE Directives on the Sandia Contract and identified 32 of those 39 directives that contained requirements that are unnecessarily burdensome or duplicative of applicable federal, state, or local laws and regulations, and/or where there are consensus standards available that foster best business practices. NNSA has dispositioned all directives' crosswalks and the Administrator granted exemptions for eight directives identified requirements in August 2010. Additional phases of requirements analysis were delayed at NNSA request in order to formalize an enterprise-wide process for requirement review.
4.1.2 JORRB methods, successes, and failures are shared with other NNSA sites.	Outstanding	Agree	Sandia worked closely with their counterparts across NNSA to ensure consistency in approach to a new Governance Model. Sandia provided training to field sites on their requirement analysis tool and encouraged NNSA participation in local JORRBs. Sandia worked closely with Nevada Site Office and Nevada National Security Site (NNSS) to ensure consistency in approach, deployment, and deliverables associated with requirement analysis. The Sandia senior staff took their training on requirement linkages to the Integrated Laboratory Management System (ILMS) to Washington, D.C. and provided hands-on instruction to NNSA SMEs. Sandia provided ongoing support to the Requirements Analysis Working Group, the action arm of the NA-1's Enterprise Operating Requirements Review Board (EORRB), and benchmarked best practices for NNSA process improvement. The valuable communication to date has promoted enhanced interaction across the Nuclear Security Enterprise (NSE).

**Performance Measure 4.2 (Alternate PEP)**

Upon implementation, mission performance is improved by becoming a more efficient, cost effective site without detriment to security and safety.

**NNSA Rating: Not Rated**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
4.2.1 Cost savings and/or process efficiencies are demonstrated and validated.	Outstanding	Not Rated	NNSA approval for SSO/Sandia initiatives (i.e., exemptions to Directives) came late in the fourth quarter of the fiscal year. Implementation of NNSA-approved requirement exemptions was not codified in a contract modification during the fiscal year. No cost savings associated with the Governance initiative were demonstrated due to the

			<p>aforementioned facts. Per the Administrator's direction, cost savings/efficiencies will be captured and reported twelve months after implementation.</p>
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**Performance Measure 4.3 (Alternate PEP)**

Sandia, in support of Governance and Oversight Reform, will maintain/administer and improve ILMS.  
**NNSA Rating: Very Good**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p><b>4.3.1</b> Evaluated the measures and metrics system of the ILMS/ Performance Assurance System (PAS) to ensure relevance to meet SNL and NNSA goals and enhance the management review process.</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>The Joint Performance Assurance Integration Team (JPAIT) has been successful in drafting an ILMS Improvement Plan (although this plan remains in "draft"), developing a process to govern Sandia's EMRs, and providing training for SSO and Sandia on the PAS.</p> <p>Sandia continues to work on developing performance measures and metrics to be used for evaluation of progress. Sandia has also utilized an independent consultant to evaluate their measures and metrics of the Performance Assurance System. As noted in the Frost report for FY 2010, although progress has been made "... actual improvements in the measures and metrics themselves have been more modest." Sandia acknowledges this and continues to work toward improvement in this area.</p>
<p><b>4.3.2</b> Increase transparency of management processes to accommodate government oversight on a non-intrusive basis.</p>	<p>Outstanding</p>	<p>Disagree Very Good</p>	<p>Sandia continues to work toward improved transparency and continues to work on identifying information that needs to be accessible to SSO.</p> <p>Transparency is part of the ILMS Improvement Plan. Per Sandia, this plan is "on hold" pending Sandia Executive Management decision on path forward. However, Sandia indicates that they continue to address this plan and are continuing actions to improve transparency. SSO has seen improvement in transparency, as indicated throughout this report, in areas such as WFO and Mission Support. Sandia needs to provide status updates at the weekly JPAIT on the improvement plan including progress toward improved transparency as these updates stopped when the plan was put on hold.</p>

**Other Considerations (Alternate PEP)**

PO-4.3.1 (A) relates to PO-6: *Corporate Governance* in the Alternate PEP.

## PI-5: Business Management Process Efficiencies - Stretch

Establish enduring Sandia practices that achieve operational efficiency, while sustaining effectiveness, through reform of Laboratory-wide processes benchmarked against top performers in Sandia's peer group.

**Adjectival Rating: OUTSTANDING**

### Summary of Performance

Sandia's overall performance in achieving the stretch goals for Business Management Process Efficiencies is rated as "Outstanding" for FY 2010. Sandia continued to evaluate and transform business processes across Sandia National Laboratory (SNL). They implemented improvements based on Hackett benchmarks as well as value stream process reviews that provided enduring results while continuing to focus on a longer term strategy that reduced complexity, increased standardization and better aligned organizational execution for end-to-end workflow. Sandia's efforts yielded cost efficiencies that exceeded the \$15 million annual target and demonstrated progress toward the institutionalizing of key business processes. The Business Management Advisory Council (BMAC) benchmarked pension and benefit initiatives Sandia implemented to reduce the government's long-term liability and align pension and benefit plans with market comparators. Contractor to federal communications were negatively impacted in the fourth quarter with the disclosure of a 2008 issue related to access controls on collaborative folders that drew Congressional interest. The quality of supporting documentation to validate savings and avoidances, as well as the clear baseline and reallocation of savings, made progress but fell short of Sandia's own procedural execution. While recognizing the extensive effort in all areas, the Supply Chain Management Center (SCMC) and Cyber Security initiative support continue to provide opportunities for corporate focus. Overall, Sandia exceeded expectations in many measures.

### Significant Accomplishments

Sandia has been a leader for Management and Operating contractors throughout the NNSA in initiating changes to pension and benefit plans that will reduce the government's long-term liability and in aligning these plans with market comparators. These changes are difficult but necessary and Sandia is commended for their initiatives such as changing the severance policy, retirement formula, and conversion from fully insured to self-insured for Kaiser, and implementation of two tier benefits for the Metal Trades Council and Security Police Association employees. Their efforts in this area have been benchmarked by the BMAC.

### Opportunity for Improvement

Sandia management needs to improve timely and open communications with regard to incidents, investigations, and issues that could have significant corporate and/or federal implications. Sandia needs to significantly improve on the overall process in planning, implementing, documenting, and validating their cost efficiencies and ensure the target savings come from institutionalized processes.

### Performance Measure 5.1

Review and as appropriate fully implement targeted process improvement in Laboratory-wide processes as defined and measured by the 2008 NNSA Enterprise Hackett benchmark activity for Finance and Human Resources (HR).

**NNSA Rating: Outstanding**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
5.1.1 Deliver Sandia's implementation plan and schedule with milestones	Outstanding	Disagree Very Good	Sandia delivered a project plan by November 30, 2009. However, the plan did not contain a schedule with milestones. It was a "general" plan



by November 30, 2009.			with vague dates on implementation. Overall, there was insufficient detail to determine expectations, planning, what targeted improvements would be implemented and by when. The plan was resubmitted 60 days later and the new document would have been rated as "Outstanding".
5.1.2 Submit quarterly reports into ILMS for the Policy Areas beginning in FY 2010 second quarter that summarize progress-to-plan toward relevant Hackett benchmark targets, including cost savings and/or cost avoidance when attained.	Outstanding	Agree	Although the initial plan was vague, a better format was developed and Sandia delivered quarterly progress reports as required and met expectations.

<b>Performance Measure 5.2</b>			
Institutionalize business practices for sustained efficiency and effectiveness resulting in a more competitive organization.			
<b>NNSA Rating: Very Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
5.2.1 Develop and institutionalize key Lab-wide end-to-end business and operational processes that as a minimum offset standard labor rate increases caused by benefit costs (\$15 million). By November 30, 2009, provide SSO with the FY 2010 plan to achieve cost savings/cost avoidance. Acceptable cost savings/avoidance procedures are in accordance with Corporate Procedure: FIN100.2.RPRT.2 <i>Document Efficiency and Cost Savings.</i>	Outstanding	Disagree Very Good	SSO maintains the position that the intent of the measure is to achieve savings from process improvements. The basis comes from the verbiage, which states: "institutionalize key Lab-wide end-to-end business and operational processes that as a minimum offset standard labor rate increases caused by benefit costs (\$15 million)."  Sandia has claimed \$22.5 million in cost efficiencies from institutionalized process improvements. However, not all of these efficiencies came from process improvements or were institutionalized. For example, equipment disposition from Building 979 was a onetime event unique to that organization. Moreover, not all savings were substantiated, and in fact some were misstated or non-existent such as the \$4.1 million savings claimed from various Lean Six Sigma Events. Of the \$22.5 million, SSO recognized and validated \$15.4 million as process efficiencies.  The plan that was delivered was substandard. It was simply a list of identified potential savings and did not address Sandia's plans, whether the

			<p>intent of the measure was met or if processes were improving.</p> <p>Neither the FY 2010 Performance Evaluation Assessment Report (PEAR), second or third quarter report, nor the additional documentation provided during the validation demonstrated that Sandia followed their corporate procedure, <i>FIN100.2.RPRT.2 Document Efficiency and Cost Savings</i> as required. Although, the FY 2010 PEAR references a Sandia validation, SSO is only aware of validation activity with three processes of the 19 process changes submitted.</p> <p>Sandia's validation process needs considerable improvement. In addition to the above adjustments, SSO believes additional adjustments would have been made and significant time saved had a thorough validation been conducted. For instance, Sandia claimed \$4.1 million in savings from Lean Six Sigma (LSS) activities of which many had not been implemented or were included elsewhere. SSO also found inaccurate numbers that should have been reconciled prior to their submission in the FY 2010 PEAR.</p>
<p><b>5.2.2</b> Provide SSO with a report in the month following the end of second and third quarters that summarizes progress on the lab-wide end-to-end business and operational process plan implementation and the associated cost savings/avoidance, including those recognized through activities associated with Performance Measure 5.1 efficiencies.</p>	<p>Outstanding</p>	<p>Disagree Good</p>	<p>Sandia delivered their report at the end of the month following the second and third quarter. This met the deliverable as strictly defined in this measure. The lack of a solid, comprehensive plan made it impossible to assess whether Sandia was on target to meet Performance Measure 5.2.1. Additionally, the reports were brief and did not provide sufficient detail to understand what process improvements were being accomplished.</p> <p>Most notable is the requirement to prepare a baseline before and after the process improvement, and to determine and document how the resources will be allocated after efficiency gains are realized.</p> <p>While Sandia did not provide documentation on how the savings were utilized, when queried Sandia stated the savings were used to partially fund their FY 2010 early contribution to the Sandia pension plans. NNSA through face-to-face meeting with process owners was able to gain sufficient information to validate the prescribed threshold, \$15 million.</p>

**Performance Measure 5.3**

Undertake and implement a strategy in FY 2010 for reduction of long-term pension and benefit costs while maintaining quality, and value.

**NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p><b>5.3.1</b> Continue implementation of NNSA-approved Sandia two-tiered pension and benefit plan that transitions new employees to a market-based pension plan.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia has implemented the retirement plan changes for newly hired MTC and SPA employees effective July 1, 2010. This is the last group, represented or non-represented, to implement two-tier pension and health benefits for newly hired employees. As a result, the Employer Paid Value Index on the Benefit Value (Ben-Val) Study for represented and non-represented employees is approximately 103 for newly hired employees.</p> <p>The changes include a departure from the defined benefit plan to a defined contribution plan and access only to retiree health. This is the first change of its kind for bargaining unit employees in the NNSA.</p>
<p><b>5.3.2</b> Implement practical adjustments to Sandia's benefit plans that result in moving Sandia towards greater compliance with the contractual Ben-Val requirements.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>The Sandia initiative to propose a conversion from fully insured to self-insured in an effort to reduce costs was approved by NNSA. While this effort will not reduce Sandia's Employer Paid Value index on the Ben-Val Study, the change will reduce costs and provide Sandia with more flexibility to manage costs and design a benefits package that meets Sandia's needs.</p> <p>In addition, Sandia implemented a change to the Severance policy for non-bargaining employees at SNL. Sandia established a basic two week severance payment for all non-represented employees regardless of length of employment. Sandia will use a release of claims and those employees electing to sign the release would receive one week of severance per full year of employment up to a maximum of 24 additional weeks as consideration. This is consistent with market practice and will result in a cost savings should Sandia be in a position to make severance payments.</p>
<p><b>5.3.3</b> Provide evidence of actions taken or planned to implement a strategy for reducing long-term liability.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Two-tier benefits were implemented for newly hired MTC and SPA employees as of July 1, 2010. This completes the implementation plan of two-tier benefits for all newly hired Sandia employee's, represented or non-represented.</p>

		Furthermore, Sandia approved changes to the pension benefit formula for current non-represented employees and a change to retiree health premiums effective January 1, 2012. The long-term liability initiatives are expected to reduce post-retirement healthcare liabilities by approximately \$240 million and over \$500 million in pension liability.
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<b>Performance Measure 5.4</b>			
Supply Chain Management will establish a strong and effective relationship with the supplier community and increase competition for Sandia contracts.			
<b>NNSA Rating: Very Good</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>5.4.1</b> Increase contract dollars awarded competitively by 5%.	Very Good	Disagree Good	A 5% increase of competitively awarded contracts was not achieved (achieved on 56% of the goal).  FY 2009: \$40,000,000 GOAL FY 2010: \$42,000,000 GOAL \$23,578,000 ACTUAL  Sandia claimed at the end of the year to have misinterpreted the target as total contract dollars awarded rather than those tied specifically to the SCMC. If the target as total contract dollars awarded rather than those tied specifically to the SCMC, Sandia still would not have achieved this target. Example: Total contract dollars: FY 2009: 65.7% GOAL FY 2010: 70.7% GOAL 67.8% ACTUAL Sandia had the least amount of spending through competitive eSourcing enterprise-wide.
<b>5.4.2</b> Increase Sandia FY 2009 achievement by 10% for SCMC objectives.	Outstanding	Disagree Good	In FY 2010, Sandia was only utilizing two of the 14 available eStore catalogs with a majority of orders being for office supplies. There is an opportunity for increased partnering and utilization in FY 2011.
<b>5.4.2.1</b> Total number of eSourcing Events.			<b>5.4.2.1:</b> A 10% increase was achieved but based on annual spend, there is an opportunity for much greater use.
<b>5.4.2.2</b> Total savings from eSourcing Events.			<b>5.4.2.2:</b> The 16.5% goal was not achieved (achieved 5.18%, 31% of goal).
<b>5.4.3</b> Attain 5,000 orders utilizing SCMC eStore.	Outstanding	Agree	Sandia far exceeded the goal achieving 6,348 eStore orders.

5.4.4 Progress will be tracked and reported quarterly in ILMS.	Outstanding	Agree	SCMC progress is normally posted quarterly in ILMS. However, NNSA SCMC Scorecard should be posted as well.
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**Performance Measure 5.5**

Support federal Cyber Security initiatives to guard against unauthorized access, modification or denial of information.

**NNSA Rating: Very Good**

Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
5.5.1 Evaluate tools and methodologies for monitoring of compliance with Federal Desktop Core Configuration (FDCC) requirements on all networked Windows XP and Vista desktop systems.	Outstanding	Disagree Very Good	The information provided by Sandia in the FY 2010 PEAR indicated that only one network tool was evaluated for this performance incentive -- the Desired Configuration Manager component of Microsoft's System Center Configuration Manager (SCCM). As the SCCM software is an existing capability at Sandia, there was no cost associated with procurement of the tool. However, Sandia could provide no evidence that the features and capabilities of the product they selected had been compared to the features and capabilities of other tools for monitoring compliance with FDCC requirements. While it may appear likely that the low cost of the selected tool would outweigh any additional capabilities offered by competing solutions, a documented cost/benefit analysis that addressed features and capabilities would have better substantiated the decision to select the Desired Configuration Manager component of SCCM for monitoring FDCC compliance.
5.5.2 Demonstrate the feasibility of a selected tool and/or methodology for monitoring of FDCC compliance on a test group of networked Windows XP and Vista desktop systems.	Outstanding	Disagree Very Good	The information provided by Sandia in the FY 2010 PEAR indicated they demonstrated the feasibility of the selected tool to produce reports of FDCC compliance for a test group of 50 systems on the Sandia Restricted Network (SRN). They also provided a copy of a 21-page report generated by the tool that outlined FDCC compliance for one of the 50 systems. However, Sandia did not address the feasibility of this tool as part of an ongoing corporate process to monitor FDCC compliance of networked devices. A process that relies on a manual review of a separate 21-page report for each system to determine FDCC compliance does not seem feasible for large-scale deployment. Further analysis of how this tool would be used to efficiently monitor FDCC compliance across a very large network seems warranted.

<p><b>5.5.3</b> Modernize cyber infrastructure.</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia summarized in the FY 2010 PEAR the significant benefit of having a persistent presence for monitoring network traffic through the Built in Network Security (BINS) project they deployed in FY 2010. However, there was a great deal of related work done by Sandia to leverage the information being obtained from these network sensors that was not described in the FY 2010 PEAR. This related work focused on a mix of commercial off-the-shelf (COTS) software and Sandia developed software to aggregate and correlate data for the purpose of monitoring network traffic and detecting anomalous behavior. One of the primary COTS components of BINS is SPLUNK, which is used as the data repository and source for reporting. This capability has led to the development of real-time dashboards depicting network traffic. These dashboards can be viewed at a high level or drilled down to display additional data about a particular resource attribute (such as Internet Protocol (IP) address, machine name, etc). In addition, SNL-developed applications such as Pynemu and PDFScan are now being run against incoming traffic to detect malicious code. These tools represent cutting edge research and development efforts and are based on detecting obfuscated shellcode in network streams. If malicious code is detected, an alert is automatically triggered for further investigation. In sum, the BINS project represents a significant improvement in cyber protection and detection capabilities for Sandia today and the potential for even greater improvements in the future.</p>
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<p><b>Performance Measure 5.6</b></p>			
<p>Institutionalize cost-effective financial internal controls to assure effective and efficient operations, reliable financial reporting, and compliance with applicable laws and regulations.</p>			
<p style="text-align: center;"><b>NNSA Rating: Outstanding</b></p>			
<p><b>Performance Target</b></p>	<p><b>Sandia Self-Assessment Rating</b></p>	<p><b>NNSA Agreement</b></p>	<p><b>Comments</b></p>
<p><b>5.6.1</b> Invest in automation to enhance internal controls leading to more efficient operations and improved accuracy</p>	<p>Outstanding</p>	<p>Agree</p>	<p>During the year, Sandia implemented People Soft 9.0 and automated six other processes.</p>
<p><b>5.6.2</b> Assess the adequacies of financial internal controls and update your September 2000</p>	<p>Outstanding</p>	<p>Agree</p>	<p>Sandia has a comprehensive self-assessment and testing process related to internal controls. They followed the Chief Financial Officer's guidance for conducting the FY 2010 Internal Control</p>

comprehensive internal control review document with the current internal control review process (A-123/FMA).			Assessment and tested the Office of Field Financial Management identified high-risk areas. No major findings were identified.
<b>5.6.3</b> Identify needed improvements and initiate steps to improve internal controls.	Outstanding	Agree	During the A-123 self-assessment, Sandia identified three minor findings, which addressed corrective actions. Additionally, during the process, Sandia identified future automation opportunities, which appear to provide opportunities for significant improvement if implemented.

<b>Other Considerations</b>
None

## PI-6: FY 2010 Multi-Site Targets

The deliverables included in the Multi-Site Performance Incentives are reflected in the Performance Evaluation Plans (PEPs) of all eight Nuclear Security Enterprise (NSE) sites. The rationale for the inclusion of these deliverables in each of the FY 2010 PEPs is to provide incentives to the entire NSE to work jointly to achieve goals that are critical to the mission of NNSA Defense Programs. To the degree that a site, like Sandia, has any role to play in the achievement by the NSE of a performance target, NNSA expects that the site will do everything possible to do its part (if applicable) and to support the other sites in the NSE to do their parts to achieve the goal.

**Adjectival Rating: VERY GOOD**

### Summary of Performance

Sandia's overall performance in meeting the goals of the suite of Multi-Site Targets is rated as "Outstanding" for FY 2010. Sandia's efforts resulted in the successful completion of eleven of the twelve targets including all targets Sandia had leadership or co-leadership responsibility. Sandia led or co-led Performance Targets 1.1, 1.2, 1.4, and 2.2. Sandia's leadership resulted in outstanding performance across the NSE as a whole in fulfillment of the performance target expectations. Sandia delivered 848 neutron generators (NGs) in FY 2010, exceeding all prior year shipments by more than a factor of two. Sandia delivered 133 different component lots comprising 21,167 units from 10 different technology areas; this is an increase of 22% from FY 2009 and an increase of 89% from FY 2008. The completion of high-priority DP mission-related science experiments, in for Performance Target 3.3.b, was evaluated as "Red" across all sites (Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), Nevada National Security Site (NNSS), and Sandia National Laboratory (SNL)). While Sandia made progress in preparing for plutonium (Pu) experiments on Z-Machine, Sandia was unable to complete the experiments as further discussed in PO-1. Sandia did maintain readiness for the Barolo series of experiments and participated in the first confirmatory experiment in the Bacchus subcritical experiment series.

### Significant Accomplishments

- On schedule to yield the first W76-1 Life Extension Program (LEP) MC4700-05 Arming, Fuzing & Firing (AF&F) in December 2010.
- Completed all deliverables associated with Phase Gate B for the B61 LEP Phase 6.2 Study.
- NG shipments delivering 848 NGs in FY 2010, exceeding all prior year shipments by more than a factor of two.
- Delivered 133 different component lots comprising 21,167 units from 10 different technology areas; this is an increase of 22% from FY 2009 and an increase of 89% from FY 2008.
- Delivered a production lot of Implementation Plan (IP) stamped SA3984 Permafrost Application Specific Integrated Circuit (ASIC) packaged devices to Kansas City Plant (KCP) from their newly established in-house burn-in facility.
- Component Characterization team completed characterization for 23,630 parts during FY 2010.
- On January 28, 2010, Sandia and SSO signed a joint Project Execution Plan that describes the four key activities upon which the Governance and Oversight Reform framework is based.
- Took the lead in developing the requirements analysis process based on the proven concept of a Joint Operating Requirements Review Board (JORRB).
- Sandia and SSO signed a modification to the Special Provisions of the Prime Contract, and executed an Alternate PEP, both of which incorporate the principles of Governance and Oversight Reform.
- Provided support to Kansas City Responsive Infrastructure Manufacturing Sourcing (KCRIMS) in FY 2010 from existing weapon systems funds, with the exception of the W76-1, where FY 2010 funding was allocated.
- Delivered the tri-lab Distance Computing Wide Area Network (DISCOM WAN) data analysis, documenting usage of these resources, to LLNL.



**Opportunity for Improvement**

The completion of high-priority Defense Programs (DP) mission-related science experiments in preparing for Pu experiments on Z-Machine is discussed in PO-1.

**Item 1 - Stockpile****NNSA Rating: Outstanding**

<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<b>1.1</b> Achieve the W76-1 LEP scheduled deliveries to the U.S. Navy.	Very Good	Pass	Sandia met 100 percent of U.S. Navy deliverables in FY 2010, and achieved a 90-day lead for the months of August and September 2010. Sandia was not able to issue an acceptable Qualification Engineering Release (QER) for modified Launch Accelerometer (LA) design due to performance issues, which were not resolved in FY 2010. Early MC4700-05 AF&Fs will not include the redesigned LA. Sandia is on schedule to yield the first MC4700-05 AF&F in December 2010.
<b>1.2</b> Prepare for an accomplish Phase Gate B for the B61 LEP Phase 6.2 study by September 30, 2010.	Outstanding	Pass	Sandia completed all deliverables associated with this performance target. The B61 LEP project is currently transitioning to a Full-Nuclear scope as directed by Congress and NNSA effective August 6, 2010.
<b>1.3</b> Deliver limited life components and Alteration Kits to the DoD.	Outstanding	Pass	Sandia NG shipments supported the W76 and W78 weapon systems delivering 848 NGs in FY 2010, exceeding all prior year shipments by more than a factor of two. Prior to FY 2010, Sandia had shipped a maximum of 390 NGs in a single year. Sandia delivered 133 different component lots comprising 21,167 units from 10 different technology areas; this is an increase of 22% from FY 2009 and an increase of 89% from FY 2008. Sandia delivered a production lot of IP stamped SA3984 Permafrost ASIC packaged devices to KCP. These are the first War Reserve (WR) ASIC lot that utilized Sandia's newly established in-house burn-in facility in its entirety.
<b>1.4</b> Execute Surveillance Program defined by the SESC.	Outstanding	Pass	Sandia successfully completed all surveillance milestones with the exception of one stockpile surveillance test included in the B61 warhead stockpile evaluation and product/component surveillance milestone. One of seven planned B61 surveillance tests was not completed due to delays in energetic standup of the Aerial Cable Facility (ACF).
<b>1.5</b> Perform Dismantlements.	Outstanding	Pass	Sandia completed scheduled activities in support of Pantex dismantlement work. Sandia provided

			<p>weapon response and engineering support as needed to ensure dismantlement proceeded ahead of schedule. Sandia supported SS-21 work and Power-Free Gas Sampler (PGS) implementation as scheduled. Sandia provided component disposition information through the Stockpile Dismantlement Database (SDDDB), accessible through the classified Enterprise Secure Network. Sandia's Component Characterization team completed characterization for 23,630 parts during FY 2010, and certified them in SDDDB, in support of the enduring stockpile and retired systems.</p>
<p>1.6 Authorize the B53 and W84 Programs.</p>	<p>Outstanding</p>	<p>Pass</p>	<p>Sandia met all assigned deliverables in support of B53 SS-21 activities identified in the baseline plan. Sandia supported Pantex in completing the Nuclear Explosive Safety Study (NESS), Contractor Readiness Assessment (CRA), and DOE Readiness Assessment (RA) activities in accordance with the approved B53 SS-21 schedule. Sandia supported the NNSA SS-21 Project Team activities, as defined in the approved project plan, in preparation for authorization of W84 disassembly and inspection operations.</p>

<b>Item 2 – Enterprise Integration</b>			
<b>NNSA Rating: Outstanding</b>			
<b>Performance Target</b>	<b>Sandia Self-Assessment Rating</b>	<b>NNSA Agreement</b>	<b>Comments</b>
<p>2.1 Successfully complete NNSA-approved priority activities in support of Enterprise Reengineering</p>	<p>Outstanding</p>	<p>Pass</p>	<p>In FY 2010, Sandia implemented the NNSA Administrator's direction for Governance and Oversight Reform. SSO and Sandia formed a joint team comprised of federal and contractor personnel to plan and implement an approach to Governance and Oversight Reform. On January 28, 2010 (before the due date of January 31, 2010), Sandia and SSO signed a joint Project Execution Plan that describes the four key activities upon which the Governance and Oversight Reform framework is based which includes: 1) Contract Analysis; 2) Revised "Alternate" PEP; 3) Requirements Analysis; and 4) Oversight Plan (an SSO responsibility). Sandia took the lead in developing the requirements analysis process based on the Kansas City proven concept of a Joint Operating Requirements Review Board (JORRB). Sandia, with SSO and Nevada partners, developed the analysis process and principles, an analysis database for potential enterprise-wide deployment, coordinated with NNSA Headquarters (HQ) executives to</p>

			<p>formulate the HQ process to review Directives, which operates through an Enterprise Operating Requirements Review Board (EORRB), and worked with SSO and HQ representatives to come to closure on the Directives analyses that were presented to the EORRB. Eight directives “crosswalks” were approved by the Administrator on August 16, 2010 for Sandia and Nevada. Fourteen additional Directives are pending NA-1 approval. Sandia and SSO also signed a modification to the Special Provisions of the Prime Contract, and executed an Alternate PEP, both of which incorporate the principles of Governance and Oversight Reform.</p>
<p><b>2.2</b> Implement Elements from the approved FY 2010-15 Multi-Site IT Strategic Plan Targets</p>	<p>Outstanding</p>	<p>Pass</p>	<p>In FY 2010, the information technology (IT) Multi-site team (CIO’s and representatives from all eight NSE sites) implemented the third phase of a multi-year enterprise-wide IT plan. The plan included targets aligned with key strategic focus areas: (1) IT/Cyber Integration, (2) NSE Core Services, (3) Improve Cyber Incident Response, and (4) Implement NSE Wireless Capability. In response to the whitepaper titled “A Vision for Improving Videoconference Reliability across NSE”, NNSA requested a proposal to implement videoconferencing enhancements in 2010. KCP and Sandia led the team that developed the proposal. LANL and Sandia led the effort to develop a concept of operations for enterprise-wide cyber incident response. The vision is to establish a national virtual collaborative incident response capability leveraging Cyber Security expertise across NSE to strengthen our defensive posture. The approach includes building a community of skilled analysts with the skills and ability to respond to cyber incidents anywhere in the complex. Data will be shared between sites. The concept of operations including a conceptual model and roles and responsibilities was developed and submitted to NNSA. In June 2009, LANL and Sandia hosted an exercise to formalize and start to build a community of skilled analysts for incident response. The exercises continued into 2010, with a February event also hosted by Sandia and LANL called “Tracer Fire 2”. The event included training, incident responder exercises, and information sharing. This event included critical skills training for Cyber Security analysts and was conducted in three tracks: (1) host level forensic analysis (2) network protocol reversing and (3) malware reverse engineering.</p>

<p>2.3 Support business process transformation and relocation of the KCP.</p>	<p>Outstanding</p>	<p>Pass</p>	<p>Sandia provided support to KCRIMS in FY 2010 from existing weapon systems funds, with the exception of the W76-1, where FY 2010 funding was allocated. Sandia reprioritized weapons work as required to meet KCP inventory reductions, requalification of outsourced technologies, and product build-aheads in support of KCRIMS planning and as coordinated with KCP at both the weapon systems and KCRIMS NNSA/KCP/SNL Steering Committee levels. Sandia hosted the NNSA sponsored KCRIMS Summit on June 30, 2010, which was attended by engineering staff and management from Sandia systems, subsystems, components, and surveillance organizations.</p>
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Item 3 – Science			
NNSA Rating: Satisfactory			
Performance Target	Sandia Self-Assessment Rating	NNSA Agreement	Comments
<p>3.1 NIF: begin first integrated ignition experiments</p>	<p>Outstanding</p>	<p>Not Scored</p>	<p>This milestone was canceled. The National Ignition Campaign (NIC) management team underestimated the complexity and difficulty of the work leading up to completing this milestone, and NNSA approved the Level I baseline change to move the scheduled completion of this milestone to FY 2011 fourth quarter.</p>
<p>3.2 Build a framework to assess changes in agreement of simulation predictions with experimental data from representative Underground Nuclear Testings as new science-based modeling capabilities are incorporated.</p>	<p>Not Scored</p>	<p>Not Scored</p>	
<p>3.3 Successfully perform high-priority DP mission -related science experiments.</p>	<p>Good</p>	<p>Disagree Fail</p>	<p>The restart operation at JASPER for dynamic Pu experiments was not completed in FY 2010. The first Pu experiment on JASPER is not expected until FY 2011, third quarter at the earliest.</p> <p>The high priority dynamic Pu experiments on Z-Machine at the authorized current levels were not completed. The first Pu experiments on Z-Machine are expected in FY 2011, first quarter.</p> <p>The hydrotests at Dual Axis Radiographic Hydrodynamic Test (DARHT) consistent with the FY 2010 National Hydrotest Plan were completed.</p>

			The Bacchus and Barolo subcritical experiment series at U1a, one confirmatory and one Pu experiment were executed during FY 2010.
3.4 Advanced Simulation & Computing	Outstanding	Pass	Sandia successfully provided tri-lab access to its Advanced Simulation and Computing (ASC) computing resources. Sandia delivered the tri-lab Distance Computing Wide Area Network data analysis documenting usage of these resources to LLNL.

<b>Other Considerations</b>
None