Fiscal Year 2012
Performance Evaluation Report

Lawrence Livermore National Laboratory

Prepared by:

Livermore Site Office
National Nuclear Security Administration
November 30, 2012

Addendum 1
January 30, 2013

FY 2012 Performance Evaluation Report
for
Lawrence Livermore National Laboratory

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1.0 Introduction

This report was produced by the Department of Energy/National Nuclear Security Administration (DOE/NNSA), Livermore Site Office (LSO) to provide the NNSA Fee Determining Official (FDO) with an evaluation of the Contractor's performance for all Performance Incentive requirements under contract DE-AC52-07NA27344. In accordance with the Section H Clause entitled, *Performance-Based Management*, the Contractor's performance is evaluated and rated by NNSA based on clearly defined standards of performance consisting of performance objectives and performance incentives including multi-site performance incentives and award term incentives as set forth in the Performance Evaluation Plan (PEP) on a Fiscal Year (FY) basis.

Addendum 1: It is noted that subsequent to the issuance of the PER that the NNSA FDO exercised her authority on December 5, 2012, making an adjustment to the recommended incentive fee, which resulted in the Contractor earning the award term.

1.1 Evaluation Process

In accordance with the FY 2012 PEP for Lawrence Livermore National Security, LLC (LLNS), the Contractor's performance evaluation consists of both subjective (adjectival) and objective (pass/fail) ratings. The Contractor receives summary level adjectival ratings in Programs, Operations, and Institutional Management (IM) based on the definitions set forth in the PEP. While the adjectival ratings are considered subjective in order to preserve the discretion of the Site Office Manager and FDO, the ratings are based on numerous performance measures and targets that include objective criteria. The Contractor's performance is also evaluated on an objective basis (pass/fail) against individual stretch targets, multi-site targets, and award term incentive (ATI) measures.

Performance is assessed against the applicable evaluation criteria using a variety of different approaches including, but not limited to, LSO oversight, peer reviews, external reviews, customer feedback, and program reviews. Unanticipated barriers (e.g., budget changes, rule changes, circumstances outside the control of the Contractor) and other circumstances that may occur during the performance period are factored into the evaluation as well as effective Contractor efforts to overcome or mitigate the impacts. The evaluation also considers the Contractor's performance against all of the Level 1 and 2 milestones and NNSA multi-year strategic objectives associated with each of the strategic performance objectives.

It is noted that all NNSA program office assessments are fully incorporated. Any apparent differences between the program office ratings and the ratings set forth in this report are due to the fact that some of the performance objectives and measures in the PEP represent a consolidation of various program office ratings.

1.2 Performance Period

The performance period is October 1, 2011 through September 30, 2012, which is the fifth year for the management and operation of the Lawrence Livermore National Laboratory (The Contractor) by Lawrence Livermore National Security, LLC (LLNS).

2.0 Executive Summary

The Contractor achieved the following summary level ratings for the performance period:

	Summary Ratings		
Type	**Programs**	**Operations**	**IM**
Subjective (Essential)	Very Good	Very Good	Good
Subjective Fee % Range	76%-90%	76%-90%	51%-75%
Gateway to Stretch (rating of very good or better)	Pass	Pass	Fail
Objective (Stretch)	8 Pass, 1 Fail	5 Pass, 0 Fail	5 Pass, 0 Fail
Gateway to Award Term (80% earned incentive fee)	Fail (78%)		
Award Term Incentives	5 Pass, 0 Fail		
Eligible for Award Term	No		
Multi-Site Targets (pending HQ)	6 Pass, 1 Fail		

The Contractor earned 78% of its available incentive fee and did not meet the incentive fee gateway of 80% to be eligible to earn the award term. Although the Contractor successfully completed all five ATI targets, it failed to qualify for an additional year of term.

Based on the above ratings, the Contractor is eligible to earn incentive fees as follows:

Type	Programs	Operations	IM	Total
Total Available	$14,877,108	$8,926,265	$5,950,844	$29,754,217
Earned Incentive Fee $	$12,755,633	$7,694,440	$2,811,774	$23,261,847
Earned Incentive Fee %	86%*	86%	47%	78%

Type	Programs	Operations	IM	Total
Essential $	$7,230,275	$5,611,645	$2,811,774	$15,653,694
Essential %	90%	82%	63%	81%
Stretch $	$3,442,563	$2,082,795	$0	$5,525,358
Stretch %	89%	100%	0%	74%
Multi-Site $	$2,082,795			$2,082,795
Multi-Site %	70%			70%

* 90% excluding multi-sites.

2.1 Programs

The Contractor earned an overall adjectival rating of very good based on its performance against Objectives 1 through 5 in the PEP in contrast with its self assessment rating of excellent. Programs objectives include (1) understand the condition of the stockpile, extend the life of nuclear warheads and support dismantlement, (2) advance science technology and engineering (ST&E) to support the mission through experiments and computations, (3) advance the ST&E to support the mission through Inertial Confinement Fusion (ICF), (4) reduce nuclear dangers through support to nonproliferation and threat reduction, and (5) strengthen the ST&E base and develop technical capabilities needed to support current and future LLNL missions. All programs objectives were performed at the excellent level with the exception of ICF, which was rated very good by LSO and excellent by the Contractor. Although the Contractor met or exceeded nearly all of the performance targets, evaluation criteria, and milestones associated with the program objectives, there were key milestones on the NIC Program that were not completed as well as other NIC performance issues that resulted in the programs rating being downgraded from excellent to very good. The NIC was one of the Contractor's major programs in FY 2012. Since nearly all of the programs performance measures were rated excellent, the earned essential fee of 90% is at the top of the very good range (76% to 90%). The Contractor successfully completed 8 out of 9 stretch targets earning 89% of its available stretch incentive fee and 90% of its total incentive fee available for programs.

The NIF issues include a lack of focus on stockpile stewardship as well as key National Ignition Campaign (NIC) milestones that were not successfully completed as detailed in this report. There were also Office of Emergency Response issues as the Contractor has acknowledged that funding for the development of a neutron multiplicity detector for NA-42/82 was used to perform work not

within the project scope, which has caused delays in the projected completion date and aspects of the work to be reallocated to other laboratories.

Notable accomplishments in Programs include:

- Completed Cycle 17 of the annual assessment process and INWAP activities, which benefited in quality from increased scientific rigor due to improved modeling.

- Supported the W78/88 Life-Extension Program Phase 6.x, culminating in the signing out the Phase 6.2/2A Nuclear Weapons Council letter.

- Studied future LEP concepts, including a significant effort dedicated to the W78/W88 120-day study; and supported future LEP options with a major safety experiment at LLNL's Superblock and excellent progress on maturation of relevant technologies.

- Effectively managed Significant Finding Investigation workload; completed essentially all activities in support of the Directive Schedule; and provided excellent, timely support to NNSA-requested taskings and to other NNSA sites.

- Executed an exceptional national high-performance computing (HPC) program, including delivery of Sequoia (the world's most powerful supercomputer) and the Tri-Lab Linux Capacity Cluster 2 (TLCC2), a new HPC capability for Secret National Security Information, and an unclassified HPC capability (Vulcan).

- Completed the Boost Predictive Capability Framework L1 milestone; made excellent progress in the Predictive Capability Assessment Project; and achieved significant progress in advancing 3D assessment capabilities with improvements in simulation codes, their supporting technical basis, and QMU application.

- Conducted three integrated weapon experiments (hydrotests) at CFF, including a number of technical "firsts" associated with LLNL's collaborative all-optical subscale shot with AWE, which gathered data to improve models and design codes.

- Conducted six special nuclear material experiments at the Joint Actinide Shock Physics Experimental Research (JASPER) facility; and advanced pulsed-power capabilities for future experiments with six Phoenix tests.

- Executed HED Council-approved Tier 1 high-energy-density (HED) science stockpile stewardship experiments at the National Ignition Facility (NIF), including 10 material shots to understand the high-pressure behavior of tantalum, and 6 HEDSS platform development shots to isolate the physics of the ignition hohlraum and study instability in ignition capsules.

- Met 84 of 86 L1 and L2 milestones in the National Ignition Campaign (NIC). Enhanced experimental facility capabilities and examination of an expanded range of physics issues

have led to considerable recent progress in studying the performance of the four major control variables for ignition.

- Demonstrated NIF and NIC primary criteria and functional requirements, including shots with precision delivery of energy in excess of 1.8 megajoules (ultraviolet) and 500 terawatts of power.

- Conducted 332 systems shots on NIF in FY2012 (181 in support of missions) and transitioned NIF to become a national User Facility to support ignition, HED stockpile stewardship, and fundamental science—as well as other national security and inertial fusion applications.

- Reduced nuclear dangers by working with the Russian Ministry of Defense to implement adequate Material Protection, Control and Accountability practices; recovering 34 radioisotope thermoelectric generators from the Russian arctic; and securing radiological and nuclear materials in Africa.

- Participated (as "Task Leader") in Comprehensive Nuclear-Test-Ban Treaty Working Group B; provided key technical contributions to developing on-site inspection capability; and developed and implemented innovative supercomputer 3D models for seismic wave propagation for nuclear-event monitoring.

- Led the modeling execution and data analysis for the Pele test, which assessed the ability of current technologies to discriminate signatures of nuclear weapon development activities from other actions.

- Conducted a successful US–Russia Laboratory Directors Meeting in Sarov, Russia and participated in associated tours of five Russian Rosatom laboratories.

- Developed innovative technologies for national security, such as plastic scintillator materials for nuclear smuggling detection, collection systems/architectures to support the war-fighter, and small cube-satellites to warn of close satellite encounters.

- Garnered prestigious awards for S&T achievements, including six R&D 100 Awards, and Ernest O. Lawrence Award, two Presidential Early Career Awards for Scientists and Engineers, four DOE Office of Science Early Career Research Program Awards, and the honor of element 116 being named Livermorium.

- Published impactful, high-quality publications in peer-reviewed journals.

- Effectively focused and invested institutional resources to support missions, generate new capabilities in anticipation of emerging national needs, seed new programmatic activities, develop intellectual property, and strengthen LLNL's ST&E base.

- Through the Livermore Valley Open Campus, formed new partnerships with industry, academia, and local communities to transfer technology and create quality jobs.

- Managed a high-quality post-doc program, hiring an average of more than five new postdoctoral researchers per month and providing an effective pipeline of quality scientists and engineers into Laboratory programs.

2.2 Operations

The Contractor earned an overall adjectival rating of very good, as opposed to its self assessment rating of excellent, based on its performance against Objectives 6 through 8 in the PEP. Operations objectives include Facilities and Infrastructure, Environmental, Safety, and Health (ES&H), and Security, which were performed at the very good and good level. The Contractor maintained safe, environmentally sound, and secure operations in an efficient and effective manner in support of mission objectives. Performance measures in support of Facilities and Infrastructure, ES&H and Security were generally rated at the very good and excellent levels as the Contractor met or exceeded many of the performance targets and evaluation criteria. It is noted that the Contractor rated itself excellent in Objectives 6 and 7 despite the fact that it rated itself only at the very good level in many of the supporting performance measures. In the case of Security, it is noted that the Contractor successfully achieved critical initiatives that were a high priority to NNSA leadership and the Office of Defense Nuclear Security (DNS). While the Contractor continued to demonstrate improvement in many areas, improvements are still needed in achieving energy efficiency and water conservation goals as well as electrical safety and nuclear safety basis. Additionally, the Contractor needs to continue to implement corrective actions aimed at strengthening its formality in the governance of security operations as detailed in this report. The earned essential fee of 82% represents an increase from the FY 2011 percentage (79%) based on performance improvements in ES&H, and is in the mid-range of very good (76% to 90%). The Contractor successfully completed all five of its stretch targets earning 100% of its available stretch incentive fee and 86% of its total incentive fee available for operations.

Notable accomplishments in Operations include:

- Completed de-inventory of Security Category I/II nuclear material from the LLNL site on schedule, executed the transition plan, and began preparations to operate under Security Category Level III in FY2013.

- Successfully met (or are under extended review) Comprehensive Environmental Response Compensation and Liability Act (CERCLA) milestones set at the beginning of FY2012; continued safe execution of decontamination and demolition projects; and completed all radioactive/hazardous waste management targets on time.

- Sustained a strong commitment to an integrated approach to ES&H, continuing the decline the total-recordable-case metric by 25% in FY2012 to a multi-decade low.

- Established and maintained a compliant nuclear safety basis with an Un-reviewed Safety Question (USQ) process that continues to lead the complex in quality of USQs and in process improvement. Also maintained safe and compliant nuclear operations, with no significant issues or concerns identified and in full compliance with DOE O 425.1D.

- Maintained and continuously improved compliant, effective, and efficient nuclear safety programs in the areas of criticality safety (considered a flagship model for the complex), startup/restart, nuclear training, and nuclear materials.

- Conducted Security Category I operations in a manner compliant with DOE requirements; provided necessary Security-Organization support to de-inventory activities including MC&A and shipping coordination; and successfully executed planning for transitioning to Category III security operations.

- Sustained an effective security program in all topical areas, receiving in early FY2012 a satisfactory rating from the LSO FY2011 Annual Security Survey and addressing the only two deficiencies identified in FY2012 by LSO that resulted in findings.

- Initiated a new a program to enhance formality of security operations, a leadership training program for Security Organization staff, and the Livermore Electronic Access Portal (LEAP) project to improve 13 facets of security operations.

2.3 Institutional Management

The Contractor earned an overall adjectival rating of good based on its performance against Objectives 9 and 10 in the PEP, in contrast with its self assessment rating of very good. IM objectives include Business Operations and Governance, which were performed at the excellent and good levels. Performance measures in support of Business Operations and Governance were rated from good to excellent. Although the Contractor met or exceeded many of its performance targets and evaluation criteria, there were several critical issues that that precluded a higher rating. The earned essential fee is 63%, which is at the midpoint of good range (51% - 75%). Because the Contractor failed to earn an adjectival rating of very good or better, it did not meet the gateway for the stretch incentive fee and earned only 47% of its total incentive fee available for institutional management.

NNSA leadership was sensitive to the Contractor's failure to partner in reaching enterprise solutions to significant management challenges. Moreover, the lack of engagement by parent companies, e.g. Board of Governors, to ensure that NNSA leadership issues and concerns were addressed in resolving these significant management challenges was also an issue. Lastly, there was inconsistent implementation of the Contractor Assurance System across all functional areas and improvements needed to the institutional QA program.

Notable accomplishments in IM include:

- Completed 10 internal and 5 external financial audits in FY2012 with no significant findings (one report is pending); reviewed and tested 39 sub-processes as part of the A-123 program with no reportable conditions; and 41 risk occurrences and 153 risk-control combinations were tested with no failures.

- Eliminated all NIF special allocations, e.g. SCAP rates, and submitted a revised disclosure statement that corrected other potential Cost Accounting Standards (CAS) non-compliances.

- As of August 31, 2012, processed more than $504 million in procurements in FY2012 with no audit findings.

- Maintained LLNL's rating as an approved property management system and received a three-year extension, with the NNSA Annual Personal Property Assessment rating LLNL Property Management as outstanding.

- Led a benchmarking effort on the governance models of other laboratories/FFRDCs. The NNSA Livermore Site Manager and the NNSA Senior Procurement Executive participated in the effort. All Laboratories selected for the interviews are multi-disciplinary research facilities in national security with sponsors that include DOD, NASA, and DOE Office of Science.

- Met institutional needs for workforce recruitment, development, and sustainment through activities beyond the normal scope of human resources operations, which included special efforts in workforce policy modernization, succession planning, leadership development, and award-winning employee engagement programs.

- Continued to increase the effectiveness of the LLNL CAS/MAS and declared it ready (with Board of Governors' concurrence) to proceed with NNSA Affirmation in accordance with NNSA NAP-21.

- To improve information resource management, significantly expanded the Enterprise Data Center (EDC); successfully executed seven strategic business-system projects; developed standards-based IT Change Management Plan; and implemented a site-wide Risk-Based Cyber-security Management framework.

- Used the newly formatted Director's Monthly Performance Review to enhance line-management accountability for ES&H and all other project/program management initiatives using CAS-developed dashboard metrics; and used LLNL's Six Sigma program, Functional Management Reviews, and LLNS reach back for continuous improvement.

- Developed and issued the Quality Management System Description to provide a firm base for moving forward on ISO 9001 certification.

3.0 Subjective (Adjectival) Ratings

3.1 Programs

		NNSA	LLNS
Overall Programs Rating		Very Good	Excellent
1.	Understand the condition of the stockpile, extend the life of nuclear warheads and support dismantlement.	Excellent	Excellent
2.	Advance the science, technology, and engineering to support the mission through experiments and computations.	Excellent	Excellent
3.	Advance the science, technology, and engineering to support the mission through ICF.	Very Good	Excellent
4.	Reduce Nuclear Dangers through support to non-proliferation and threat reduction.	Excellent	Excellent
5.	Strengthen the ST&E base and develop technical capabilities needed to support current and future LLNL missions.	Excellent	Excellent

Performance Objective 1: Understand the Condition of the Stockpile, Extend the life of Nuclear Warheads and Support Dismantlement.

The Contractor did an excellent job understanding the condition of the stockpile, extending the life of nuclear warheads and supporting dismantlement activities under Objective 1, earning an excellent rating on all five performance measures consistent with its self assessment. The Contractor met or exceeded all of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did an excellent job managing weapons systems work, conducting assessments of weapons systems, managing and supporting LEPs, managing options for the stockpile, and supporting dismantlement throughout the complex.

Notable accomplishments include:

- Completed the annual assessment process for Cycle 17, including FY2012 INWAP activities.
- Supported the W78/88 Life-Extension Program (LEP) Phase 6.x, culminated in signing out the Phase 6.2/2A Nuclear Weapons Council (NWC) and the Nuclear Weapons Council Standing and Safety Committee (NWCSSC) letter.
- Studied future LEP concepts, focusing on refurbishment and reuse options.
- Conducted LEP concept studies, including a major safety experiment in the Laboratory's Superblock.
- Completed the NNSA-requested 120-day study and full-scale, rapid prototype models.

- Made excellent progress on the maturation of technologies for future LEPs.
- Provided timely and excellent technical support to NNSA-requested taskings and to other NNSA sites.
- Effectively managed Significant Finding Investigation (SFI) workload and closure activities, and provided timely status updates on SFI progress and closure.
- Continued to improve the rigor and quality of the stockpile annual assessments, including the deployment of new tools and lifetime models in support of assessments.
- Completed W80 neutron generator assessment and issued guidance and recommendations to NNSA.
- Supported the completion of the B83 nuclear explosive safety study (NESS) at Pantex, resulting in authorization to start work.
- Completed 100% (79 of 79) weapons program NNSA DP L2 milestones, with nine completed before their MRT due date.

Performance Objective 2: Advance the science, technology, and engineering to support the mission through experiments and computations.

The Contractor did an excellent job in advancing the science, technology, and engineering to support the mission through experiments and computations under Objective 2, earning an excellent rating on all six performance measures consistent with its self assessment. The Contractor met or exceeded all of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did an excellent job executing key SNM and integrated experiments, advancing 3-D assessment and UQ capabilities, executing and supporting Sequoia, Tri-Lab Linux Capacity Cluster (TLCC), and exascale, advancing predictive capabilities, advancing material models and theory, and assessing and innovating options for the stockpile.

Notable accomplishments include:

- Executed an exceptional national high-performance computing (HPC) program, including delivery of Sequoia TLCC 2, a new HPC capability for Secret National Security Information (SNSI), and an HPC unclassified capability (Vulcan).
- Led the joint DOE Office of Science/NNSA FastForward Extreme Scale Computing Initiative by awarding 5 contracts to accelerate supporting technologies.
- Assessed and innovated options for the stockpile, including for the W78/W88 120-day study and the Air Force-led Long-Range Stand-Off (LRSO) study.
- Executed HED Council-Tier 1 material and platform development experiments at the National Ignition Facility (NIF), achieving LLNL's objectives set up last year.
- Executed HED experiments at Omega, including obtaining the highest quality diffraction data to date in measurements of shocked tantalum.
- Completed the Boost Predictive Capability Framework (PCF) L1 milestone.

- Executed three integrated weapon experiments (hydrotests) at CFF. Two were hosted shots for LANL and SNL to address questions related to two stockpile systems. LLNL's shot was a major experiment in support of future certification strategies that are part of an ongoing collaboration between LLNL, LANL, and AWE, and demonstrated number of technical "firsts" as the first scaled all-optical shot at CFF. LLNL used the data from this shot to improve the models and design codes for a stockpile system.
- Executed six special nuclear material (SNM) experiments at the Joint Actinide Shock Physics Experimental Research (JASPER) facility, and developed and installed the new radiometry diagnostic.
- Completing two Phoenix advanced pulsed-power mini-generator (MG) tests, and four Phoenix flat-plate generator (FPG) tests.
- Achieved full physics requirement for 3D assessment and compared simulation performance against the standard technique, establishing the direction for future improvements.
- Held joint workshop on plutonium aging (with LANL); updated new results and remaining knowledge gaps since the L1 milestone in 2006.

Performance Objective 3: Advance the science, technology, and engineering to support the mission through ICF.

The Contractor did a very good job in advancing the science, technology, and engineering to support the mission through ICF, under Objective 3, as opposed to its self-assessment rating of excellent, earning one good and two very good ratings on its performance measures. The Contractor met or exceeded many of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did a good job successfully leading the execution and completion of the National Ignition Campaign (NIC), and a very good job transitioning NIF to routine facility operations and executing high energy density experiments. It is noted that the Contractor failed to achieve its stretch target (3.2.1) under ICF as well as the NNSA multi-site target (2.1) on achieving ignition, resulting in an additional reduction in fee of over $1.3 million ($429,783 stretch + $892,627 multi-site) above and beyond the essential fee.

The Contractor has made progress in ignition science by a combination of expanding the physics issues considered in experiments and enhancing facility experimental capability. Experimental platforms have been developed for optimizing key implosion attributes including shock timing in the cryogenic fuel, radiation symmetry at early time in the initial picket of the pulse, symmetry of the imploded capsule at peak compression, and radiography of the imploding shell to enable measuring implosion velocity and mass ablated from the imploding shell. Experiments are ongoing to study the four major control variables for ignition: symmetry, fuel adiabat, shell velocity, and mix. Experiments have demonstrated that the techniques developed can observe and control the effects of these variables.

While the Contractor has met the difficult challenge of successfully managing and completing the vast majority of NIC milestones, the program has ended with some key deliverables not being met. Specifically, two very important milestones, alpha heating and ignition were not

accomplished. Although these milestones represent significant scientific breakthroughs and achieving them was always understood to be a great challenge, their importance to the future success of the NIC program and stockpile stewardship cannot be overstated. Additionally, the rate that experiments were accomplished on NIF remains below design expectations as the Contractor's priority has been on the effort to achieve ignition in lieu of conducting stockpile stewardship experiments. The Contractor should develop an alternative research plan to move forward towards ignition, building on the research already completed and working in consonance with NNSA HQ and the ICF community.

Notable accomplishments include:

- Met 84 of 86 L1 and L2 milestones in the National Ignition Campaign (NIC). Enhanced experimental facility capabilities and examination of an expanded range of physics issues have led to considerable recent progress in studying the performance of the four major control variables for ignition.

- Demonstrated NIF and NIC primary criteria and functional requirements, including shots with precision delivery of energy in excess of 1.8 megajoules (ultraviolet) and 500 terawatts of power.

- Four NIC Level 2 Milestones due in Q4 FY2012 have been completed. These are; MRT 4114: Conduct polar drive experiments on NIF, MRT 4115: Performance Qualify NIC ignition target fabrication and assembly facilities, MRT 4118: Operationally Qualify first ARC beam line, MRT 4125: Provide technical input to support NIC reviews chartered by NNSA and MRT 4491: Prepare a Polar Drive Planning Document.

- The Contractor actively participated in the ICF strategic planning process that included providing input on the 5 Year ICF Program Plan, establishing the Indirect Direct Drive Working Group (IDIWG) and participating in the ICF Executive Meeting at DP/HQ. NIF hosted a series of workshops on the development of a long term NIF target diagnostic plan in support of the High Energy Density experiments for Defense Programs.

- Safety performance on NIF continues to be outstanding, with the TRC rate for NIC-related activities at 0.8 in September 2012.

Performance Objective 4: Reduce Nuclear Dangers through support to non-proliferation and threat reduction.

The Contractor did an excellent job in Reducing Nuclear Dangers through support to non-proliferation and threat reduction under Objective 4, earning an excellent rating on all five of the performance measures, consistent with the its self-assessment. The Contractor met or exceeded all of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did an excellent job providing technical expertise to secure vulnerable nuclear materials, impede sensitive nuclear trade, support nuclear materials detection, support arms controls commitments, and support the needs of the intelligence community.

In support of nonproliferation and threat reduction, the Contractor delivered detection components and monitoring systems to sites worldwide. The Contractor also assisted in limiting or preventing the spread of materials, technology, and expertise related to weapons of mass destruction (WMDs) through strategic approaches to nonproliferation policy and implementing international nonproliferation regimes. The Contractor helped eliminate or secure inventories of surplus materials and infrastructure that could be used for nuclear weapons through physical protection, removal, disposition, or destruction of materials and/or devices, and sustainable long-term oversight. The Contractor has also conducted a variety of workshops and training sessions for both national and international scientists, engineers, and customs and export control officials. Additionally, the Contractor developed advanced technologies for nonproliferation science and threat reduction. Significant coordination and collaboration continues between the Contractor and the international community through many threat-reduction working groups, which allows the Contractor and its international partners to share their expertise in nuclear explosion monitoring, nuclear safeguards, nuclear forensics, and radiation detection to enhance achievement of nonproliferation program goals. Tri-lab activities in support of the intelligence community (IC) have also progressed very well. Excellent progress is currently being made in cyber security, space situational awareness, and intelligence.

It is noted that there was an issue regarding the execution of a project for the NNSA Office of Emergency Response. The Contractor has acknowledged that funding for the development of a neutron multiplicity detector for NA-42/82 was used to perform work not within the project scope, which has caused delays in the projected completion date and aspects of the work to be reallocated to other laboratories. The Contractor is in the process of reimbursing the program out of its management fee and resolving the issues.

Notable accomplishments include:

- Working with the Russian Ministry of Defense implemented Material Protection, Control and Accountability practices; recovered 34 radioisotope thermoelectric generators from the Russian arctic; and secured radiological and nuclear materials in Africa.

- As task leader in Comprehensive Nuclear-Test-Ban Treaty Working Group B provided key technical contributions to developing on-site inspection capability, and developed and implemented innovative supercomputer 3D models for seismic wave propagation for nuclear-event monitoring.

- Coordinated a successful US–Russia Laboratory Directors Meeting in Sarov, Russia and participated in associated tours of five Russian Rosatom laboratories.

- Developed innovative technologies for national security such as: plastic scintillator materials that delivered first-ever time correlated neutron measurements with gamma rejection; produced two new plastic scintillator materials that boast more flexibility and performance than the gold standard in gamma ray detection; developed collection systems/architectures to support the war fighter, and small cube-satellites to warn of close satellite encounters.

- Led the logistical and program arrangements for the 4th Next Generation Safeguards Initiative International Meeting held in July in Hanoi, Vietnam.

- Developed and implemented innovative computational models for seismic wave propagation to advance seismic nuclear explosion monitoring. This work is part of a new paradigm for seismic monitoring that will use the Contractor supercomputing capabilities and advanced 3D earth models developed in collaboration with the academic community.

- Analyzed over 7,000 export-control license entities in a timely manner.

- Modeled and fielded successful measurements for the Source Physics Experiment (SPE) at NNSS. The test will provide important constraints on how explosions generate seismic signals. Also submitted the SPE3 pre-shot report combining near- and far-field modeling and analysis.

- Participated in the joint US–UK warhead dismantlement verification exercise, successfully integrating hardware form several laboratories.

- Led the modeling execution and data analysis for the Pele test, which assessed the ability of current technologies to discriminate signatures of nuclear weapon development activities from other actions.

- Two successful experiments were performed for the Energy Partition/ Energy Coupling (EPEC) Campaign that characterized the energy source for generating a scaled blast.

- Participated in the Warhead Measurement Campaign. LLNL has been invaluable in this campaign by successfully integrating all hardware associated with a Tri-lab effort.

Performance Objective 5: Strengthen the ST&E base and develop technical capabilities needed to support current and future LLNL missions.

The Contractor did an excellent job strengthening the ST&E base and developing technical capabilities needed to support current and future missions under Objective 5, earning an excellent rating on all four performance measures, consistent with its self-assessment. The Contractor met or exceeded all of the performance targets and evaluation criteria associated with this objective. The Contractor did an excellent job maintaining S&T excellence in order to supply capabilities to broader national security challenges, advancing competencies by investing internal resources (LDRD), developing and maintaining capabilities that strengthen and broaden our understanding of future needs, and assisting overall DOE science and energy security efforts.

The Contractor earned numerous prestigious external awards and published innovative papers at conferences and in scientific journals in peer-reviewed literature. Several external peer review committees met during FY 2012 at the lab and affirmed the quality and programmatic relevance of projects at LLNL. Internal investments (LDRD) were in alignment with DOE/NNSA's

mission and strategic plans. The investments promoted mission relevant R&D, generated new capabilities in anticipation of national needs, and promoted the development of intellectual property. Results from strategic investments are now coming to fruition. LDRD continues to be the lifeblood for the Contractor; its technologies generated from previous LDRD investments consistently garnered external recognition such as the R&D 100 Magazine Awards. LDRD contributed to 50% of the 6 R&D awards received by LLNL researchers during 2012. Furthermore, strategic business collaborations demonstrated that LLNL's technologies are being transitioned into industrial applications and well as supporting other federal agency missions. The Contractor pursued commercialization activities during 2012 by licensing 18 new technologies based on LDRD investments. It also entered into 4 new CRADAs, issued 77 new U. S. patents, filed 163 new records of invention, and earned $9.7 million in licensing royalty income.

Notable accomplishments include:

- Received several prestigious awards for scientific and technical achievements.
- Garnered six R&D 100 Awards, bringing LLNL's total to 143.
- Received the honor of having element 116 named Livermorium.
- Participated in the general S&T community through elected positions, workshops, and conferences.
- Published impactful, high-quality publications in peer-reviewed journals.
- Demonstrated a high-quality post-doc program and hired an average of more than five new postdoctoral researchers each month.
- Received two Presidential Early Career Awards for Scientists and Engineers and four DOE Office of Science Early Career Research Program (ECRP) Awards.
- Obtained a new award from the National Institutes of Health (NIH) and participated in projects with the National Aeronautics and Space Administration DOE's offices of Fossil Energy and Energy Efficiency and Renewable Energy.
- Delivered innovative ST&E results and generated new intellectual property in support of technology transfer.
- Formed new partnerships with industry, academia and local communities through the Livermore Valley Open Campus.

3.2 Operations

		NNSA	LLNS
Overall Operations Rating		Very Good	Excellent
6.	Provide and maintain the core facilities and infrastructure capabilities necessary to execute mission responsibilities.	Very Good	Excellent
7.	Maintain safe and environmentally sound operations in an efficient and effective manner in support of mission objectives.	Very Good	Excellent
8.	Maintain secure operations in an efficient and effective manner in support of mission objectives.	Very Good	Very Good

Performance Objective 6: Provide and Maintain the Core Facilities and Infrastructure Capabilities Necessary to Execute Mission Responsibilities.

The Contractor did a very good job of providing and maintaining the core facilities and infrastructure capabilities necessary to execute mission responsibilities under Objective 6, earning three excellent ratings, three very goods, and one satisfactory on its performance measures. The Contractor met or exceeded many of the performance targets, and evaluation criteria associated with this objective. Consistent with its self assessment, the Contractor did an excellent job completing de-inventory, executing environmental restoration and D&D programs, and executing construction projects. Although it rated itself as excellent in two of the three following measures, it did a very good job operating mission critical facilities, maintaining and managing facilities and infrastructure, and treating, storing, and disposing of waste from RHWM facilities. The Contractor demonstrated little progress toward achieving energy efficiency and water conservation goals and therefore earned a satisfactory rating as opposed to its self assessment rating of very good.

The Contractor continues to exceed NNSA's target for operating Readiness in Technical Base Facilities (RTBF) mission-critical facilities with a facility condition index (FCI) below the 5% goal (4.43%); mission dependent/not critical facilities are at 8.5%. During FY2012, the Contractor updated its Site Sustainability Plan. In addition, it continued certification of its Environmental Management System (ISO 14001), which is directly linked to the goals set in DOE's Sustainability Plan.

The deferred maintenance (DM) for all facilities other than Mission Critical (MC) has continued to grow in the last several years and is a concern. The MC Facility Condition Index (FCI) rate increase may not be stabilized without significant additional funding dedicated to replacing deficient assets. It is noted that the increasing FCI is an issue throughout the complex. Overall maintenance spending for the year was below the 2% goal by several million dollars based on the Replacement Plan Value for Enduring Facilities. The growth of F&I's Work Order backlog is also a concern and there is an immediate need to increase preventative maintenance.

The Contractor failed to meet overall Federal DOE energy intensity and water conservation goals. The Contractor is currently at a 3.5% water intensity reduction as compared to the NNSA goal of 10%. The Contractor is at 14% energy intensity and the FY12 NNSA energy intensity reduction target is 21%.

Notable accomplishments include:

- A DOE Secretary's Achievement Award for LLNL's contribution to the Fugitive Emission Working Group in reducing complex-wide SF_6 emissions by 50% (700,000 metric tons CO_2-e).
- An NNSA Best-In-Class Award for the Livermore Valley Open Campus (LVOC) High-Performance Computing Innovation Center: LLNL Program and Facility Development with the Environment in Mind.
- Completed de-inventory of Security Category I/II SNM from within the LLNL Plutonium Facility on schedule in September 2012.
- Made available RTBF facilities to support operations in support of de-inventory project activities.
- Executed the Category I/II mission transition plan and demonstrated readiness to operate under Security Category Level III in FY2013.
- Treated and disposed of 100% of low-level waste received by Radioactive and Hazardous Waste Management (RHWM) in FY2011 in addition to 21% of the entire inventory of low-level waste more than 1 year old.
- Completed all Mixed Waste Management Plan targets on time.
- The Long-Term Stewardship Project successfully met the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) milestone dates except for those dates that slipped as a result of extended regulatory agency review cycles.
- Supported LSO in working toward the deployment of solar generating capacity in the Livermore Site western buffer zone.
- Implemented a domestic water faucet aerator upgrade project and completed 85% of the project. The Contractor also implemented one native/drought tolerant landscape project at the West Gate Badge office.

Performance Objective 7: Maintain Safe and Environmentally Sound Operations in an Efficient and Effective Manner in Support of Mission Objectives.

The Contractor did a very good job of maintaining safe and environmentally sound operations in an efficient and effective manner in support of mission objectives under Objective 7, earning three very good ratings, and one good rating on its performance measures. The Contractor met or exceeded many of the performance targets, and evaluation criteria associated with this objective. It is noted that the Contractor rated itself as excellent for the objective despite rating itself very good on three of the four performance measures. The Contractor did a very good job maintaining effective environment, safety and health institutional programs, safe and efficient nuclear operations, and maintaining and improving nuclear safety programs; however, nuclear safety basis was rated as good.

The Contractor performed strongly in many ES&H areas such as environmental compliance, radiation protection, industrial hygiene, industrial safety, construction safety and emergency management. The industrial hygiene, industrial safety, and radiation protection programs all achieved significant improvements in the level of formality and consistency in the quality of services they provide through staff training and qualification and by formalizing procedures governing work by the disciplines. The fire protection program met goals for disposition of legacy deficiencies and completed emergency paging and emergency lighting upgrades. The Emergency Management Program upgraded documentation and supplies for the Disaster/Self-Help Program and developed a facility-level drill/exercise program for EPHA facilities. It is noted that additional work is needed in developing meaningful ES&H metrics as required by the Contractor Assurance System (CAS).

The Contractor's nuclear facility annual updates were submitted on time, with review and approval of the B332 annual update completed within the scheduled six month timeframe. There were concerns noted from the mid-year assessment regarding timeliness, quality and planning of safety basis amendments which continued through the last two quarters. The Contractor successfully completed the expert USQD pilot, resulting in resource savings. The Contractor has evidenced timely reporting of occurrences and PISAs. LSO identified as a deficiency in the fourth quarter that B331 non-adherence with the procedure NMTP-FMP-0701 resulted in systemic failures in meeting NMTP Calibration Program requirements resulting in programmatic impacts.

Communication by the Contractor with LSO has been very good. Implementation and maintenance of the Contractor nuclear safety programs continues to be verified through LSO assessments, reviews, and the Independent Verification Review (IVR) process. The Readiness Program and the IVR process have been successfully integrated to improve the process. The Contractor demonstrated mastery of the checklist Readiness Assessment process. To address a pattern of inaccurate projections of start dates for contractor Readiness Assessments noted by LSO, the Nuclear Operations Directorate has driven increased participation by Nuclear Materials Programmatic Operations staff at monthly Readiness Review Board meetings. The management of the nuclear safety programs through the year was compliant and effective. All safety SSCs have been available and operational. As required, the Contractor completed a full assessment of

nuclear facility maintenance implementation of DOE O 433.1B that included the Superblock, RHWM, and F&I. Training leaders and managers continue to collaborate to improve nuclear facility training. The Contractor criticality safety program exceeded expectations as demonstrated through a combination of operator training compliance, criticality safety inspections, criticality safety evaluations and criticality safety program staff continuing training activities.

There were opportunities for improvement in the quality, timeliness, and planning (e.g., failure to submit the supporting documentation for the 14 key criteria for the minimum staffing amendments; failure to follow SQA requirements for modeling software for calculations; lack of communication between program, facility, and safety basis staff resulting in confusing or incorrect submittals) regarding the safety basis documents submitted to LSO.

During FY2012 a large number of lock out/tag out (LOTO) events were reported in ORPS, raising concerns regarding field implementation of the LOTO program. The Contractor line management must provide focused attention on electrical safety.

Notable accomplishments include:

- Received a three-year renewal for select-agent registration; a three-year accreditation by the Association for Assessment and Accreditation of Laboratory Animal Care; and a four-year renewal for animal welfare assurance by the National Institutes of Health.
- Revised Construction Safety Program Plan to include the National Ignition Facility.
- Developed a hands-on practical lockout/tag-out training course.
- Continued strong performance in the area of laser safety.
- Continued operation at an outstanding level in the area of radiation protection.
- Met Emergency Readiness Assurance Plan (ERAP) commitments to NNSA/LSO per the FY2012 schedule.
- Improved industrial hygiene in the areas of communication, hazard assessment, formality, and efficiency.
- Procured and installed an electronic health record (EHR) system.
- Exceeded expectations in the areas of National Environmental Policy Act, Endangered Species Act, and the National Historic Preservation Act.
- Developed, approved, and maintained high-quality safety basis documents in accordance with 10 CFR 830, DOE orders and standards, and LLNL procedures.
- Maintained effective institutional Independent Verification Review (IVR) and USQ processes.

Performance Objective 8: Maintain Secure Operations in an Efficient and Effective Manner in Support of Mission Objectives.

The Contractor did a good job of maintaining secure operations in an efficient and effective manner in support of mission objectives under Objective 8, earning two excellent ratings, one good rating, and two good ratings on its performance measures. The Contractor met or exceeded many of the performance targets and evaluation criteria associated with this objective. The Contractor did an excellent job recruiting, sustaining, and exercising the talents of people and critical skills needed to protect the Enterprise and planning for post de-inventory security operations. It did a very good job managing risk to effectively and efficiently address the spectrum of security threats, and a good job providing assurance of effective and sustained performance and supporting the NNSA Enterprise through DNS management excellence.

The Contractor's overall security rating of good is supported by its accomplishment of critical initiatives that were a high priority to NNSA leadership and DNS.

CAT III Transition
The Contractor completed post de-inventory security program planning and was ready to implement CAT III security operations before October 1, 2012. On October 2, 2012, LSO approved LLNL's Site Security Plan and downgraded its facility clearance authorization from CAT I to CAT III SNM.

- LLNL's new security posture will save NNSA at least $40 million per year;

- LLNL de-inventory of CAT I/II SNM was completed ahead of schedule. Security Organization support of de-inventory was instrumental in achieving this objective.

Sustaining CAT I operations through de-inventory
Until de-inventory was accomplished, it was essential that the Contractor sustain CAT I security operations. It effectively planned and executed the following in support of sustaining CAT I security operations:

- Retention bonuses;

- Contingency plans with NNSA sites for Protective Force (PF) augmentation;

- Post prioritization to maintain Category I security strategy effectiveness in the event of unexpected PF absences.

LLNL demonstrated assurance of effective operations through the Performance Assurance Program. FY12 physical security expenditures were managed carefully to ensure normal Category I operations were maintained, and to ensure that funding was available if contingency plans needed to be implemented. No issues associated LLNL's CAT I security program (findings, incidents) were identified.

Performance Assurance
In addition to the Satisfactory security survey rating issued by LSO (the highest rating permitted by DOE HSS policy), LLNL security operations were the subject of several HSS reviews, all of

which resulted in effective performance ratings and acknowledgement of LLNL achievements. Examples are provided below:

- DOE HSS Office of Security and Cyber Evaluations (HS-44);
- Inspection of Special Access Programs (SAP) and Sensitive Compartmented Facilities (SCIF);
- DOE HSS Office of Classification (HS-61)) On-Site Evaluation of Classification and Controlled Unclassified Information Programs.

The Contractor also conducted assessments of its security operations and self identified issues and initiated corrective action planning. The Contractor provided accurate summaries of its security operations and key accomplishments in quarterly program and budget reviews, and Management Systems Assurance Program and Cyber Security Program Reports. Key program documents such as the Annual Operating Plans, quarterly Site Safeguards and Security Plan updates, Cyber Security Site Plan and Site Security Plan were submitted on-time and approved by LSO. The Contractor made significant progress in the development of a Conduct of Security Program that is aimed at strengthening its formality in the governance of security operations.

While the Contractor's overall performance was effective, LSO will continue to closely monitor its progress in resolving deficiencies with its policies and procedures that govern site security program requirements. LSO identified deficient site-level policies and procedures as contributing factors to compliance and performance issues. For example, in FY 2012, the Contractor's a lack of governing policies and procedures for destruction of classified hard drives resulted in a security incident. LSO and NNSA HQ also identified deficiencies in budget formulation and execution activities, in which budget submission and execution deliverables suffered from quality control problems, requiring senior management intervention. The Contractor is implementing corrective actions intended to strengthen its formal governance of security operations which are scheduled to be completed by June 2013.

Additional notable accomplishments include:

- Conducted operations consistent with the submitted budget, Annual Operating Plans (AOPs), the Site Safeguards and Security Plan (SSSP), and the Cyber-security Program Plan, which were all approved by LSO.
- Developed a program to enhance formality of security operations.
- Supported NNSA Policy Letters (NAPs) with the development and implementation of NAP requirements into site policies, procedures, and practices.
- Continued consolidation activities of physical security activities with SNL/CA.
- Conducted an annual training needs assessment to address security skills gaps according to the SO Training Plan and NAP processes.
- Achieved the SO goal for training completion, the highest percentage of any Laboratory Directorate.

- Implemented cost savings in FY2012 activities (e.g., reduced overtime) so that resources could be devoted to effort with significant future benefit, minimizing the impact of budget reductions in FY2013 and beyond.
- Developed and implemented a leadership training program for SO staff.
- Conducted approximately 125 self-assessments of security operations.
- Developed and implemented corrective actions for LSO findings.
- Developed staffing levels and completed security program planning for post de-inventory security operations.
- Provided Material Control and Accountability (MC&A) support to LLNL's de-inventory process.

3.3 Institutional Management

		NNSA	LLNS
Overall Institutional Management Rating		Good	Very good
9.	Manage business operations in an effective and efficient manner while safeguarding public assets and supporting mission objectives.	Excellent	Excellent
10.	Governance assures performance and creates long-term sustainable value for the institution.	Good	Very good

Performance Objective 9: Manage Business Operations in an Effective and Efficient Manner while Safeguarding Public Assets and Supporting Mission Objectives.

The Contractor did an excellent job in managing its business operations in an effective and efficient manner by exceeding nearly all performance expectations under Objective 9, earning two excellent ratings and one very good on its performance measures, consistent with its self assessment. The Contractor did a very good job performing effective financial management and an excellent job demonstrating an effective and efficient Supply Chain function and maintaining a centralized Strategic Human Capital Management Directorate that provides leadership and infrastructure to ensure recruitment, development and maintenance of the workforce.

The Contractor maintained an overall NNSA OFFM satisfactory rating, passing nearly all financial measures. The Contractor performed effective indirect rate management and improved internal controls to help ensure that the labor charging practices are accurate and compliant. The Contractor significantly improved its compliance with Cost Accounting Standards by eliminating NIF special allocations and submitting a revised Disclosure Statement that corrected other potential non-compliances. Although the Contractor significantly improved its internal controls in the area of time and effort reporting, not all corrective actions in response to the findings in

Internal Audit Report No. 10-14 were implemented in a timely manner. The report was issued in September 2010 but some corrective actions related to general skills training were not implemented until late in FY 2012. Additionally, a follow-up internal audit determined that the corrective actions to improve effort charging related to required Laboratory general training was only partially effective. NNSA OFFM found these same issues through its financial management oversight and consequently did not pass the Contractor on its corrective action follow-up measure.

The Contractor continued to manage its property and procurement systems in an outstanding manner. The Property Management system at the lab maintained its status as an approved property system and received a three-year extension. The Contractor performed at an outstanding level in its property management practices, which were recognized by several "outstanding" assessment results. Additionally, the Contractor maintained an approved purchasing system throughout the year and effectively supported the NNSA Supply Chain Management Center initiative by meeting or exceeding its goals. In the area of small business performance, the Contractor significantly exceeded its challenging small business goal of 50% and received the DOE Small Business Achievement of the Year Award. While the Contractor's overall performance was at the excellent level, it is noted that improvements need to be made in the scheduling and timely support of real estate actions.

In the area of Contractor Strategic Human Resource Management (SHRM), the Contractor benefits from strong leadership. This past year the SHRM group launched its first full year performance dashboard. This dashboard is a useful tool that has performance indicators, the capability to inform management and enable timely decision-making, and it supports accountability and contractor assurance. Of concern is the yellow in the institution metric for employment cycle time. The goal is less than 60 days but the final result was 121 days. The cause of the excessive cycle time seems to be the amount of time to identify and select the best candidate. The Contractor coded this result as a yellow but with the results double the goal, it probably should have been coded a red. This excessive time may be contributing to the loss of good candidates. It does not appear that Contractor senior management at the institutional level is using the results to improve performance.

Notable accomplishments include:

- Completed 10 internal and 5 external financial audits in FY2012 with no significant findings (one report is pending); reviewed and tested 39 sub-processes as part of the A-123 program with no reportable conditions; and 41 risk occurrences and 153 risk-control combinations were tested with no failures.

- Eliminated all NIF special allocations, e.g. SCAP rates, and submitted a revised disclosure statement that corrected other potential CAS non-compliances.

- As of August 31, 2012, processed more than $504 million in procurements in FY2012 with no audit findings.

- Maintained LLNL's rating as an approved property management system and received a three-year extension, with the NNSA Annual Personal Property Assessment rating LLNL Property Management as outstanding.

- Led a benchmarking effort on the governance models of other laboratories/FFRDCs. The NNSA Livermore Site Manager and the NNSA Senior Procurement Executive participated in the effort. All Laboratories selected for the interviews are multi-disciplinary research facilities in national security with sponsors that include DOD, NASA, and DOE Office of Science.

- Met institutional needs for workforce recruitment, development, and sustainment through activities beyond the normal scope of human resources operations, which included special efforts in workforce policy modernization, succession planning, leadership development, and award-winning employee engagement programs.

Performance Objective 10: Governance Assures Performance and Creates Long-Term Sustainable Value for the Institution.

The Contractor did a good job in execution of its Governance and Performance Assurance initiatives under Objective 10, earning a combination of good and very good ratings on its performance measures. The Contractor met or exceeded many of the performance targets, and evaluation criteria associated with this objective. The Contractor did a very good job improving the agility of the information resource systems, effectively implementing a legal management plan, developing and implementing initiatives to increase effectiveness and efficiency, demonstrating ES&H line management accountability, and reducing the generation of hazardous waste. It did a good job effectively enabling continuous performance improvement through the Contractor Assurance System (CAS) and integrating and aligning the Quality Assurance Program with the Management Assurance Program.

A critical part of successful Institutional Management is assuring performance and long term viability at the National Laboratory level while demonstrating the necessary leadership to assure the overall success of the NNSA enterprise mission. This can only be achieved through an effective and active partnership with NNSA. In the past year there have been several serious management challenges including the pursuit of ignition at NIF, the transition to a compliant overhead rate structure, and planning for the future operations of the NIF facility. In addressing these challenges, LLNS management has not consistently acted in partnership with NNSA in seeking solutions. There have been numerous examples where LLNS management actions have made these problems more difficult to solve. There has also been a notable unwillingness of the parent companies to become engaged in resolving these issues. Moreover, the Contractor did not work effectively across its internal stovepipes of ICF, Science, and Weapons to communicate and resolve the discrepancies of the ICF codes not predicting reality in the implosions. These discrepancies were left unresolved well after they became apparent to the Contractor, which was a failure of its institutional leadership. These management failures have had significant consequences for the Laboratory as well as for the NNSA organization as a whole. As a result, a significant reduction was made to the overall rating for this performance objective.

The CAS continued to mature this past year with the institutionalization of the MAS Portal. The Contactor Assurance Office has fully implemented the CAS in its functional area; it continues to work hard to institutionalize implementation of the system across the other 28 functional areas at the laboratory. While the CAS functional area has fully implemented its use of the system and has established processes, procedures and a set of tools for the institution, there is inconsistent implementation of CAS across the other 28 functional areas. The Contractor completed all four essential targets in the area of Information Resources Management. All targets were completed on schedule and within budget. Additionally, the Contractor did a very good job managing difficult and costly litigation this past performance year. The Contractor won a significant appeal in a major piece of intellectual property litigation, and negotiated a favorable settlement for the Government in a conflict of interest matter. The Contractor continues to make improvements to improve the overall governance and performance of the Laboratory by performing Functional Management Reviews of selected functional areas and utilizing parent reach back resources in an effective manner. This year, the Contractor increased its integration efforts with Los Alamos National Laboratory (LANL) and developed a formal plan that will hopefully generate additional efficiencies in the next few years.

Although there has been general improvement to the QA program to provide integration of the institutional QA Program with the PADs, there are still significant improvements to be made in the institutional QA program. Many of the changes required to achieve 9001 accreditation should drive improvements in the areas of concern. Finally, the Contractor achieved very good results from its waste minimization program this year. In four out of five targeted high volume waste types, the Contractor exceeded the waste minimization goals established at the beginning of the year. There were notable reductions in Extremely Hazardous Waste and Site-Wide Low Level Waste, excluding the National Ignition Facility.

Notable accomplishments include:

- Received Board of Governor approval of the CAS and CAS Description document, as well as concurrence with the Contractor declaration to the Site Office Manager of readiness to proceed with NNSA Affirmation pursuant to NAP-21 on Transformational Governance and Oversight.

- Consolidated over 500 servers into the B112 Data Center, 100 more than planned.

- Established the on-demand server program which has improved the time-frame from a 12 week turn-around for a physical server (from initial request, purchase, delivery, setup and configuration) down to a 15 minute time-frame for a Virtual Server setup.

- A complex intellectual property and conflict of interest investigation resulted in assignment of substantial intellectual property to the Laboratory and payment for the benefit of LLNL of almost $1.6 million.
- Procedures were drafted to meet ISO 9001 certification and are in the review process for approval.

- The new Director's Monthly Performance Review (MPR) format drove an institutional performance review of line management of, and accountability for, ES&H.
- Achieved reductions in all five waste streams (hazardous, extremely hazardous, low-level waste excluding NIF, low-level waste NIF only, and mixed waste).

4.0 Award Term Incentives

Completion status for each of the Award Term Incentive (ATI) Measures is summarized below. Completion of the measures was validated by the assigned LSO Subject Matter Expert, Assistant Manager, and approved by the Contracting Officer as documented on the individual ATI Measure Completion Forms, which are available in the PER back-up file.

#	Description	NNSA	LLNS
1.	Stockpile Stewardship Mission (Mandatory)	Pass	Pass
2.	Site Transformation Activities	Pass	Pass
3.	Sustainable Management	Pass	Pass
4.	Accredited Management Systems	Pass	Pass
5.	Development and Management of Interagency Work	Pass	Pass

ATI 1: Stockpile Stewardship Mission

The Contractor fully met this ATI measure by meeting all of the completion criteria set forth in the PEP as documented in the approved PEP Completion Form. The Contractor did an excellent job of conducting the essential core weapon program activities and supporting the measures associated with the ATI #1. All L2 milestones associated with this ATI were successfully completed.

ATI 2: Site Transformation Activities

The Contractor fully met this ATI measure by meeting all of the completion criteria set forth in the PEP as documented in the approved PEP Completion Form. The Contractor has done an excellent job in FY2012 accomplishing the tasking associated with ATI#2 requirements. The Contractor completed de-inventory with no foreseen issues. Furthermore, the Contractor has completed all funded activities in the Cat I/II Mission Transfer Program Plan and Transitioned B332 for future work.

ATI 3: Sustainable Management

The Contractor fully met this ATI measure by meeting the majority of the completion criteria set forth in the PEP as documented in the approved PEP Completion Form. The Contractor submitted the Site Sustainability Plan (SSP) on time and met all of the requirements in the DOE and NNSA guidance documents. Some initiatives described in the SSP were implemented in

FY2012. The Contractor has assisted LSO in the RFI/Solicitation process for a small onsite renewable energy project.

The Contractor implemented some low cost initiatives to meet minimum requirements for setback controls during the off-hours and to respond to a previous IG finding (B131, T5475). There are still many buildings with a combination of DDC and pneumatic systems that need to be updated and controlled for off-hours setbacks. The Contractor supported a Functional Management Review in December 2011, but has been slow to implement recommendations from this excellent team consisting of Sustainability experts from LANL, SNL, UCOP and Bechtel. The EISA building energy audits were conducted in the required number of buildings, but little has been implemented for energy and water saving recommendations. The Contractor began implementation of ECM 3.2 low cost energy saving opportunities identified at several facilities in FY2010 (B113, B115, B391, B691, U291). Two buildings (B170, B191) with documented energy conservation opportunities have not been addressed yet. The Contractor completed 85% of the installation of low flow sink aerators (about 1,800 in total) across the site in FY11-12 and installed one native/drought tolerant are of landscaping at the West Gate Badge office in August.

The Contractor lost gains it achieved over the past few years and went from 12% to 3.5% water intensity reduction. The DOE/NNSA FY target is 10%. The Contractor struggled to recover from a 2 month alternate water supply (Zone 7) in December/January as well as the ramp-up at TSF to support Sequoia. There was little change in areas the Contractor could have reduced water use, such as irrigating turf areas. Some small progress was made on GHG reduction with the Contractor currently on target at 14% related to the DOE/NNSA goal (28% by 2020). An Employee Commute survey was issued in September 2012 to get better information about opportunities for improvement and Scope 3 reductions. The Contractor is currently at 10% related to a DOE/NNSA goal of 13% in 2020. Very little progress was made on energy intensity reduction with some projects initiated but little performance (15%) was demonstrated towards the DOE/NNSA FY target (21%) and 30% goal in FY2015. FY2011 reduction was 12.85%. The Contractor made some progress and is roughly at just over 6% complete towards meeting the FY2015 goal, the DOE/NNSA target is 9%. Investments in energy saving projects have been made by LSO to pursue a LEED existing building certification for B311. The renewable energy goal was met through the purchase of RECs by DOE/NNSA on behalf of the Northern California Power Consortium.

The Contractor is involved with DOE building energy efficiency Hub in Philadelphia. It is aiding its simulation, uncertainty quantification, and visualization expertise, in order to advance the efficiency of existing buildings. The Contractor has also assisted with the management of the Hub, helping construct evaluation metrics and program guidance. It is now hosting the HPC4Energy competition, where six private companies were chosen to gain access to LLNL computational resources in order to improve their business exploration and advance energy products.

The Contractor is metering 96% of its electricity using the advanced electric metering system and 55% of natural gas usage on an individual building basis. The Contractor completed all required building energy audits. The Contractor should take full advantage of the tools provided for achieving energy savings through the ESPC including the advanced metering system and

implement a best practice such as billing for energy use and/or an awareness campaign/contest with the programs for building energy usage similar to other NNSA sites and DOE /HQ.

ATI 4: Accredited Management Systems

The Contractor fully met this ATI measure by meeting all of the completion criteria set forth in the PEP as documented in the approved PEP Completion Form. The Contractor successfully completed two external surveillance audits for the Occupational Health and Safety Management System (OHSMS 18001) with continued certification recommended. The ISO 14001 (Environmental Management System) successfully achieved recertification required triennially. Management self-assessments and internal independent audits of OHSMS 18001 and ISO 14001 were scheduled in the IAP and conducted by the Contractor in FY2012. Findings from the assessments are being tracked in the Issues Tracking System (ITS) and actions are being taken to address the issues. Actions are being taken to integrate the management systems for continuous improvement, such as preparing an integrated ES&H Communications & Awareness Plan. Steady progress continues on development of institutional documents and procedures for ISO 9001 implementation, e.g., Quality Management System Description Document, revised Institutional Quality Assurance Plan, Control of Nonconforming Items procedure, and revised Issues and Corrective Action Management procedure. Observation by LSO of working group meetings shows proactive engagement by the Principal Associate Directors (PADs).

ATI 5: Development and Management of Interagency Work

The Contractor established an interagency mission business office during FY 2012 as a focal point for the coordination and submittal of work packages to the LSO for approval. Centralizing this function has helped the Contractor ensure uniformity of DOE's review factors, identify changes in terms and conditions being requested by the sponsors, improve work package quality, and improve cycle time.

NNSA HQ established a baseline to reduce the cycle processing time of federal work proposals to 18.6 days. During the past 12 months, 145 federal work packages were approved with an average cycle time of 13.0 days. A revised workflow process was implemented. In addition, the Contractor conducted a minimal survey to obtain customer feedback. The feedback was constructive and the Contractor will be expanding the survey effort for additional projects for FY 2013.

The Contractor's Global Security organization achieved monthly project reporting between 98-100% of 450 monthly reports. The monthly project reports are the primary basis for discussing accomplishments and issues. The Contractor's project reporting system at the laboratory has undergone beta testing during FY 2012. The Contractor also conducted proposal development training. Workshops included idea and proposal development and financial resource information. The Contractor has been in the process of development of a next generation web based tool for project planning and process tracking.

Below is a summary of highlights of approved FY 2012 WFO projects supporting other federal agency missions:

- L-11089, amended for continued support by the Army to add $12.7 million for the Joint Conflicts and Tactical Simulation program.
- L-12148, modification by the AFRL for $14.6 million to support Prompt Global Strike.
- L-12394, modified by DoD to add $28.8 million for DPAL.
- L-12636, modified by NIH, to add $2.9 million for Bioassays AMS.
- L-12653, modified by JIEDDO to add $19.9 million for High Power Microwave research.
- L-13977, modified by Dept of State, to add $2.2 million for Vulnerability Analysis for Iraq and Training.
- L-14226, sponsored by DoD for multi-scale reactive modeling for computation toolset for munitions/energetic materials for $2.6 million.
- L-14318, sponsored by DTRA for Forensics Tools for $2.2 million.
- L-14320, sponsored by DSWA for nuclear threat detection for $1.2 million.
- L-14345, sponsored by DHS FEMA for CBRNE Support for $1.6 million.
- L-14370, sponsored by DHS for radiation nuclear inspection and evaluation for $2.5 million.
- L-14424, sponsored by DHS for nuclear/radiological imaging platforms for $4.3 million.
- L-14432, sponsored by DTRA on DNA detection/viruses for $3.0 million.
- L-14480, sponsored by DTRA on chemical threat responses for $13.1 million.
- L-14489, sponsored by DHS for $5.0 million for testing evaluations.
- L-14549, sponsored by DHS for 4.4 million for explosives detection program.

Appendix A

A-1 Programs Measure Ratings

Note that rationale in support of the individual ratings is available in the Performance Evaluation Report (PER) back-up file.

Measure	Description	NNSA	LLNS
1	Understand the condition of the stockpile, extend the life of nuclear warheads and support dismantlement.	Excellent	Excellent
1.1	Management weapons systems work.	Excellent	Excellent
1.2	Conduct assessments of weapons systems.	Excellent	Excellent
1.3	Manage and support LEPs.	Excellent	Excellent
1.4	Manage options for the Stockpile.	Excellent	Excellent
1.5	Support dismantlement complex wide.	Excellent	Excellent
2	Advance the science, technology, and engineering to support the mission through experiments and computations.	Excellent	Excellent
2.1	Execute Key SNM and Integrated Experiments.	Excellent	Excellent
2.2	Advance 3-D Assessment and UQ Capabilities.	Excellent	Excellent
2.3	Execute and support Sequoia, TLCC, and Exascale.	Excellent	Excellent
2.4	Advance Predictive Capabilities (PCF).	Excellent	Excellent
2.5	Advance Material Models and Theory.	Excellent	Excellent
2.6	Assess & Innovate Options for the Stockpile.	Excellent	Excellent
3	Advance the science, technology, and engineering to support the mission through ICF.	Very Good	Excellent
3.1	Successfully lead execution and completion of the National Ignition Campaign (NIC).	Good	Very Good
3.2	Successfully transition NIF to routine facility operations and begin to transition to a user facility for weapon and High Energy Density science by the end of FY 2012.	Very Good	Excellent
3.3	Execute high energy density experiments on the NIF to support current and future needs of Stockpile Stewardship, other national security, Fundamental Science, and energy missions.	Very Good	Excellent
4	Reduce Nuclear Dangers through support to non-proliferation and threat reduction.	Excellent	Excellent
4.1	Provide technical expertise to secure vulnerable Nuclear Materials.	Excellent	Excellent
4.2	Provide technical expertise to impede sensitive nuclear trade.	Excellent	Excellent
4.3	Provide technical expertise to support nuclear materials detection.	Excellent	Excellent
4.4	Provide technical expertise in support of arms control commitments.	Excellent	Excellent
4.5	Support the needs of the intelligence community.	Excellent	Excellent

Measure	Description	NNSA	LLNS
5	Strengthen the ST&E base and develop technical capabilities needed to support current and future LLNL missions.	Excellent	Excellent
5.1	Maintain S&T excellence as demonstrated through externally validated achievements and selected metrics in order to supply capabilities to broad national security challenges.	Excellent	Excellent
5.2	Advance science, technology and engineering competencies by investing internal resources (including LDRD) to enhance capabilities and anticipate future NNSA needs.	Excellent	Excellent
5.3	Develop and maintain ST&E capabilities that strengthen and broaden our understanding of future needs.	Excellent	Excellent
5.4	Assist overall DOE science and energy security efforts by effectively executing externally funded R&D efforts to support sponsor needs.	Excellent	Excellent

A-2 Operations Measures

Note that rationale in support of the individual ratings is available in the PER back-up file.

Measure	Description	NNSA	LLNS
6	Provide and maintain the core facilities and infrastructure capabilities necessary to execute mission responsibilities.	Very Good	Excellent
6.1	Operate mission critical and user facilities as national capabilities.	Very Good	Excellent
6.2	Maintain and manage F&I assets with flexibility to support capabilities required for current and future missions.	Very Good	Excellent
6.3	Demonstrate progress towards achieving the Federal and DOE energy efficiency and water conservation goals.	Satisfactory	Very Good
6.4	Complete the de-inventory and program transfer according to the 2012 De-inventory Plan.	Excellent	Excellent
6.5	Execute effective Environmental Restoration and D&D programs.	Excellent	Excellent
6.6	Treat store and disposition waste from RHWM facilities in a safe, compliant and efficient manner to support mission objectives.	Very Good	Very Good
6.7	Execute all projects consistent with project baselines and DOE O 413.3.	Excellent	Excellent
7	Maintain safe and environmentally sound operations in an efficient and effective manner in support of mission objectives.	Very Good	Excellent
7.1	Maintain effective environment, safety, and health institutional programs.	Very Good	Excellent

Measure	Description	NNSA	LLNS
7.2	Nuclear Safety Basis - Establish and maintain a compliant, effective, and efficient safety basis for the LLNL nuclear facilities and activities.	Good	Very Good
7.3	Nuclear Operations - Implement and maintain safe, compliant, effective, and efficient nuclear operations.	Very Good	Very Good
7.4	Nuclear Safety Programs - Maintain and continuously improve compliant, effective, and efficient nuclear safety programs.	Very Good	Very Good
8	Maintain secure operations in an efficient and effective manner in support of mission objectives.	Good	Very Good
8.1	Support the NNSA Enterprise through DNS Management Excellence.	Good	Very Good
8.2	Manage risk to effectively and efficiently address the spectrum of security threats.	Very Good	Very Good
8.3	Recruit, sustain, and exercise the talents of people and critical skills needed to protect the Enterprise.	Excellent	Excellent
8.4	Provide assurance of effective and sustained performance.	Good	Very Good
8.5	Plan for post de-inventory security operations.	Excellent	Excellent

A-3 Institutional Management Measures

Note that rationale in support of the individual ratings is available in the PER back-up file.

Measure	Description	NNSA	LLNS
9	Manage Business Operations in an Effective and Efficient Manner while Safeguarding Public Assets and Supporting Mission Objectives.	Excellent	Excellent
9.1	Perform effective financial management in accordance with applicable requirements and standards.	Very Good	Very Good
9.2	Demonstrate an effective and efficient Supply Chain Management function.	Excellent	Excellent
9.3	Maintain a centralized Strategic Human Resources Management (SHRM) Directorate that provides leadership and infrastructure to ensure recruitment, development, and maintenance of the workforce.	Excellent	Excellent
10	Governance assures performance and creates long-term sustainable value for the institution.	Good	Very Good
10.1	The Contractor Assurance System (CAS) effectively enables continuous improvement of LLNL performance, integrates and aligns LLNL management systems and supports corporate parent governance.	Good	Very Good
10.2	Improve the performance and agility of the IRM systems.	Very Good	Excellent

Measure	Description	NNSA	LLNS
10.3	Effectively implement and follow a Legal Management Plan that complies with 10 CFR Part 719 and DEAR 970.5228-1 and incorporates best practices and procedures.	Very Good	Very Good
10.4	Develop and implement initiatives to increase the effectiveness and efficiency of the Laboratory.	Good	Excellent
10.5	The Quality Assurance Program is integrated and aligned with the Management Assurance Program to assure that the quality of work meets or exceeds customer requirements and expectations.	Good	Good
10.6	Line Management demonstrates ES&H accountability through documented actions.	Very Good	Excellent
10.7	Reduce generation of hazardous, low-level, and mixed low level waste.	Very Good	Very Good

A-4 Stretch Targets and Results

The PEP included nine stretch targets in Programs, five in Operations, and five in IM. The following table summarizes the status of the stretch targets in each performance area:

Target Status	Programs	Operations	Institutional Management
Pass	8	5	5
Fail	1	0	0
Total	9	5	5
% Passed	89%	100%	100%*

Completion status for each of the Stretch Incentive Fee Targets is set forth as follows in Programs, Operations, and IM. Completion of the targets was validated by the assigned LSO Subject Matter Expert, Assistant Manager, and approved by the Contracting Officer as documented on the individual Target Completion Forms, which are available in the PER back-up file.

Programs

Target	Description	Status
Target 1.2.1	Execute scaled all-optical hydro shot.	Pass
Target 1.2.2	Extend INWAP.	Pass
Target 2.1.1	Develop HED platforms to meet SSP objectives.	Pass
Target 2.2.1	Assess capability of application of sub-grid models in WCI simulation codes on NIC ignition capsules.	Pass
Target 2.2.2	Perform increased-fidelity down-hole simulations of UGTs with the ASC Code System as part of the annual assessment process.	Pass
Target 2.5.1	Demonstrate Ramp Compression on Phoenix.	Pass
Target 2.5.2	Develop improved gas EOS for specific applications.	Pass

Target	Description	Status
Target 2.6.1	Execute surety experiment.	Pass
Target 3.1.1	Exceed expectations in execution of the National Ignition Campaign by completing any of the following three tasks: 1. Perform two ignition shots with Gain >1. 2. Complete the NIC level-2 milestone "Demonstrate Gain = 1 in a DT implosion experiment" more than 30 days ahead of schedule. 3. Complete the NIC level-2 milestone "Demonstrate limited alpha heating in a DT implosion experiment" more than 30 days ahead of schedule.	Fail

Operations

Target	Description	Status
Target 6.6.1	Package/repackage additional 20 drums of TRU consistent with the EM-12 packaging instructions.	Pass
Target 7.1.4	Continue the efforts to manage chemical inventories by eliminating legacy chemicals that no longer have a future mission use. Each PAD or AD will meet one of the following goals: 10% of total chemical inventory, 10% of total gas cylinder inventory, 5% of chemical inventory over 10 years of age or 5% of gas cylinder inventory over 10 years of age. Use 10/1/2010 date to calculate inventory quantity.	Pass
Target 7.1.5	Reconfigure the existing Disaster/Self Help Program to optimize the operation of institutional infrastructures, the upkeep of institutional-level documentation, and the distribution and maintenance of supplies/equipment.	Pass
Target 7.1.6	Assist Facility/Program Management in the development, documentation, and provide guidance in the implementation of a facility-level drill/exercise program for those facilities having an Emergency Planning Hazards Assessment (EPHA).	Pass
Target 7.1.7	Develop/improve capabilities for fire modeling and simulation in the LLNL Fire Protection Group by providing a fire model training course for FPEs; apply fire modeling to at least one LSO/LLNL mutually agreed upon fire protection-related project for which the results of the fire modeling add value.	Pass

Institutional Management

Target	Description	Status
Target 9.1.7	Demonstrate consistent use of LSO approved rates for estimating, accumulating and reporting costs. In addition, establish and maintain internal controls within the estimating system to ensure the use of approved forward pricing rates by all programmatic organizations.	Pass
Target 9.2.4	Execute a business review of the LLNL Fleet Management program by 12/31/11 to identify the most cost effective method(s) for (1) maintaining, repairing, and fueling of government vehicles leased from GSA, and (2) managing the GSA government vehicle vehicles to achieve the "right size" for the fleet with a goal of full implementation by12/31/12. Begin implementation in FY11 and meet applicable milestones.	Pass
Target 9.3.1	Design a succession planning model and processes; facilitate and launch a pilot in one direct and one indirect PAD for an identified population; and assess pilot.	Pass
Target 9.3.2	Establish individual employee performance elements that serve as a basis for eligibility for individual variable pay.	Pass
Target 10.4.2	Put in place the organizational, personnel, program, and operational changes necessary to accommodate the modified overhead rate structure for the Institution expected in FY 2013.	Pass

A-5 Multi-Site Targets

Multi-Site	Multi-Site Target	Status
1 Stockpile **(25% minimum of Multi-Site total)**	1.1 **Execute the defined Surveillance Program.** **Implementing Criteria:** 1. 1.1 Each site will execute the surveillance program, according to the PCD and specific design agency requirements. 1.1.2 Develop and implement methods of improving programmatic performance and efficiencies as identified in the value stream analysis. **Exit Criteria:** **1.1.3** Complete FY12 surveillance activities in accordance with the PCD per design agency requirements. 1.1.4 Provide complete cycle reports to design agencies. 1.1.5 Report FY12 surveillance activities to QERTS.	Pass

Multi-Site	Multi-Site Target	Status
	1.3 Complete FY12 B61 Phase 6.3 Development Engineering activities that enable a 2017 FPU. **Implementing Criteria:** 1.3.1. Complete component design reviews, IPG component Gate A & B and issue ESR Stage I for B61 ship level entities IAW B61 Phase 6.4-6.6 integrated master schedule (IMS). 1.3.2. Provide hardware, assembly and conduct environmental flight testing (IMTU & VFA) to define STS environments IAW the B61 Phase 6.3-6.6 IMS. 1.3.3 Continue component development builds to ensure readiness for a 2017 FPU IAW B61 Phase 6.3-6.6 IMS. 1.3.4. Finalize and issue life of program buy requirements for vendor components IAW B61 Phase 6.3-6.6 IMS. **Exit Criteria:** 1.3.5 Conduct System Conceptual Design Review. 1.3.6 Achieve FPM approved TRL/MRL targets.	Pass
	1.4 **Conduct Phase 6.X activities for the W78 LEP.** **Implementing Criteria:** 1.4.1 Coordinate with the Air Force on LEP requirements to develop conceptual designs. 1.4.2 Propose a design option sub-set to be carried into Phase 6.2/2a. 1.4.3 Initiate feasibility studies among the option sub-set. **Exit Criteria:** 1.4.5 Phase 6.1 briefing to NWCSSC that requests entry into Phase 6.2/2A. 1.4.6 Matrix of design options to be carried into Phase 6.2/2A. 1.4.7 Documentation of analysis activities to determine option feasibility.	Pass

Multi-Site	Multi-Site Target	Status
2 Science **(25% minimum of Multi-Site total)**	2.1 **Achieve ignition on the NIF.** **Implementing Criteria:** 2.1.1 Execute DT implosion experiments with shaped laser pulse to reach ignition conditions. **Completion Criteria:** 2.1.2 Gain> 1 demonstrated in a NIF DT implosion experiment: capsule output energy is greater than the laser energy delivered to the hohlraum.	Fail
	2.2 **Achieve advances in experimental and computational tools used in resolving Significant Finding Investigations (SFIs) and in supporting LEP activities associated with early phase primary implosion.** **Implementing Criteria:** 2.2.1. Refine experimental and computational tools that could enable the assessment of a future SFI. **Completion Criteria:** 2.2.2 Meet the completion criteria for the associated L1 milestone for initial boost conditions including pre-shot predictions for the Pollux experiment.	Pass
	2.3 **Execute the plan for subcritical experiment at U1a.** **Implementing Criteria:** 2.3.1 Carry out a subcritical experiment at U1a with appropriate diagnostics to enable comprehensive data analysis. **Completion Criteria:** 2.2.2 Conduct the Leda experiment in FY 2012.	Pass

A-6 Acronyms Used in This Report

ACREM	Accountable Classified Removable Electronic Media
AOP	Annual Operating Plan
ASC	Advanced Simulation & Computing
ATI	Award Term Incentive
BEEF	Big Explosives Experimental Facility
BMAC	Business Management Advisory Council
CAS	Contractor Assurance System
CD-0 CD-1	Mission Need as justification for future construction or development Alternative Selection & Cost Range based on Mission Need
CD-2	Performance Baseline based on CD-0 & CD-1
CD-3	Start construction/start development
CD-4	Start operations of constructed facility or developed IT system
CFR	Code of Federal Regulations
CoE	Center of Excellence for IT WORK
CRADA	Cooperative Research and Development Agreement
DARHT	Dual-Axis Radiographic Hydrodynamics Test
DoD	Department of Defense
DOE	Department of Energy
DSW	Direct Stockpile Work
EFCOG	Energy Facility Contractors Group
EISM	Enterprise Integrated Safety Management system
Enterprise	Nuclear Weapons complex for NNSA
ERP	Enterprise Resource Planning
ES&H	Environmental, Safety, and Health
ESH&Q	Environmental, Safety, Health, and Quality
ESPC	Energy Savings Performance Contract
FDO	Fee Determining Official
FIPS	Federal Information Processing Standard
FPM	Federal Program Manager
FY	Fiscal Year
gsf	gross square feet
HSS	Office of Health, Safety, and Security
ICF	Inertial Confinement Fusion
IM	Institutional Management
IPR	Independent Project Review
ISM	Integrated Safety Management
IT	Information Technology
JASPER	Joint Actinide Shock Physics Experimental Research facility
KCP	Kansas City Plant
L1	Level 1
LANL	Los Alamos National Laboratory
LEP	Life Extension Program
The Contractor	Lawrence Livermore National Security, LLC (LLNS)

LLNS	Lawrence Livermore National Security, LLC
LOCAS	Line Oversight & Contractor Assurance System
LSO	Livermore Site Office
M&O	Management & Operating Contractor
MIR	Major Impact Report
MSDS	Material Safety Data Sheet
MRT	Milestone Reporting Tool
NIC	National Ignition Campaign
NIF	National Ignition Facility
NLT	Not Later Than
NNSA	National Nuclear Security Administration
NSE	Nuclear Security Enterprise same as Nuclear Weapons Complex for NNSA
NNSS	Nevada National Security Site
NPR	Nuclear Posture Review
NWBS	National Work Breakdown Structure
OFFM	Office of Field Financial Management
PAD	Principal Associate Director
PAP	Performance Assurance Program
PCD	Program Control Document
PEP	Performance Evaluation Plan
PER	Performance Evaluation Report
PMP	Primary Metrics Project
Pu	Plutonium
PX	Pantex Facility
RMF	Risk Management Framework
RTBF	Readiness in Technical Base & Facilities
ROI	Record of Invention
RTG	Radioisotope Thermoelectric Generators
SCAMP	Secondary Computational Assessment and Metrics Project
SNL	Sandia National Laboratories
SNM	Special Nuclear Material
SRS	Savannah River Site
SRTO	Savannah River Tritium Office
SSMP	Stockpile Stewardship & Management Plan
ST&E	Science, Technology, and Engineering
START	Strategic Arms Reduction Treaty
TRIM	Tritium Responsive Infrastructure Modifications
U1a	NTS' underground tunnel complex
UGT	Under Ground Test (nuclear)
US	United States
USG	Unites States Government
WDCR	Weapons Design & Cost Report
WFO	Work for Others
Y-12	Y-12 National Security Complex