

**Fiscal Year 2011
Performance Evaluation Report**

Lawrence Livermore National Laboratory

Prepared by:

**Livermore Site Office
National Nuclear Security Administration
November 30, 2011**

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**FY 2011 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.

1.1 Evaluation Process

In accordance with the FY 2011 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 an overall adjectival rating to determine its eligibility to earn the Award Term Incentive (ATI) as well as 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 ATI targets.

Performance is assessed against the applicable evaluation criteria using a variety of different approaches including, but not limited to, peer review, 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, 2010 through September 30, 2011, which is the fourth year for the management and operation of the Lawrence Livermore National Laboratory (LLNL) 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)	Excellent	Very Good	Very Good
Subjective Fee % Range	91% - 100%	76% - 90%	76% - 90%
Subjective Fee % Earned	92%	79%	88%
Gateway to Stretch	Pass	Pass	Pass
Objective Fee % (Stretch)	92%	80%	100%
Gateway to Award Term	Pass		
Award Term Incentives	100% Pass		
Eligible for Award Term	Yes		
Multi-Site Targets	100% Pass		

The Contractor earned an overall adjectival rating of very good or better, achieving the minimum subjective rating to be eligible for award term. In addition to achieving the minimum subjective rating, the Contractor successfully completed all five ATI targets, satisfying the eligibility requirements for award term under the PEP and the contract.

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

Type	Programs	Operations	IM	Multi-Site	Total	% Earned
Essential	\$6,295,992	\$6,581,633	\$3,665,719		\$16,543,344	86%
Stretch	\$3,284,866	\$1,666,236	\$1,785,253		\$6,736,355	91%
Multi-Site				\$2,975,422		100%
Earned Incentive Fee	\$9,580,858	\$8,247,869	\$5,450,972	\$2,975,422	\$26,255,121	88%
Total Available	\$10,413,976	\$10,413,976	\$5,950,843	\$2,975,422	\$29,754,217	

2.1 Programs

The Contractor earned an overall adjectival rating of excellent based on its performance against Objectives 1 through 6 in the PEP. Programs objectives include core weapons program requirements, strengthening stockpile strategies, Inertial Confinement Fusion (ICF) ignition and high yield campaign, nonproliferation and threat reduction, and science, technology, and engineering (ST&E) excellence. All Programs objectives were performed at the excellent level consistent with the Contractor's Self-Assessment, with the exception of ICF, which was rated very good in consonance with NNSA Program Office (NA-11) performance feedback. The Contractor met or exceeded nearly all of the performance targets, evaluation criteria, and milestones associated with the program objectives as nearly all of the performance measures were also rated excellent. While the Contractor's performance remains at the excellent level, the fee awarded of 92% remains in the low range of excellent (91% to 100%) based on ICF performance and several programmatic issues and concerns reported by the HQ Program Office (NA-11), which are fully addressed in this report.

Notable accomplishments in Programs include:

- Dedicated four employees to support the SNL Hostile Environments Peer Review and supported the B61 LEP Independent Peer Review, W88 Peer Review, B53 Weapons Response, the W76 Electro Static Discharge assessment, as well as several NNSA HQ requested studies.
- Surveillance was conducted according to Directive Schedule with exception of the W84 MSAD surveillance due to a shipping delay from Pantex.
- Three Phoenix Mini-Generator experiments have been fired at BEEF with the first Mini-Generator to be fired at Site 300 expected in Quarter 1 of FY 2012.
- Completed the NIF validation suite of experiments associated with the closure of FY 2010 L1 Milestone (3673). The experimental results showed excellent agreement with the pre shot simulations. This Level one Milestone is considered to have satisfied the closure requirements set forth by the NNSA.
- Phase 6.1 W78 LEP options studies have begun utilizing draft Military Characteristics.
- Completed the W87 LEP survivability studies using threat models NWM21-3, NWM21-4, and NWM 21-6.
- NIF executed a total of 147 shots in support of current and future needs of the Stockpile Stewardship, University Use/Fundamental Science, Diagnostic Commissioning, and Other National Security missions.
- Recovered radioisotopic thermoelectric generators (RTG) from Russia and supported the protection of nuclear and radiological materials along with security upgrades to facilities in countries throughout Africa.
- Led the development of the USGs first National Strategic Plan for nuclear forensics and attribution.

- Developed new technologies as evidenced by 150 records of invention (ROI), 59 U. S. Patents, 6 new Cooperative Research and Development Agreements (CRADAs), and 24 new licensing agreements.
- Hired 250 students and 199 post-doctoral researchers.

2.2 Operations

The Contractor earned an overall adjectival rating of very good based on its performance against Objectives 7 through 9 in the PEP. Operations objectives include Facilities and Infrastructure, Environmental, Safety, and Health (ES&H), and Security. Operations objectives were performed at the very good level consistent with the Contractor's Self Assessment, with the exception of Security, which was rated good by NNSA and very good by Contractor. Both the Site Office and Program Office (NA-70) are in agreement with the good rating. 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. However, while the Contractor continued to demonstrate improvement in many areas, it is noted that additional improvements are needed in achieving energy efficiency and water conservation goals and in correcting deficiencies in its policies and procedures governing site security program requirements as detailed in this report. Although overall performance remains at the very good level, the fee awarded of 79% represents a decrease from the FY 2010 percentage (82%) largely due to the security issues and rating and is considered relatively low in the very good range (76% to 90%).

Notable accomplishments in Operations include:

- Mission Critical facilities were available 99.96% of scheduled availability.
- De-inventory and program transfer on schedule.
- All Environmental Restoration program regulatory milestones were met at both the Livermore Site and Site 300.
- All Low Level Waste disposal goals were met or exceeded.
- Development of meaningful quantitative and qualitative leading and lagging indicators for the health of the industrial hygiene, occupational medicine, and radiation protection programs.
- Significant focus on analysis and improvements to the hearing conservation program.
- Updated its comprehensive post de-inventory security program plan
- Conducted in-depth and comprehensive self assessments of its operations, helping it self-identify and correct operational issues.



2.3 Institutional Management

The Contractor earned an overall adjectival rating of very good based on its performance against Objectives 10 and 11 in the PEP. IM objectives include Business Operations and Governance, which were performed at the excellent and very good levels, respectively, consistent with the Contractor's Self Assessment. Performance measures in support of Business Operations and Governance were generally rated at the very good and excellent levels as the Contractor met or exceeded many of the performance targets and evaluation criteria. Based on the combination of very good and excellent ratings and the absence of significant performance issues, the fee awarded of 88%, which is in the high range of very good (76% - 90%) and consistent with FY 2010, is justified. It is noted that there were areas of concern including self-identified labor charging issues and communication of progress toward meeting its Environmental Management System goals and objectives.

Notable accomplishments in IM include:

- Successfully completed its personal property inventory with an accountability rate of 99.97%.
- Expanded implementation of institutional indirect cost baselines and demonstrated utilization of performance reporting and change control process and tools.
- Significantly exceeded its overall small business goal.
- Reduced the time and resources required to conduct an inventory through the use of "electronic validation/no-touch technology" in computers, cell phones, and truck radio systems.
- L-Hire system, Learning Management System and Business Intelligence Reporting Project were enhanced or upgraded to improve the contractor's overall recruitment cycle time and allow management and employee access to centralized personnel training information.
- Established the Office of Strategic Outcomes, Interagency Business Office, and Interagency Mission Opportunities Office to provide oversight and coordination of an institutional strategy as well as effective program development and execution.
- Implemented the first phase of the new Global Security Project Management and Oversight initiative.
- Successfully completed all 17 business system projects that were schedule for completion based on the prioritization by the Business Systems Council.





3.0 Subjective (Adjectival) Ratings

3.1 Programs


		NNSA	LLNS
Overall Programs Rating		Excellent	NA
1.	Complete essential activities for core weapons program requirements.	Excellent	Excellent
2.	Strengthen the foundation of deterrence through stockpile science, technology, and Engineering.	Excellent	Excellent
3.	Propose and implement strategies for sustaining a strong deterrent at low numbers compatible with START, NPR and CTBT goals.	Excellent	Excellent
4.	Execute Inertial Confinement Fusion Ignition and High Yield Campaign in support of stockpile stewardship.	Very Good	Excellent
5.	Support Nonproliferation and Threat Reduction.	Excellent	Excellent
6.	Provide Science, Technology, and Engineering Excellence.	Excellent	Excellent

Performance Objective 1: Complete Essential Activities for Core Weapons Program Requirements.

The Contractor did an excellent job conducting the essential core weapon program activities work under Objective 1, earning an excellent rating on both of the performance measures. The Contractor met or exceeded all of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did an excellent job with the management of defense program work as all of the 96 DP Level 2 Milestones in the MRT were reported blue and it completed all Annual Assessment associated deliverables (POG, SAGSAT, and Joint Director Reviews) on time to include the W84 Safety Assessment. The Contractor also did an excellent job in the management of critical capabilities, skills, and facilities supporting nuclear operations work.

Additional notable accomplishments include:

- W78 INWAP team presented its findings (physics performance, materials, and engineering) to LANL, the LLNL B61 Team has begun modeling efforts, and the LLNL B83 team has been transferring necessary data to LANL.
- Dedicated four employees to support the SNL Hostile Environments Peer Review and supported the B61 LEP Independent Peer Review, W88 Peer Review, B53 Weapons Response, the W76 Electro Static Discharge assessment, as well as several NNSA HQ requested studies.

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- Surveillance was conducted according to Directive Schedule with exception of the W84 MSAD surveillance due to a shipping delay from Pantex.
 - Completed Pit surveillance of the W87, B83, and W84 and detonator surveillance for the W87, B83, and W80.
 - Completed four W84 disassembly and Inspection operations.
 - Closed-out one high priority SFI and three low priority SFIs
 - Provided weekly and monthly production plant support in the form of classified VTCs.
 - Participated in meetings in support of KCRIMS.
 - Performed peer review work included B61 LEP, NG vulnerability and hardening, and LANL SFI closeout plans.
 - Completed CASTLE WR demonstration documentation.
 - Participated in several meetings (JOWOG, Enhanced Collaboration, Level 1 &2, Stocktake) in support of the US-UK Mutual Defense Agreement. Established a classified ESN link capability enabling the rapid sharing of information between technical program managers.
 - Assumed the lead role in procurement and vendor negotiations in support of the TLCC2 early user milestone.
 - Facilitated an uncompromising contract negotiation with IBM which included over 200 technical requirements, costs, schedule and options for Sequoia.
 - Facility modifications are currently underway in preparation for Sequoia, including a liquid cooling system and major power delivery upgrades. HPC facility B451 awarded the Leadership in Energy and Environmental Design (LEED) Silver designation.
 - Submitted to EPAT the RTBF requirements case for FY13-FY17 and supported monthly RTBF Contractor Support Group teleconferences.
 - Completed HEAF Gas Gun and DEMII relocation/installation.
 - Met all requirements outlined in the Quality Implementation Procedure supporting the implementation of the WCI QC1 program.
 - Forecasted Weapons Program work force requirements out to the year 2030.
 - Successfully balanced nuclear operations, security, and safety with programmatic requirements in support of the nuclear weapons mission.

Performance Objective 2: Strengthen the Foundation of Deterrence Through Stockpile Science, Technology, and Engineering.

The Contractor did an excellent job in strengthening the foundation of deterrence through stockpile science, technology, and engineering under Objective 2, earning one excellent rating and one very good rating on the performance measures. The Contractor met or exceeded nearly all of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did an excellent job in resolving weapons physics and engineering challenges as

[REDACTED]

well as developing a scientifically rigorous approach to UQ. All 22 Level Two Milestones associated with Measure 2.1 (22) and 2.2 (3) were reported blue.

Additional notable accomplishments include:

- Three Phoenix Mini-Generator experiments have been fired at BEEF with the first Mini-Generator to be fired at Site 300 expected in Quarter 1 of FY 2012.
- Fired two Flat Plate Generator experiments at Site 300.
- Conducted two integrated weapon experiment hydrotests, one at Site 300, one at DARHT.
- JASPER fired shot 90, the first hot shot since the resumption of operations as a hazard Category 3 facility, representing successful completion of many large sub tasks to include amongst other things, Authorization Basis updates, DAF glove box certification, and new target design/engineering development.
- Expanded the BVS to more than 17 relevant experiments and the PMP to 68 events.
- Completed the NIF validation suite of experiments associated with the closure of FY 2010 L1 Milestone (3673). The experimental results showed excellent agreement with the pre shot simulations. This Level one Milestone is considered to have satisfied the closure requirements set forth by the NNSA.
- Developed experimental platforms for all three HED facilities (Omega, Z, NIF) as the direct result of several HED campaigns.
- Closure of the L1 resulted in a suite of validated models and simulation capabilities which also contributes to the PCF.
- Completed experiments in support EOS, material strength, and boost objectives and completed the three year HED Plan update.
- Populated the Boost Validation Suite with 17 experiments (evaluation criteria calls for 15 experiments minimum), a composite of integrated weapons experiments, focused experiments, and underground tests.
- Developed an LX-14 detonation model supporting the FY12 L1 Milestone (Boost Initial Conditions) and completed an experimental validation suite.
- Evaluated the newly developed UGT model against legacy data Per the L2 3846 closure criteria and developed new UGT models for events that have no legacy models using these enhanced capabilities. These new modeling capabilities have been applied to three additional UGTs.
- The Primary Metrics Project (PMP) currently encompasses 68 events.
- Performed work on Secondary Computational Assessment and Metrics Project (SCAMP) 2D common modeling for several devices on schedule.
- Developed with LANL a modeling procedure for reporting and comparing the PCAP nuclear test suite data, including data from LLNL's PMP and SCAMP, and LANL's Primary Validation Suite and Secondary Validation Suite. This modeling procedure also

includes a metric to evaluate the predictive capability being demonstrated by the ASC codes.


However, responsiveness to NNSA document requests regarding L1 3673 could have been improved and it is recommended that the position of Science Executive be elevated to a higher level of influence regarding management strategy.

Performance Objective 3: Propose and Implement Strategies for Sustaining a Strong Deterrent at Low Numbers Compatible with START, NPR and CTBT Goals.

The Contractor did an excellent job in proposing and implementing strategies for sustaining a strong deterrent at low numbers compatible with START, NPR, and CTBT goals, under Objective 3, earning an excellent rating on all four of the performance measures. The Contractor met or exceeded nearly all of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did an excellent job developing innovative life-extension design and technology options, including surety, enhancing the rigor of assessments and certifications, making 3-D assessments with UQ standard practice, and optimizing the return of information from surveillance activities. All of the 23 Level 2 Milestones associated with this Objective were reported as completed. Level 2 Milestones 3802 and 3812 were moved to FY 2012 due to lack of funding in the current fiscal year.

Additional notable accomplishments include:

- Phase 6.1 W78 LEP options studies have begun utilizing draft Military Characteristics.
- Conducted several experiments at HEAF in support of scaling and surrogacy leading up to an all optical hydro planned for FY 2012 execution.
- Completed four W84 disassembly and inspection tear downs in support of future use options.
- Began development of several NEP sensor technologies such as a hollow-wave guide water sensor, and tunable diode laser absorption spectroscopy.
- Completed two surety related hydro tests (CFF, DARHT).
- Delivered the complete W87 pit design package and die cast foundry moving plan to LANL.
- Developed three dimensional models for two surety related UGTs, and nine new TATB models were developed and validated in support of L2 3811.
- Achieved TRL 4 on a new detonator strong link technology and completed a final design concept for an advanced initiation system, including manufacturing processes and test firing of hardware.
- The surety program executed an Integrated Weapons Experiment resulting in excellent data collection and extraordinary correlation with pre-shot simulations.
- Conducted 3D calculations for two relevant UGTs in support of future stockpile surety options.

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- Supported the enhanced collaboration efforts with AWE and SNL and completed the Phase 1 close out document (signed by LLNL, LANL, SNL, and AWE on 8/31/2011) and Phase 2 follow on proposal.
 - Updated plutonium ageing assessments to include 130 year old equivalent age plutonium and incorporate the data into the FY 11 Annual Assessment.
 - Developed additional advanced ageing models for CSA materials.
 - Released HE model with updated creep and ratchet growth characterization.
 - Completed HATCH experiments.
 - Re-analyzed 17 nuclear events in support of BVS and early time boost analysis.
 - Developed a LLNL W78 baseline.
 - Completed the W87 LEP survivability studies using threat models NWM21-3, NWM21-4, and NWM 21-6.
 - Supported the development of new surveillance diagnostics for use at the production agency facilities, including the development of a new scintillator material that produces ten times brighter light output for the same flux of incident x-rays (CoLLOSI CT), an NMR mouse for use at KCP, and fourth generation multiplexed PDV for use at Pantex.
 - Developed, extensively documented, and briefed the SAGSAT on a state of the stockpile metric and developed software.
 - Developed and integrated new material models into the W80 and W87 CSA aging models and developed a universal CSA model which includes CSAs from the W80, B83, W87, and W87 LEP that allows for a customizable thermal history profile and incorporates statistical input variations.

Performance Objective 4: Execute Inertial Confinement Fusion Ignition and High Yield Campaign in Support of Stockpile Stewardship.

The Contractor did a very good job in executing the Inertial Confinement Fusion Ignition and High Yield Campaign under Objective 4, earning an excellent rating on one measure and a very rating good on two. The Contractor met or exceeded many of the performance targets, evaluation criteria, and milestones associated with this objective. The Contractor did an excellent job executing HED experiments on ICF facilities and a very good job leading the execution of the NIC and beginning the transition of NIF to routine operations by the end of FY 2012.

NIF executed a total of 147 shots in support of current and future needs of the Stockpile Stewardship, University Use/Fundamental Science, Diagnostic Commissioning, and Other National Security missions. NIF performed significant progress toward the completion of two Level 2 Milestones, and completed one Level 1 Milestone. An extensive campaign of NIC cryogenic shots were completed in support of measuring shock wave velocity, radiation symmetry, shock and early symmetry tuning, implosion symmetry, and capsule implosion velocity.

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NIC completed 14 Level 0-2 Milestones as scheduled within 30 days of the approved plan. Level 2 Milestones 4079 and 4080 were completed more than thirty days ahead of schedule. NIC has done an excellent job keeping earned value performance indices (CPI, and SPI) above 0.92. As of May 11, CPI was 0.96 and SPI was 0.96. NIC has done an excellent job ensuring that the Total Recordable Case (TRC) rate for NIC-related activities does not exceed 3.1 for FY 11. As of August 2011, the TRC for NIC related activities was 0.6. NIC has satisfied the requirement of no more than a 1.8 Total Recordable Case (TRC) rate for FY11. As of August 2011, the TRC for NIC related activities was 0.6.

NIF has done a very good job of transitioning to routine facility operations. The Contractor issued a memo titled, "NIF progress on facility allocations through Q4 FY2012" in June 2011 and developed and implemented a process for allocating NIF facility time across all missions. Mission areas include: NIC cryogenic target shots, diagnostic commissioning and timing, High Energy Density Stewardship, and Fundamental Science/University Use. A pre-decisional draft Governance Plan was submitted to NNSA HQ late Dec. 2010 and comments submitted by the ICF Federal Program Manager were incorporated. The NIF User Office conducted several activities including drafting the NIC data policy, supporting four reviews of NIF fundamental science, and holding a ribbon cutting ceremony for the HED campus.

Additional notable accomplishments include:

- Five HEDSS shots, three tantalum EOS shots, and two Pleiades shots in support of SSP.
- LLNL, UCB, and Princeton performed two shots exploring the EOS of carbon at extreme pressures, demonstrating ramped compression exceeding 50 million atmospheres of pressure.
- NIC supported three reviews for Under Secretary for Science Dr. Koonin regarding ignition experiments.
- Developed a password protected website that contains a collective body of information resources, including, but not limited to agendas, technical briefing materials, peer reviewed reference and journal articles, white papers, and Ignition Review Panel Letter reports.
- Supported numerous reviews and other informational exchanges with NNSA HQ such as daily NIF Operating Status Reports, weekly teleconferences, NIC Monthly Shot Summary Reports, and NNSA/Congressional Briefings.
- Assisted Dr. Deeney in the development of High Level Milestones for Congressional tracking of NIC progress.
- Supported two Science on NIF workshops.

However, there were several issues/concerns to report. Level 2 Milestone 3419 was not completed in FY 2011 and is therefore rated red, although a BCP request was submitted by the end of the year. Overall communications have been improved, but additional effort is necessary to achieve the level that is the standard for other programs. Better exchanges between middle level managers and NNSA would be an area for improvement. The overall number of shots resulting in useful data collection remains below the rate which has previously been

communicated to stakeholders as necessary for assuring success of the National Ignition Campaign.

Performance Objective 5: Support Nonproliferation and Threat Reduction.

The Contractor did an excellent job supporting non-proliferation and threat reduction under Objective 5, earning an excellent rating on all five performance measures. The Contractor met or exceeded all of the performance targets and evaluation criteria associated with this objective. The Contractor did an excellent job in providing technical capabilities to limit or prevent the spread of materials technology and expertise related to weapons of mass destruction and securing inventories of surplus materials, support to improve the US governments' and international capabilities to detect, prevent, and deter proliferant activities, and support in the area of arms control and cooperative threat reduction. Excellent support was also provided to arms control and cooperative threat reduction, the intelligence community, and to detect, deter, and mitigate foreign intelligence collection and espionage and international terrorist threats.

Laboratory scientists and engineers provided strategic approaches to international engagement, nonproliferation policy, and technology development to enable new international nonproliferation regimes. Additionally, the Contractor delivered detection components and monitoring systems to sites worldwide. 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.

Additional notable accomplishments include:

- Recovered radioisotopic thermoelectric generators (RTG) from Russia and supported the protection of nuclear and radiological materials along with security upgrades to facilities in countries throughout Africa.
- Supported the Russian Federation Ministry of Defense in developing and implementing a comprehensive regulatory base to ensure material protection.
- Provided technical support to DOE in reviewing domestic export licenses and offered export control training and assistance for international partners.
- Supported the improvement of the US governments' and international capabilities to detect, prevent, and deter proliferant activities.
- Led a successful Pele Test Campaign which provided critical improvements in the ability to discriminate nuclear weapon development from other activities.
- Led the development of the USGs first National Strategic Plan for nuclear forensics and attribution.
- Developed new technologies for nuclear detection and forensics and analyzed environmental and interdicted samples for the IAEA and Australia.
- Completed the installation of equipment to support the IAEA Network of Analytical Laboratories which increased nuclear forensics capabilities.

- Continued to work with international partners to enhance scientific and technical cooperation in nonproliferation by hosting meetings and organizing and participating in workshop.
- Hosted a Laboratory Directors meeting with the Russian Laboratory Directors, Rosatom representatives, and NNSA.
- Provided technical expertise to help organize and participated in the Technical Workshop to Strengthen Treaty Implementation Capabilities in the Middle East.
- Continued to actively support the USG in the development of an onsite inspection regime in support of the CTBT.
- Supported the USG on Fissile Material Cut-Off Treaty verification options and options for radiation detection equipment for future arms control treaty verification.
- Delivered comprehensive proliferation network analysis on two countries for the FBI.
- Produced 38 formal intelligence reports.
- Awarded patent on "False Alarm Recognition in Hyperspectral Gas Plume Identification."
- Developed a series of sensors to support warfighter.
- Delivered a unique sensor subsystem which was critical to national security.
- Completed malware study which was lauded for insights into cyber deterrence.
- Achieved 100% consistency with guidelines and 100% dissemination of information and referrals.
- Completed 373 intelligence information reports.

Performance Objective 6: Provide Science, Technology, and Engineering Excellence.

The Contractor did an excellent job providing science, technology, and engineering (ST&E) under Objective 6, earning an excellent rating on all three performance measures. The Contractor met or exceeded all of the performance targets and evaluation criteria associated with this objective. The Contractor did an excellent job assuring the quality of the core ST&E competencies, developing, implementing and updating an integrated and balanced ST&E strategy, and monitoring the long-term impact that LDRD investments have made on the scientific, programmatic and intellectual property position of LLNL. Excellence was demonstrated by the quantity of national awards received by the Laboratory's researchers as well as the number of publications published in peer-reviewed journals. External peer review committees supported and validated the Contractor's quality of science, technology, and engineering (ST&E) contributions needed to execute DOE/NNSA's mission and meet national needs.

The LLNL LDRD Program contributed 100% of the two R&D 100 awards received in FY 2011. LDRD funding has contributed to 40% of the Laboratory's intellectual property and about 20% of the peer-reviewed publications. Other federal sponsors and industry were supported by LLNL in the development of new technologies. This was evidenced by 150 records of invention (ROI), 59 U. S. Patents, 6 new Cooperative Research and Development Agreements (CRADAs), and 24 new licensing agreements. The Contractor has utilized external collaborations when appropriate while striving for technical distinction. The Contractor's scientists and researchers continue to be dynamically involved in professional/scientific societies during this fiscal year.



The Contractor was able to effectively leverage its capabilities for interagency work with the Department of Defense (DoD), Department of Homeland Security (DHS), National Institutes of Health (NIH), the State of California, NASA and academia. This includes work for: (1) The DoD/Joint Improvised Explosive Device Defeat organization, (2) Work for DHS in support of infrastructure protection, radiological and nuclear countermeasures, biological/chemical countermeasures, and aviation security, (3) NIH has sponsored work on a multiplexed diagnostic array, and DoD have also sponsored work on the rapid identification of pathogens while DARPA is sponsoring work on the viral evolutions, (4) The State of California has requested the contractor's support on electricity demand and response technologies as well as for groundwater monitoring and assessments, (5) NASA (National Aeronautics and Space Administration) has funded work in support of space material analyses and (6) Various universities have sponsored work in the contractor's Center for Accelerator Mass Spectrometry (CAMS) to identify isotopic composition of substances.

The Contractor expanded some initiatives and launched new activities in support of the technology transfer mission, which included: (1) Entrepreneur-in Readiness Program. (2) Venture Accelerator: (3) IP Bundling; (4) IP Auctions; (5) MOU with Keiretsu Forum; and (6) the Livermore Valley Open Campus (LVOC).

To maintain the workforce, the contractor actively recruited and hired researchers in an effort to boost the post-doctoral program. The contractor hired 250 students and 199 post-doctoral researchers during FY 2011. This reflects a record high of post-doctoral recruitments at the contractor since FY 2007.

While the quality of research remains at a very high level, there are opportunities to better balance the Contractor's ST&E strategy and enhance its core competencies in support of anticipated national security missions.

3.2 Operations

		NNSA	LLNS
Operations Overall LLNL Rating		Very Good	NA
7.	Support current and evolving mission performance by providing effective and efficient facilities and infrastructure.	Very Good	Excellent
8.	Maintain safe and environmentally sound operations in an efficient and effective manner in support of mission objectives.	Very Good	Very Good
9.	Maintain Secure Operations in an Efficient and Effective Manner in Support of Mission Objectives.	Good	Very Good



[REDACTED]

Performance Objective 7: Support Current and Evolving Mission Performance by Providing Effective and Efficient Facilities and Infrastructure.

The Contractor did a very good job of supporting current and evolving mission performance by providing effective and efficient facilities and infrastructure under Objective 7, earning 4 excellent ratings, one very good, and one satisfactory 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 operating mission critical and user facilities as national capabilities, maintaining and managing F&I assets with flexibility to support capabilities required for current and future mission, performing de-inventory and program transfer, and treating, storing, and disposing waste from RHW facilities in a safe, compliant and efficient manner. The Contractor did a very good job executing effective environmental restoration and D&D programs and a satisfactory job demonstrating progress towards achieving the federal and DOE energy efficiency and water conservation goals.

Notable accomplishments include:

- Mission Critical facilities were available 99.96% of scheduled availability.
- Facility Condition Indexes were within targets.
- All DP Level 2 Milestones were completed.
- 2% Maintenance spending goal was exceeded.
- A new Nuclear Maintenance Management Program developed and established.
- The Federal/DOE water conservation goal of 8% was exceeded.
- De-inventory and program transfer on schedule.
- All Environmental Restoration program regulatory milestones were met at both the Livermore Site and Site 300.
- RCRA Closure Project B419 D&D was brought down to slab safely.
- All Low Level Waste disposal goals were met or exceeded.
- Mixed Waste Management Plan implemented without adding additional Site Treatment Plan enforceable Milestones.
- Contract handled transuranic waste packaging instruction plan implemented.

Although the Contractor performed excellent in many areas, there were several areas of concern as set forth below:

- Baseline Change Control process not adhered to.
- Timeliness of project Final Reports.
- Continual growth of F&I's Work Order backlog.
- Lack of demonstrated progress in Energy Intensity reduction since October 2010.
- Regulatory violation from inadvertent non-activation of Contingency Plan.

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Performance Objective 8: 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 8, earning a very good rating on both performance measures. The Contractor met or exceeded many of the performance targets and evaluation criteria associated with this objective. The Contractor performed strongly in many ES&H areas such as environmental compliance, radiation protection, laser safety, construction safety and emergency management, and demonstrated distinguished performance in biosafety and in the efforts to improve the industrial hygiene and occupational medicine programs.

The Contractor successfully implemented a number of new and revised DOE Orders, such as 425.1D, 426.2, 422.1. Improved Contractor collaboration across the institution was demonstrated in a number of nuclear safety/operations areas. Institutional requirements described in the revised ES&H Manual Document 3.5, LLNL Conduct of Operations, that apply to nuclear facilities were significantly improved. 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. Contractor procedures and mechanisms addressed and implemented 10 CFR 830 Subpart B requirements, including development and implementation of fully compliant DSAs and TSRs for hazard category 2 and 3 nuclear facilities and activities. The Contractor effectively implemented the USQ program and integrated it with other institutional programs at the site (e.g., work control, maintenance). IVRs were conducted that verified the effective implementation of approved TSRs, including Specific Administrative Controls. The System Engineering Program was effective in maintaining the operability of vital safety systems. Cognizant System Engineers proactively supported operations and maintenance; completed Level III qualifications; cross-qualified; and completed all scheduled system condition assessments.

Additional notable accomplishments include:

- Commencement of ABSL work at the site and significant institutional funding for renovating BSL laboratories, upgrading facility equipment, and reduction of legacy biological waste.
- Completion of the Site-Wide Environmental Impact Statement and other high quality environmental compliance deliverables.
- Development of meaningful quantitative and qualitative leading and lagging indicators for the health of the industrial hygiene, occupational medicine, and radiation protection programs.
- Significant focus on analysis and improvements to the hearing conservation program.
- Comprehensive institutional assessment program for laser safety controls.
- Made significant improvements to the institutional Issues Tracking System to support tracking and trending of Conduct of Operations related issues.

- Demonstrated focus of Contractor management on injury and illness tracking, trending, and prevention.

However, it is noted that work control implementation failures continue to impact operations as evidenced by the results of the DOE HSS review. Focused efforts to improve work control in the identified areas of concern (e.g., MUSD) are needed in FY 2012. The Contractor should focus on improvements in development of meaningful metrics for all ES&H functional areas and better integration with the institutional contractor assurance system. The Contractor must ensure timely and conservative reporting of occurrences related to PISAs and TSR violations.

Performance Objective 9: 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 9, earning an excellent rating on one performance measure, very good on three, and good on three. The Contractor did an excellent job updating its comprehensive post de-inventory security program plan, a very good job implementing security reform, reducing the security footprint, and realizing operational efficiencies through modernization or operations/process improvements. Further, the Contractor did a good job supporting the NNSA enterprise through DNS management excellence, maintaining and sustaining an adequate S&S program, and recruiting, training, and exercising the talent of people and critical skills. While the Contractor met or exceeded many of the performance targets and evaluation criteria associated with this objective ordinarily making it eligible to earn a very good rating, there were several self-identified security issues that the Contractor is in the process of developing and implementing corrective actions for, which lowered the rating to good. This rating is consistent with the performance feedback provided by NA-70.

The Contractor maintained secure operations in an effective and efficient manner throughout the fiscal year. Overall, the Contractor provided assurance that its performance in all functional areas was effective and substantially compliant with DOE/NNSA security policies. Evidence of assurance was provided through results from an improved self assessment program, and results from LSO's Integrated Assessment Plan (IAP). The Contractor conducted in-depth and comprehensive self assessments of its operations, helping it self-identify and correct operational issues. Conclusions from the LSO IAP activities resulted in the issuance of a "Satisfactory" rating. This is the highest rating permitted by DOE security policy. In addition, results from the NNSA HQ Defense Nuclear Security (DNS) Graded Security Protection Implementation Assistance Visit affirmed that the Contractor remains compliant with the 2003 Design Basis Threat and has an effective and flexible protection posture. Adequate protective force response and security system performance was observed by LSO during quarterly force on force exercises.

Security management and planning activities also met NNSA expectations. Key program documents - Annual Operating Plan, Site Safeguards and Security Plan, Cyber Security Site Plan were submitted on-time and approved by LSO. The Contractor updated its post de-inventory security program plan. The plan identified significant reductions to work scope and cost in post

de-inventory security program activities within FS-20 Budgeting and Resource categories and other funding sources and identified tasks that must be completed to transition the site from Security Category I/II to Security Category III. Additionally, the Contractor formed a Transition Action Committee to assist employees that will be displaced following de-inventory in planning for this change and identifying other employment opportunities.

Security organization support helped the Contractor meet milestones of the Security Category I/II Special Nuclear Material de-inventory project. The Contractor processed nearly 95 percent of the Security Category I/II Special Nuclear Material (SNM) for off-site shipment with over 90 percent of the SNM completely removed.

While the Contractor's overall performance was effective, LSO found deficiencies in Contractor policies and procedures governing site security program requirements. Deficiencies were identified in the following programs: Protection Programs, Physical Security, and Cyber Security. In June 2011, the Contractor discovered a shortage of 1,659 rounds of amour piercing ammunition. The Contractor initiated immediate corrective actions, to include a 100 percent ammunition inventory, establishment of a baseline for future inventories, revision of existing ammunition control policies and procedures, and conduct of an incident analysis. This analysis concluded that the Contractor needs more formality in the governance of its security operations. In addition, NNSA HQ DNS performed a Special Review on inventory control and recommended that the Contractor establish governing policy, procedures, and oversight to strengthen integrated management of inventory requirements and formality of protective force operations. Issues attributable to a lack of governing policies and procedures were also evident in the Contractor's budget formulation and execution activities, in which budget submission and execution deliverables suffered from quality control problems, requiring LSO intervention. This condition was also identified in the DNS *Lawrence Livermore National Laboratory Sandia National Laboratories- California Field Security (FS-20) "Deep Dive" Requirements Review*.

The past two annual LSO security surveys of the Contractor noted deficient site-level policy and procedure as contributing to compliance problems. A suggestion was given in the FY 2010 Survey Report to improve Contractor security performance by establishing more formal policies and procedures. In response to these internal and NNSA evaluations, the Contractor has initiated actions to strengthen the governance of its security operations.

3.3 Institutional Management

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

Performance Objective 10: Manage Business Operations in an Effective and Efficient Manner while Safeguarding Public Assets and Supporting Mission Objectives.

The Contractor did an excellent job of managing business operations in an effective and efficient manner while safeguarding public assets and supporting mission objectives under Objective 10, earning an excellent rating on two performance measures, and very good on one. The Contractor met or exceeded nearly all of the performance targets and evaluation criteria associated with this objective. The Contractor did an excellent job demonstrating an effective and efficient Supply Chain Management function, maintaining a centralized Strategic Human Resources Management Directorate to ensure recruitment, development, and maintenance of the workforce. The Contractor also did a very good job performing effective financial management.

The Contractor has maintained a consistent outstanding level of performance in property management, procurement and strategic human resources management (SHRM). Under strong leadership in all of those areas, Contractor has successfully completed its personal property inventory with an accountability rate of 99.97 %, maintained a purchasing system that continues to perform at a high level based on the results of the Objectives Matrix Report, and enabled its SHRM team to produce outstanding results in several areas that have resulted in improved employee performance, enabled timely decision-making by management, and supports accountability. Additionally, the Contractor successfully maintained passing ratings in the NNSA Field Financial Management performance measures and significantly improved its compliance with the Cost Accounting Standards.

Additional notable accomplishments include:

- Effectively manage cost variances within prescribe thresholds.
- Expanded implementation of institutional indirect cost baselines and demonstrated utilization of performance reporting and change control process and tools.
- Reduced the time and resources required to conduct an inventory through the use of “electronic validation/no-touch technology” in computers, cell phones, and truck radio systems.
- Effectively supported the NNSA Supply Chain Management Center initiative by meeting or exceeding its goals.
- Significantly exceeded its overall small business goal.
- L-Hire system, Learning Management System and Business Intelligence Reporting Project were enhanced or upgraded to improve the contractor’s overall recruitment cycle time and allow management and employee access to centralized personnel training information.
- Developed and launched its Strategic Human Capital performance dashboard.



Areas of concern include the Contractor's decision not to consistently apply approved forward pricing rates (NIC-related) and several self-identified labor charging issues that will require corrective action in FY 2012.

Performance Objective 11: Governance Assures Performance and Creates Long-Term Sustainable Value for the Institution.

The Contractor did a very good job of assuring performance and creating long-term sustainable value through governance under Objective 11, earning an excellent rating on two performance measures, and very good on three. It is noted that the Contractor rated its overall performance for Objective 11 as very good despite rating all five of its measures as excellent. According to the Contractor's Self-Assessment Report, this is due to the fact that it should have been more "forward leaning" in addressing the precursors to the long-standing security issues set forth under Objective 9. NNSA agrees with this conclusion. The Contractor met or exceeded many of the performance targets and evaluation criteria associated with this objective. The Contractor did an excellent job of improving the security performance agility of the IRM systems, and developing and implementing initiatives to increase the effectiveness and efficiency of the laboratory. Further, the Contractor did a very good job establishing an effective WFO management program, effectively implementing and following a compliant legal management plan, and implementing institutional ESH&Q and security requirements. Significant accomplishments were made in establishing an effective Work for Others (WFO) management program and improving the security and agility of Information Resource Management (IRM) systems. The Contractor also implemented initiatives to increase the effectiveness and efficiency of the laboratory through LLNS Board of Governors oversight and parent company support of Functional Management Reviews and Directorate Review Committees.

Additional notable accomplishments include:

- Established the Office of Strategic Outcomes, Interagency Business Office, and Interagency Mission Opportunities Office to provide oversight and coordination of an institutional strategy as well as effective program development and execution.
- Implemented the first phase of the new Global Security Project Management and Oversight initiative.
- Successfully completed all 17 business system projects that were schedule for completion based on the prioritization by the Business Systems Council.
- Submitted the IT Cyber Security Risk Management framework (RMF) and associated project plan on time which was approved by LSO.
- Made significant progress in developing and implementing its Six Sigma Program and completed five process improvement projects.
- Modifications to injury and illness databases and applications were successfully implemented in support of work and payroll line ("dual line") reporting.



It is noted that the Contractor needs to provide clearer communication of progress toward meeting its Environmental Management System goals and objectives and to better demonstrate continuous improvement by setting meaningful metrics.

4.0 Award Term Incentives

Completion status for each of the Award Term Incentive 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	Pass	Pass
2.	Site Transformation Activities	Pass	Pass
3.	Sustainable Management	Pass	Pass
4.	Safety Management System	Pass	Pass
5.	Contractor Assurance System	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 Forms. The Contractor executed both the Core Weapons and ASC Programs at the excellent level. All 96 Level 2 Milestones captured by Objectives 1-3 are rated blue and all measures are rated excellent. Additionally, all NIC activities in the ATI measure were successfully completed in accordance with the approved NIC Execution Plan and as documented in the Contractor's completion letter (NIF-0117462) to NA-11 dated June 30, 2011.

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. It successfully executed the de-inventory plan and developed a revised comprehensive post de-inventory security program plan. Despite the changing of the de-inventory Program Manager and rapidly evolving programmatic demands on the Superblock, packaging of de-inventory materials has consistently been ahead of the planned schedule throughout year. Additionally, the Contractor prepared and submitted a Category 1 surge capability plan.

ATI 3: Sustainable Management

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 initiated efforts to evaluate all of the data centers onsite and establish initial PUEs. There were some projects implemented related to improving the PUE. Several of the LLNL datacenters have PUEs above 2.0- B112, B131 and B121. The Contractor is completing a design for free cooling of B453 and hopes to have the construction funded in FY 2012.

The Contractor has expanded its applied research in the Smart Grid domain. The Contractor supported the California utilities on the CES-21 project, a \$150M effort funded by the California ratepayers and sponsored by PG&E, So-Cal Edison and San Diego Gas and Electric. The Contractor has also secured new projects with CEC and PG&E in renewable and cyber security energy research. The Contractor secured funding from DOE to work on wind energy projects including multi-scale physics simulations and short-term forecasting. The Contractor's Wind Program also presented their results at a Science on Saturday lecture series. The Contractor partnered with a Norwegian wind company to launch a deep sea offshore wind demonstration Project. The Contractor's leading climate scientist was elected into the National Academy of Science. The Contractor has developed industrial partnerships with more than 10 technology companies in support of R&D on energy.

Additional notable accomplishments include:

- Submitted the Site Sustainability Plan, which was cited by HQ as an example in the guidance issued for the FY 2012 plan.
- Led a multi-day workshop in Washington DC on using high-performance computing for energy research and assisted DOE in writing an assessment of the impacts of climate change.
- Implemented low cost initiatives to meet minimum requirements for setback controls during the off-hours and an awareness campaign to drive sustainability behavioral change in September 2011.
- Made very good progress in water conservation (12%), exceeding the DOE/NNSA goal of 8%, and is installing low flow sink aerators (about 1,800) across the site.
- Progress was made on GHG reduction with the Contractor on target to meet the DOE/NNSA goal and in reducing the fleet use of fuel through expanded use of alternative vehicles.
- Progress was made on HPSB with B451 achieving LEED Silver certification and five buildings completed under the HPSB assessments (T4727, T4729, T3724, T3725, and T3726).
- Met the renewable energy goal through the purchase of RECs by DOE/NNSA on behalf of the Northern California Power Consortium.

Despite the fact that Contractor fully met the ATI measure, we have identified additional energy saving opportunities that could be implemented such as the maximizing the server consolidation and virtualization at B112, ongoing building re-commissioning, and implementing the ECM 3.2 low cost energy saving opportunities identified at several facilities in FY 2010 (B113, B115, B170, B191, B391, B691, U291). The Contractor should also 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: Safety Management System

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 criteria was to achieve OSHAS 18001 accreditation of safety management system, maintain ISO 14001 accreditation and provide an implementation plan to achieve ISO 9001 certification in FY 2013. The contractor received recommendation that their ISO 14001 certification should continue, received OHSAS 18001 certificate of registration in September 8, 2011, and received LSO approval of the ISO 9001 implementation plan on September 26, 2011.

ATI 5: Contractor Assurance System

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. Working with the Contract Reform initiatives, the Contractor developed the Management Assurance System (MAS) concept and finalized the MAS graphic which illustrates the mapping and evolution of the LLNL CAS into MAS for LLNS stakeholders, including PADS, assurance managers and LLNS senior management. The LLNS Board of Governors approved the revised CAS description document that incorporates the MAS on September 28, 2011.

To enhance transparency, the Contractor developed and implemented the MAS results portal. This portal provides access to reports across the Laboratory which provides oversight results for the MAS. The portal was rolled-out successfully to LLNS and LSO managers.

Additional notable accomplishments include:

- Underwent two parent company functional management reviews, one on document management and one which reviewed the criteria and lines of inquiry from NAP-21.
- The CAS Office facilitated LLNS participation with LSO on the pilot for joint FY 2012 LLNS/LSO integrated assessment plan. In this pilot, functional managers from LSO and LLNS helped integrate the use of CAS elements in LSO oversight activities and align planned assessment activities to promote efficiency and avoid duplication.
- Development of Senior Management Dashboard. These metrics are used as a management tool at the LLNS Directors' Monthly Performance Review; actions related to these metrics are used at other governance venues such as the LLNL Operations Review Boards, Operations Excellence Council and the Senior Management Safety Team.



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	Complete essential activities for core weapons program requirements.	Excellent	Excellent
1.1	Management of defense program work.	Excellent	Excellent
1.2	Management of critical capabilities, skills, and facilities supporting nuclear weapons work.	Excellent	Excellent
2	Strengthen the foundation of deterrence through stockpile science, technology, and engineering.	Excellent	Excellent
2.1	Resolve Weapons Physics and Engineering Challenges.	Very Good	Excellent
2.2	Develop a Scientifically Rigorous Approach to UQ.	Excellent	Excellent
3	Propose and implement strategies for sustaining a strong deterrent at low numbers compatible with START, NPR and CTBT goals.	Excellent	Excellent
3.1	Develop Innovative Life-Extension Design and Technology Options, Including Surety.	Excellent	Excellent
3.2	Enhance the Rigor of Assessments and Certifications.	Excellent	Excellent
3.3	Make 3-D Assessments with UQ Standard Practice.	Excellent	Excellent
3.4	Optimize the Return of Information from Surveillance Activities.	Excellent	Excellent
4	Execute Inertial Confinement Fusion Ignition and High Yield Campaign in support of stockpile stewardship.	Very Good	Excellent
4.1	Successfully lead execution of National Ignition Campaign (NIC)	Very Good	Excellent
4.2	Transition NIF to routine facility operations by the end of FY 2012.	Very Good	Excellent
4.3	Execute high energy density experiments on ICF facilities to support current and future needs of Stockpile Stewardship, other national security, Fundamental science, and energy missions.	Excellent	Excellent
5	Support Nonproliferation and Threat Reduction.	Excellent	Excellent
5.1	Provide technical capabilities to limit or prevent spread of materials, technology, and expertise related to weapons of mass destruction and secure inventories of surplus materials and infrastructure usable for nuclear weapons.	Excellent	Excellent
5.2	Shape future USG and international capabilities to detect, prevent and deter proliferant activities.	Excellent	Excellent
5.3	Arms control and cooperative threat reduction.	Excellent	Excellent



Measure	Description	NNSA	LLNS
5.4	Support needs of intelligence community.	Excellent	Excellent
5.5	Detect, defer and mitigate foreign intelligence collection and espionage and international terrorist threats.	Excellent	Excellent
6	Provide Science, Technology, and Engineering Excellence.	Excellent	Excellent
6.1	Assure the quality of the core science, technology and engineering (ST&E) competencies.	Excellent	Excellent
6.2	Develop, implement, and periodically update an integrated and balanced ST&E strategy.	Excellent	Excellent
6.3	Develop strategic collaborations and an open campus.	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
7	Support Current and Evolving Mission Performance by Providing Effective and Efficient Facilities and Infrastructure.	Very Good	Excellent
7.1	Operate mission critical and user facilities as national capabilities.	Excellent	Excellent
7.2	Maintain and manage F&I assets with flexibility to support capabilities required for current and future missions.	Excellent	Excellent
7.3	Demonstrate progress towards achieving the Federal and DOE energy efficiency and water conservation goals.	Satisfactory	Excellent
7.4	Deinventory and program transfer. Process Security Category I/II SNM to meet transportation requirements and ship according to the 2012 Deinventory Plan.	Excellent	Excellent
7.5	Execute effective Environmental Restoration and D&D programs. Provide effective and efficient support programs such as D&D of contaminated facilities and environmental restoration to enable continued compliant facility operations and reduce DOE environmental liabilities.	Very Good	Very Good
7.6	Treat store and disposition waste from RHW facilities in a safe, compliant and efficient manner to support mission objectives.	Excellent	Excellent
8	Maintain safe and environmentally sound operations in an efficient and effective manner in support of mission objectives.	Very Good	Very Good
8.1	Maintain effective environment, safety, and health institutional programs.	Very Good	Very Good
8.2	Maintain a high level of nuclear safety/operations and	Very Good	Very Good



Measure	Description	NNSA	LLNS
	compliance through effective nuclear safety/operations programs.		
9	Maintain Secure Operations in an Efficient and Effective Manner in Support of Mission Objectives.	Good	Very Good
9.1	Support the NNSA enterprise through DNS management excellence.	Good	Very Good
9.2	Implement security reform to improve mission effectiveness and drive cost efficiency.	Good	Excellent
9.3	Reduce the security footprint.	Very Good	Excellent
9.4	Realize operational efficiencies through modernization or operational/process improvements.	Very Good	Excellent
9.5	Maintain and sustain an effective S&S program in all topical areas. Demonstrate assurance in meeting NNSA security requirements and expectations.	Good	Very Good
9.6	Recruit, train, and exercise the talents of people and critical skills.	Good	Very Good
9.7	Update the comprehensive post de-inventory security program plan.	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
10	Manage Business Operations in an Effective and Efficient Manner while Safeguarding Public Assets and Supporting Mission Objectives.	Excellent	Excellent
10.1	Perform effective financial management in accordance with applicable requirements and standards.	Very Good	Very Good
10.2	Demonstrate an effective and efficient supply chain management function.	Excellent	Excellent
10.3	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
11	Governance assures performance and creates long-term sustainable value for the institution.	Very Good	Very Good
11.1	Establish an effective WFO Management Program to achieve LLNL's vision of a broad National Security Laboratory.	Very Good	Excellent



Measure	Description	NNSA	LLNS
11.2	Improve the security performance and agility of the IRM systems.	Excellent	Excellent
11.3	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	Excellent
11.4	Develop and implement initiatives to increase the effectiveness and efficiency of the Laboratory.	Excellent	Excellent
11.5	Institutional implementation of ESH&Q and Security requirements and line management accountability and responsibility for performance.	Very Good	Excellent

A-4 Stretch Targets and Results

The PEP included 12 stretch targets in Programs, 5 in Operations, and 4 in IM. The following table summarizes the status of the stretch targets in each performance area:

Target Status	Programs	Operations	Institutional Management
Pass	11	4	4
Fail	1	1	0
Total	12	5	4
% Passed	92%	80%	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 2.1.1	Develop and demonstrate HED platform in support of longer-term predictive capability framework objectives.	Pass
Target 2.1.2	Use Boost Validation Suite (with initial metrics) for PCF 2012 Pegpost.	Pass
Target 2.1.3	Demonstrate improvement in the physics and geometric fidelity of the ASC Code System through a simulation of a UGT.	Pass
Target 2.1.4	Effectively collaborate with NSTec to bring JASPER back on line meeting the cost and schedule milestones and achieve 3 Plutonium shots.	Fail

Target	Description	Status
Target 3.1.1	Apply QMU methodology to the efficacy of promising UC technology.	Pass
Target 3.1.2	Close out surety Enhanced Collaboration and pursue follow-on.	Pass
Target 3.1.3	Demonstrate via simulation a surety feature in 3D.	Pass
Target 3.4.1	Work with HQ and other sites to jointly develop and implement 1) an integrated state-of-the-stockpile surveillance metric, and 2) surveillance diagnostic tools and strategies to inform the current and future state of health for selected materials, components and subsystems of the stockpile.	Pass
Target 4.1.2	10% of Level 0–2 milestones as defined in the NIC Execution Plan are completed more than 30 days ahead of schedule.	Pass
Target 4.1.5	Total Recordable case rate for NIC-related activities does not exceed 1.8 during FY 2011.	Pass
Target 4.3.3	Provide NIF facility access and infrastructure to support Fundamental science experiments that were reviewed by interim committee prior to establishing the Science on NIF Committee	Pass
Target 6.2.2	Monitor the long-term impact that LDRD investments have made on the scientific, programmatic, and intellectual property position of LLNL for 2011.	Pass

Operations

Target	Description	Status
Target 7.6.1	Develop and execute a baseline for activities necessary to implement the CH-TRU Waste Packaging Instructions by end of FY11.	Pass
Target 8.1.4	Continue progress on planned upgrades of outdated emergency voice alarm systems by September 2013. All buildings certified as upgraded per signed project plan.	Pass
Target 8.1.5	Decrease worker risk by eliminating high hazard chemicals that do not have a foreseeable mission use. Develop a DOE approved plan/schedule by December 2010 and implement.	Pass
Target 8.1.6	Purchase an appropriate electronic medical records system and develop a schedule to implement by the end of FY 2012.	Fail
Target 8.1.7	Perform two “make/buy” analyses for support service which result in full implementation of one of the service models in FY 2011.	Pass

Institutional Management

Target	Description	Status
Target 10.1.7	By 12/23/10, demonstrate that that LLNS cost accounting practices are compliant with Cost Accounting Standards, or are on schedule to become fully compliant as agreed to by the CO, and obtain approval of the FY 2011 CASB Disclosure Statement.	Pass

Target	Description	Status
Target 10.2.2	By September 16, 2011, eliminate 24% of Director's Office Organization and Operations and Business PAD unclassified single function machines (a single machine capable of only printing, faxing, copying, and scanning) and replace with new unclassified multi function machines within these two organizations.	Pass
Target 11.1.1	WFO and non DP programs revenue trend upward	Pass
Target 11.5.4	Obtain essential materials necessary for a subcritical training assembly for nuclear safety training and develop plans for establishing a nuclear training center that meets post de-inventory security requirements.	Pass

A-5 Multi-Site Targets

Multi-Site	Multi-Site Target	Status
1 Stockpile (30% minimum of Multi-Site total)	<p>1.1 Ensure W76-1 LEP Production remains on schedule as identified in PCD W76-01 2011-A (as revised) for deliveries to the U.S. Navy.</p> <p>Implementing Criteria: 1. 1.1 Meet quarterly production targets. 1.1.2 Interface with Navy to confirm requirements.</p> <p>Exit Criteria: Deliver PCD quantities to the Navy.</p>	Pass

Multi-Site	Multi-Site Target	Status
	<p>1.2 Complete B61 Phase 6.2/2a Option Down Select and Cost Study FY11 activities that enable a 2017 FPU.</p> <p>Implementing Criteria: 1.2.1. Provide design options to support down select and costing in Phase 6.2A (SNL & LANL) (MAY11). 1.2.2. Complete site inputs/deliverables to support Gate Package for Gate B (SNL, LANL, PX, KCP, SRS & Y-12) provide site inputs for Phase 6.2 report (SNL, LANL, PX, KCP, SRS & Y-12) (APR11). 1.2.3. Provide site inputs for MIR (SNL, LANL, PX, KCP, SRS & Y-12) (AUG11). 1.2.4. Provide site inputs for WDCR (SNL, LANL, PX, KCP, SRS & Y-12) (AUG11). 1.2.5. Provide IPR report (SNL, LANL & LLNL) (JUL11). 1.2.6. Complete site inputs/deliverables to support Gate Package for Gate C (SNL, LANL, PX, KCP, SRS & Y-12) (SEP11). 1.2.7. Exit criteria: Phase 6.2/2A Report is submitted for approval to the B61 Project Officers Group (SEP11).</p>	Pass
	<p>1.3 Initiate FY 2011 W78 Phase 6.1 activities.</p> <p>Implementing Criteria: 1.3.1. Interface with DoD to identify, analyze and confirm requirements. 1.3.2. Identify preliminary design options. Exit criteria: Document the results of items 1.3.1 and 1.3.2 and them to NNSA W78 Program Manager (SEP11).</p>	Pass
	<p>1.4 Execute the defined Surveillance Program.</p> <p>Implementing Criteria: Each site will execute the defined surveillance program, according to the PCD, and value stream the surveillance assessment portfolio to optimize benefit to stockpile stewardship.</p> <p>Exit criteria: Complete FY11 surveillance activities in accordance with the PCD. Provide evidence of completion (written report) for each activity identified in approved IWET plans. Report FY11 surveillance activities to QERTS.</p>	Pass

Multi-Site	Multi-Site Target	Status
<p>2 Enterprise Integration (10% minimum of Multi-Site total)</p>	<p>2.1 Support business process transformation and relocation of the Kansas City Plant.</p> <p>Within allocated resources, and taking into account NNSA stockpile priorities, focus budget, resources, planning and execution to support KCP inventory reductions, requalification planning for relocated products and processes, and product build-ahead's in support of KCRIMS in order to minimize impact on delivery commitments.</p>	<p>Pass</p>
	<p>2.2 Successfully complete NNSA-approved priority activities to achieve enhanced efficiencies.</p> <p>2.2.1. NNSA, SNL, PX, Y-12, LANL, LLNL, and SRS implement their Site specific Governance Plan in accordance with the NNSA approved Project Execution Plan.</p> <p>2.2.2 Implement institutional cost (IC) and assessment metrics. Utilizing headquarters identified non-mission IC categories, each site establishes an FY2010 (baseline), planned ratios based on new IC metric (target) for FY2011, the basis/logic for the ratios and an enterprise roll-up. Each site will also submit IC projection targets for FY2012 and FY2013. The plan shall include two assessment (profile and effectiveness) metrics.</p>	<p>Pass</p>



Multi-Site	Multi-Site Target	Status
	<p>2.3 Implement Enterprise Wireless project.</p> <p>a. From the 2010 MITRE wireless report identify those opportunities (applications or use cases) that would have the most benefit for NSE, and for those identified opportunities, develop a common set of technology standards and an implementation approach to accelerate the use of the wireless technologies across NSE. (30 Mar 2011).</p> <p>b. Deliver an execution plan of proposed wireless projects including their associated benefits for FY 2012 enterprise wireless funding consideration (Draft plan 30 May 2011) (Final plan 30 Aug 2011).</p> <p>c. Put into practice the enterprise wireless security framework developed in FY 2010 and use it to obtain a complex-wide accreditation for one of the technologies. (30 Sept 2011).</p>	Pass
	<p>2.4 Achieve cost savings of \$178M during FY11 for activities established by the NNSA Business Management Advisory Council (BMAC).</p> <p>Aggressively pursue and achieve cost savings in accordance with individual Site objectives, guided by the opportunities identified by the BMAC to ensure a contribution to overall NNSA cost efficiency goals.</p> <p>Completion Target: This measure has been achieved when the Contractors collectively have achieved the savings target.</p>	Pass





Multi-Site	Multi-Site Target	Status
3 Science (10% minimum of Multi-Site total)	3.1 Achieve National Ignition Campaign FY11 Objectives: 3.1.1. Begin first integrated ignition experiments NLTQ4FY11. 3.1.2. Complete operational qualification of the first set of NIC ignition diagnostics by Q2FY11.	Pass
	3.2 Demonstrate key physics necessary for certification of an advanced surety method by 30SEP11.	Pass
	3.3 Complete Barolo experiments at U1a by end of Q2FY11 (31MAR11).	Pass
	3.4 Provide reliable, quality service and access to any NNSA laboratory from any NNSA-designated ASC national user facility, independent of the location of the computing resource being utilized: 3.4.1 Access to any NNSA-designated computing user facilities will be available to all three Laboratories. 3.4.2 Implementation of a peer review process for access to each designated facility with criteria based on program priority; user facility will work to assure machine utilization rates of $\geq 85\%$.	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	Mission Need as justification for future construction or development
CD-1	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
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
LANL	Los Alamos National Laboratory
LEP	Life Extension Program
LLNL	Lawrence Livermore National Laboratory
LLNS	Lawrence Livermore National Security, LLC
LOCAS	Line Oversight & Contractor Assurance System
LSO	Livermore Site Office



M&O	Management & Operator contractor of a NNSA site
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
NSSS	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	Radioisotopic 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

