



Department of Energy
National Nuclear Security Administration
 Washington DC 20585

November 30, 2017

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR STEVEN GOODRUM
 MANAGER

LOS ALAMOS FIELD OFFICE [REDACTED]

FROM: WILLIAM I. WHITE [REDACTED]
 ASSOCIATE PRINCIPAL DEPUTY ADMINISTRATOR

SUBJECT: Los Alamos National Security, LLC (LANS) DE-AC52-06NA25396
 Fiscal Year 2017 Award Fee Determination

The National Nuclear Security Administration (NNSA) has completed its assessment of LANS' performance of the contract requirements for the period of October 1, 2016 through September 30, 2017, as evaluated against Clause B-4 Leadership Performance as defined in the Performance Evaluation and Measurement Plan (PEMP). Based on assessments provided in the NNSA Performance Evaluation Report, incentive fee amounts are as follows:

	<u>At Risk %</u>	<u>Available</u>	<u>Final</u>	<u>Percent</u>
B-4: Leadership Perf. Evaluation	100%	\$8,851,718	\$6,196,203	70%

In addition, the fixed fee and total fee summaries are provided below for your information:

Fixed Fee	\$35,406,874	\$35,406,874
SPP (Fixed Fee)	<u>\$6,029,763</u>	<u>\$6,029,763</u>
Total Fixed Fee	\$41,436,637	\$41,436,637
 Total Summary	 \$50,288,355	 \$47,632,840





DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Field Office
Los Alamos, New Mexico 87544



JAN 04 2018

Ms. Andrea N. Martinez
Prime Contract Office
Los Alamos National Security, LLC
Los Alamos National Laboratory
P.O. Box 1663, MS-M722
Los Alamos, NM 87545

Dear Ms. Martinez,

References:

1. Contract Number DE-AC52-06NA25396, Los Alamos National Security, LLC and the Department of Energy, National Nuclear Security Administration
2. Part I, Section B, Clause B-2, *Contract Type and Value*
3. Part I, Section G, Clause G-1, *Government Contracts*
4. Part I, Section H, Clause H-2, *Performance Direction*
5. Part I, Section H, Clause H-14, *Performance Incentives*
6. Part I, Section H, Clause I-83, *DEAR 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution (DEC 2000)*
7. Part I, Section I, Clause I-121, *Management Controls*
8. Part I, Section I, Clause I-123, *DEAR 970.5204-2, Laws, Regulations, and DOE Directives (DEC 2000) (DEVIATION)*
9. Part I, Section I, Clause I-124, *Conditional Payment of Fee, Profit, and Incentives - Facility Management Contracts*
10. LA-UR-17-25477, Type B Plutonium Shipping Event Causal Analysis and Expanded Common Cause Analysis of Related Events (July 6, 2017).
11. LANS letter PCM-17-146 from Andrea Martinez, Prime Contract Office Director, LANS, to Contracting Officer Jennifer Jung, Subject: *Response to Contracting Officer's Notice of Intent to Reduce Los Alamos National Security, LLC, Fiscal Year 2017 Earned (At Risk Performance Incentive) and Fixed Fee*, dated November 27, 2017

Subject: Reduction of Los Alamos National Security, LLC, Fiscal Year 2017 Earned (At Risk Performance Incentive) and Fixed Fee

This letter is to inform you that I have determined that the Los Alamos National Security, LLC (LANS) performance failures associated with the June 16, 2017 shipping event, in which a LANS employee sent three Type B container plutonium shipments by air cargo on two separate aircraft from Los Alamos National Laboratory (LANL) to Lawrence Livermore National Laboratory and the Savannah River Site, constitute a Third Degree performance failure with respect to the contract's Environment, Safety, and Health (ES&H) terms and conditions.

Although the event did not result in a direct impact to workers, the public, or the environment, the event was a failure to meet the ES&H performance requirements of the contract and reflects a lack of focus within certain functions of the Laboratory on improving the operational discipline

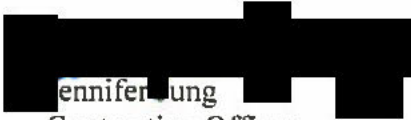
necessary for an effective ES&H program. This event was also preceded by other significant ES&H lapses at LANL which indicates a programmatic breakdown in LANS' safety management system.

The National Nuclear Security Administration (NNSA) acknowledges LANS' many accomplishments and the dedication of its professional workforce, and has considered the following LANS' mitigation factors, including those listed in Contract Clause I-124 *Conditional Payment of Fee*, in its decision: LANS suspended all off-site shipments; maintained a hazardous material shipping pause; took personnel actions; and developed a Corrective Action Plan which has improvements designed to minimize the probability of future improper shipments. LANS also created a High Reliability Team and established a new Deputy Director position to manage high consequence activities so work can be completed safely, performed the causal analysis investigation mentioned above (Reference 10), and took other actions described in your reply.

NNSA is concerned that LANS originally viewed the plutonium shipments as isolated events and only identified one root cause which focused on the failure to conduct the required quality review. It was only after discussion with NNSA that LANS expanded its causal analysis to consider other recent safety failures and produced the more critical, systemic-focused Corrective Action Plan referenced in your response. In addition, NNSA remains concerned that the need to improve operational discipline has yet to be fully embraced by all functions of the Laboratory, as evidenced by the September 2017 near miss incident where a worker failed to follow appropriate alarm response procedures in responding to a low oxygen alarm.

For the reasons set forth above and in our letter of November 15, 2017, after consideration of all mitigating factors presented by LANS in its letter of November 27, 2017, NNSA has determined that LANS' inadequate management controls associated with the June 16, 2017, Type B Plutonium Shipment Incident constitutes a Third Degree ES&H performance failure. In light of both the seriousness of the event, balanced by the mitigation taken by LANS, I am reducing LANS' FY 2017 earned (incentive) and fixed fee, in accordance with Contract Clause I-124 (Reference 9), by \$3,120,231.

NNSA is committed to protecting the workers at LANL, the public, and the environment. We expect LANS will implement comprehensive improvements to the LANL ES&H program and look forward to seeing the results of LANS' Corrective Action Plan. If you have any questions, please contact the undersigned at (505) 606-0249.


Jennifer Jung
Contracting Officer

cc:

I. White, NA-1
B. Rains, NA-APM-1
J. McConnell, NA-50
R. Hendrickson, NA-MB-1
M. Thompson, NA-10
T. Fischer, NA-GC
S. Goodrum, NA-LA, OOM
J. Griego, NA-LA, OOM
T. Wyka, NA-LA, OOM
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T. O'Leary, NA-LA, BA
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J. Johnson, LANS, MS-E578
NA-LA Official file



BA: 04JJ- 771613



National Nuclear Security
Administration

Los Alamos National
Security, LLC
Performance Evaluation
Report (PER)

NNSA Los Alamos Field Office

Evaluation Period:
October 2016 – September 2017

November 9, 2017

Executive Summary

Summary

This Performance Evaluation Report (PER) provides the National Nuclear Security Administration (NNSA) assessment of Los Alamos National Security, LLC (LANS) performance period from October 2016 – September 2017, as evaluated against the Performance Evaluation and Measurement Plan (PEMP). The NNSA took into consideration all input provided (e.g. Contractor Assurance Systems (CAS) data, Program Reviews, etc.) from NNSA Program and Functional Offices. LANS submitted a Performance Self-Assessment Report that covered the rating period, which included both accomplishments and areas for improvement. NNSA reviewed the self-assessment report and considered it in conducting this evaluation.

This report evaluates how the Contractor has strategically partnered with DOE/NNSA and demonstrated leadership success in achieving positive results. The following are specific areas of performance used to evaluate the overall leadership of LANS:

- (a) Achieving site mission deliverables while supporting and enabling the overall DOE/NNSA mission.
- (b) Improving safety culture.
- (c) Maintaining critical skills and infrastructure.
- (d) Advancing Science, Technology & Engineering (ST&E), including Laboratory Directed Research and Development (LDRD) and Tech transfer.
- (e) Operating the Laboratories effectively, efficiently, safely, and securely to meet current mission requirements and to accomplish additional Strategic Investments that enhance or develop new capabilities, address long-standing challenges, or respond to new or emerging threats.
- (f) Resolving issues and ensuring continuous improvement internally and across the DOE/NNSA while meeting Contract requirements.
- (g) Demonstrating parent company contributions to the overall improvement of the Laboratories and the DOE.

Overall, LANS delivered superior technical performance and products in almost all scientific and engineering mission areas and was highly successful in completing key milestones and delivering national security mission requirements during the performance period. Expectations were exceeded in managing the NNSA Mission portfolio including the Weapons, Non-Proliferation, Emergency Management and Incident Response, and Nuclear Counterterrorism while simultaneously effectively supporting Strategic Partnership Programs. The use and development of Science, Technology and Engineering resources and capabilities exceeded expectations and were managed in a highly effective manner that aligned with national priorities and DOE/NNSA strategic guidance.

Operationally, the Laboratory made substantial progress in the campaign for treatment of Remediated Nitrate Salt (RNS) waste drums; completed and achieved operational start-up of the Transuranic (TRU) Waste Storage Facility (TWF) ahead of schedule and under budget, successfully started additional programmatic operations in the Plutonium Facility (PF-4); and partnered effectively with NNSA on multiple safeguards and security projects with complex-wide benefits. Significant efforts were undertaken to address critical skills, with several

favorable outcomes noted. Noteworthy improvement was made in the area of capital project management.

The Laboratory made progress in the implementation of a Performance Assurance Improvement Plan (PAIP) in support of maturing Laboratory-wide CAS. LANS Parent Companies demonstrated commitment to mission achievement and resolution of pressing challenges. While progress was made toward improving management systems and in improving application of those systems across the Laboratory, significant additional improvement in management systems and disciplined use of quality systems across the institution is needed to produce consistently satisfactory performance outcomes. Remaining CAS challenges resulted in significant operational consequences realized during the performance period. For example, an event involving improper shipment of material demonstrated weaknesses in causal analysis and corrective action implementation resulting in adverse operational impacts. In addition, weaknesses in conduct of operations were observed, incidents of Security Concern events increased, and two Capital Projects were executed below expectations. Several instances of less than adequate coordination and partnering by Laboratory Leadership with DOE/NNSA on programmatic and operational issues were also experienced during the performance period.

Balancing superior technical performance and products in many areas with significant CAS challenges, LANS' overall rating is Good. The following sections expand upon the accomplishments and challenges referenced in this overview.

(a) Achieving site mission deliverables while supporting and enabling the overall DOE/NNSA mission.

LANS delivered superior technical performance and products in almost all scientific and engineering mission areas. Annual Stockpile Assessment Execution Plan milestones were met including Annual Assessment Reports for four major legacy weapon systems (B61, W76, W78, and W88). B61-11 fragmentation tests and a Blast Tube test and multiple flight tests for the W88 were completed. New weapon response summary documents and supporting basis documents were delivered for the B61 and W88. All Stockpile Modernization milestones were met for the B61-12 LEP and the W88 Alt 370, including Phase 6.4 Authorization for the Alt 370 achieved on a significantly shortened schedule. Leadership was demonstrated on Predictive Capability Framework and the Enhanced Capabilities for Sub-Critical Experiments project, specifically for the Advanced Sources & Detectors sub-project. The Laboratory demonstrated a new predictive capability to assess advanced safety concepts, meeting closure requirements for a Level 1 milestone; and overall completed 134 of 138 Level 2 milestones (97%). Efforts to re-capture formulation knowledge for Insensitive High Explosives were initiated leading to development of a pilot production capability for TATB and PBX 9502 to support of future LEPs. Challenges were experienced in surveillance with the inability to recover scheduled activities. Materials experiments for weapons simulation improvements including the Eurydice sub-critical experiment and the manufacture of a test article for the Vega sub-critical experiment were achieved. Improved execution efficiencies allowed eight hydrodynamic experiments at DARHT in a twelve-month period, including a Certification Readiness Exercise design and a novel cold environment hydrotest. Two W87-like development pits were manufactured. Two partitions of the Trinity Supercomputer were merged and resourced to production computing, and CD-1 was achieved on the cooling project for the next generation of exascale computing

architecture. Weapons code improvements included Version 6.2 of the Monte Carlo n-particle code. Interim delegation of product acceptance activities was achieved on Container Kit Assemblies and Detonator Cable Assembly products.

The Off-Site Source Recovery Program exceeded stretch goals through recovery of over 2,000 excess sealed sources. The sixth SPE, Pyrois experimental campaign, and Consent-to-Ship reviews for future Nuclear Detection instruments were all successfully achieved; however challenges with information management were experienced in some campaigns. Material Management and Minimization (M3) program progress was good with all Level 2 milestones achieved, although operational issues impacted surplus plutonium conversion goals. The planned 100 kilograms of plutonium oxide was produced; however, full quality certification was not completed. A Program Life-Cycle Cost Estimate for surplus plutonium disposition was completed. A series of fast critical experiments with Japanese partners was completed in support of removing HEU and plutonium fuels from Japan's Fast Critical Assembly. New instrumentation for safeguards measurements of spent nuclear fuel were developed and tested in Sweden and Nondestructive Assay Inspector Training for both U.S. and International Atomic Energy Agency personnel were completed. Execution of Block 8 training exceeded expectations and emergency response mission support met expectations. Thirteen fuel clads were produced for DOE Space Power programs which are awaiting acceptance in FY 2018. The Am-241 CLEAR Line project began recovering Am-241 for the DOE Office of Science, and Medical isotopes production to meet nationwide medical demand exceeded expectations.

Completion and Startup of the new TWF was achieved under budget and ahead of schedule with TRU waste equivalent to 400 55-gallon drums shipped from TA-55 to Area G, reducing risk and preserving mission capability. The Weapons Engineering Tritium Facility (WETF) completed waste shipping readiness activities and sent two shipments to SRS. Substantial progress was made in development of Supplemental Environmental Projects (SEPs) and the TA-3 Steam Plant Replacement Project via an Energy Savings Performance Contract. Minor project accomplishments include the Decontamination & Demolition (D&D) completed on the Press Building and at Fenton Hill.

(b) Improving safety culture.

LANS made progress in industrial safety and some production areas, but challenges persist. Safety statistics over the last performance period are the lowest Total Reportable Case rates and Days Away Restricted Time since contract inception. A Voluntary Protection Program (VPP) assessment resulted in recertification of Star Site status by DOE. A pilot Safety Academy for Excellence (SAFE) program developed in collaboration with other DOE/NNSA National Laboratories was launched onsite for managers to learn and practice concepts of operational leadership and situational management through cost effective, well-designed operational simulations.

Worker involvement in safety and security was evident through continued maturation of Worker Safety and Security Teams as validated through VPP. Exceptional work force culture and professionalism of operators was noted during federal readiness reviews of TWF and the Waste Characterization Reduction and Repackaging Facility (WCRRF). Significant progress in the treatment campaign for the Remediated Nitrate Salt (RNS) waste drums at WCRRF was

enabled through a deliberate and methodical approach by both operators and leadership.

Weaknesses surfaced in conduct of operations were not observed during independent formal readiness reviews. There were several events resulting from issues with procedural compliance, work planning, and a failure to stop and inform management when unanticipated events occurred. The safety organization, rather than operations, identified a greater proportion of infractions indicating a negative trend in criticality safety infraction data and an overall weakness in the CAS. Causal analysis for recent events identified a number of issues with leadership and roles and responsibilities, while corrective actions focused on procedures and training.

A new Deputy Director for Mission Assurance was appointed and assumed the role of Contract Assurance Officer and Laboratory Risk Officer to ensure executive-level attention on risk management. A High Reliability Team was formed to further increase risk management awareness across the laboratory, identifying potential areas of concern to enable immediate response by Line Managers, resulting in over 100 potential concerns identified and corrected.

(c) Maintaining critical skills and infrastructure.

Significant efforts were undertaken to address critical skills, with some favorable outcomes noted; and noteworthy improvement was made in outcomes on capital project management. Efforts to address sufficient, stable, and qualified support/oversight workforce continued. Gains were made in criticality safety analyst training, qualification, and staffing. Despite progress in several key areas, challenges remain in maintaining sufficient personnel with required skills for the current and projected workload in some areas. An engineering pipeline training program was successful in recruiting and developing qualified mission-essential engineering staff. A new employee orientation and technology/service initiative to improve onboarding cycle time and the new hire experience received external recognition for success in diversity/inclusion. Management training development programs for all levels of the workforce were renewed, with particular focus on improving first line supervisor training to address operational challenges.

Two NNSA infrastructure Deep Dives were conducted with excellent preparation and data presentation. Challenges were noted with misaligned facilities databases. Data quality issues were identified in the Facility Information Management System, and a Corrective Action Plan (CAP) to address the problem is behind schedule; a substantial number of other structures and facilities (OSFs) are not appropriately tracked as real property; and there were several dispositions of real property without government approval. Institutional and General Plant Project (IGPP/GPP) planning needs improvement to ensure quality scope, schedule, and cost definition inputs to the sponsoring programs in support of the Congressional notification process. Preliminary Real Estate Plan quality issues and less than adequate response to information requests resulted in three leases that entered into holdover status. Eight alarm replacement projects addressed antiquated systems, closing out associated impairments; however, overall impairments remain.

In the area of infrastructure, the laboratory effectively supported Norton Line easement negotiations and continued effective use of indirect funding to address infrastructure improvements, including facilities D&D in support of footprint reduction. While the Laboratory

is not on track to meet the energy or water intensity goal by 2025 (FY17 annual target for energy or water intensity was not met), progress in targeting facilities with high energy use to implement highest-impact, cost-efficient energy efficiency programs was noted. Preventative Maintenance was strong with a completion ratio above 99% while Corrective Maintenance backlogs continue to grow across the Laboratory with no prioritized plan evident, degrading availability of Management Level (ML) 1 and ML-2 systems. The Laboratory delivered a high quality draft *Supplement Analysis (SA) of the 2008 Site Wide Environmental Impact Statement* on schedule.

Capital project performance met expectations overall with nine capital line-item projects in process; five projects met expectations, two exceeded expectations and two were below expectations. The challenged Radiological Liquid Waste Treatment Facility (RLWTF) - Low Level Liquid Waste project was "Over Target Baseline" increasing cost by \$7M to \$90M. Performance has not improved on this project which is now over two months behind schedule. The RLWTF Transuranic Liquid Waste project did not submit a Critical Decision-2/3 package on time and the draft cost estimate and schedule exceeded the approved CD-1 parameters with noted design configuration management and unresolved safety analysis issues. The TWF project exceeded expectations with the CD-4 Project Completion four months ahead of schedule and \$1.7 million below the Total Project Cost, the first time an NNSA Hazard Category 2 nuclear facility has been completed ahead of schedule and under budget. The TA-3 Substation project team exceeded expectations in supporting US Army Corps of Engineers design and execution of the Design-Build effort within budget and ahead of schedule, routinely providing creative solutions. Overall, NNSA experienced severe challenges accessing project records, files, and documentation.

(d) Advancing Science, Technology & Engineering (ST&E), including Laboratory Directed Research and Development (LDRD) and Tech transfer.

The Laboratory continued to perform as a national leader in ST&E, exceeding expectations and with closely aligning with national priorities and DOE/NNSA strategic guidance. A Director's "Health of Science" Review self-evaluation helped prioritize ST&E initiatives and Six external Capability Reviews, including the independent NNSA-Chartered Predictive Science Panel, were conducted providing baseline capabilities in terms of depth, management effectiveness, and the adequacy of staffing. Metrics reflect robust ST&E strength, including over five hundred Highly Cited Publications, over ten Patent Applications, and improving metrics on public access to Laboratory research. The Laboratory won five 2016 R&D 100 Awards, and another Laboratory-developed technology won the R&D 100 Green Technology Special Recognition Award.

The Laboratory Directed Research and Development (LDRD) program successfully implemented key prior year recommendations including line-program partnership for LDRD selections and execution, portfolios with higher risk projects; and a new "Mission Foundations Research" category pilot improved effectiveness in transforming ideas to mission solutions. Leadership was demonstrated in the National Strategic Computing Initiative through the development of five new Exascale Computing Project elements. Significant contributions were made to electrical Grid Modernization Laboratory Consortium including integrated control and optimization under uncertainty work; machine learning and data analytics; design of resilient power systems; and analysis of extreme events and threats. Unique capabilities addressed national challenges and priorities evidenced by the development and deployment of Gen-IV Reactor and the Special Purpose Reactor, and providing leadership and expertise to DOE

consortia in the areas of Advanced Simulation for Light Water Reactor; Materials Protection, Accounting, and Control Technologies; Nuclear Energy Advanced Modeling and Simulation; Nuclear Energy Enabling Technologies; and Fuel Cycle R&D.

Metrics covering Cooperative Research and Development Agreements, Strategic Partnership Agreements, Non-Federal Entity Agreements, Material Transfer Agreements with foreign entities, and Strategic Intelligence Partnership Projects reflect a diverse portfolio of shared research expertise.

(e) Operating the Laboratories effectively, efficiently, safely, and securely to meet current mission requirements and to accomplish additional Strategic Investments that enhance or develop new capabilities, address long-standing challenges, or respond to new or emerging threats.

While many core administrative, operational, and institutional processes were effective and efficient; substantial progress is required in institutional discipline to produce consistently satisfactory performance outcomes.

Four production operations were successfully started at PF-4 with each Readiness Assessment built upon lessons learned from prior reviews evident in the steady reduction in findings identified in each iteration. While competency was demonstrated in PF-4 readiness activities, challenges were realized in the restart of the WCRRF and startup of the TWF as shortcomings in preparedness for readiness activities were identified. The Criticality Safety (CS) program continues to mature. While CS Evaluation quality improved, operational implementation demonstrated negative trends with a high number of procedures requiring rework. Closure of resident criticality infractions in PF-4 continues to lag expectations but significant progress has been made to address legacy (>12month) resident infractions; overall a positive trend.

Efficient and effective procurement, human resources, and financial operations with sound internal controls were implemented as reflected against benchmark targets. All small business socioeconomic goals were substantially exceeded and aggressive use of the NNSA Supply Chain Management Center, achieved \$44.7M in documented savings, 25% of the total savings achieved by NNSA and 50% above target savings. Management of health benefits resulted in plan enhancements and a one-time cost savings of \$8M. Aggressive recruiting resulted in 6.1% targeted growth in the permanent workforce, with an 86% acceptance rate for external hires. The Internal Audit program conducted robust, professional audit practices resulting in continuous institutional learning in the limited business and programmatic areas where employed. Several requests for exceptions for non-compliant consulting agreements and pre-purchases of services were disapproved.

Safeguards and Security program performance was highly effective with several minor challenges experienced. The Laboratory led the complex in partnering with NNSA Counter Unmanned Aerial Systems and Ultra High Reliability Wireless projects with potential for complex-wide application and long-term cost savings. Security awareness programs effectively reduced the number of suspicious package incidents by 133%; over \$20M in security system enhancements were completed; and a solution for Voice over Internet Protocol (VoIP) communication systems was developed with application across the NNSA complex. Minor challenges included increases in Incidents of Security Concern (primarily Potential Unauthorized Disclosures); two Material Balance Area accounts were incorrectly coded; and

specific security measures were not properly implemented on three occasions.

Institutional and Weapon Quality Management Systems matured more slowly than expected. Challenges include: organizational stability; roles and responsibilities; standardized site quality documentation; and inadequate leveraging of assessments institution-wide. Several instances in which quality engagement on capital and other projects was prompted by NNSA, rather than self-initiated by the Laboratory. The Product Accepted Trouble Free to NNSA was below target at 80% and several FY 2016 Quality Assurance Survey issues remain unresolved at the end of the fiscal year. In addition, product submittals were insufficiently planned, and poorly integrated, negatively impacting Federal resources for product acceptance/interim delegation oversight.

Progress toward recertification of TRU waste shipments to the Waste Isolation Pilot Plant exceeded expectations through responsiveness to external audits, assessments, data requests and readiness activities at TA-55. Communications with NNSA regarding waste management support activities was less than adequate. The annual Radioactive Waste Acceptance Program audit resulted in no findings; however, fines were imposed by the State for Resource Conservation Recovery Act Hazardous Waste Facility Permit violations, reflecting continued challenges in waste management operations.

Progress in maturing Emergency Response (ER) programs was made with independent, comprehensive assessments concluding program elements and documentation assessed met expectations. Eleven of twelve scheduled ER exercises were completed, and an additional unscheduled exercise (TWF) was conducted. A Facility Preparedness Program Implementation Plan to standardize preparedness was issued and new drill and exercise programs to assist with standardization across the laboratory were deployed. The Chemical Safety Program was insufficiently engaged with emergency planners.

(f) Resolving issues and ensuring continuous improvement internally and across the DOE/NNSA while meeting Contract requirements.

Although some limited progress was made toward improving management systems and application of those systems across the Laboratory, significant additional improvement in management systems and the disciplined use of quality systems across the institution is needed to produce consistently satisfactory performance outcomes.

A Performance Assurance Improvement Plan (PAIP) was implemented in support of maturing Laboratory-wide CAS to improve overall performance. A Board of Governors (BOG) Functional Management Review validated completion of PAIP milestones, including a strengthened Issues Management Review Board, improvements to Lessons Learned and Issues Management processes, continuation of causal analysis training, maturation of executive metrics, and completion of several effectiveness evaluations. While progress was noted, CAS shortcomings require additional attention as evidenced by undisciplined closure of issues during system transition; softening of self-discovery metrics; and uneven use of CAS across the institution. Weakness in causal analysis and corrective action implementation to prevent single point failures persisted as evidenced in the noncompliant shipping event. Identification of potential issues continued to improve in some areas, as evidenced by a significant increase in "FOD Trending" reports.

While a thorough and robust Federal Manager's Financial Integrity Act evaluation was completed, effective risk management practices are not uniformly in place. Examples include Office of the Chief Information Officer's FY-17 Annual Self-Assessment submission that did not include a comprehensive evaluation of the Laboratory's Risk Management Framework and business processes.

Partnering/Leadership across the complex was demonstrated through creation and implementation of the Weapons Enterprise PBX 9502 Working Group to resolve manufacturing issues on weapons components for Life Extension Programs, including standing up a lab-to-production pilot plant to formulate insensitive high explosives. Additionally, the Laboratory effectively partnered with the Nevada Nuclear Security Site for the successful completion of the Federal Operational Readiness Review for the Hazard Category 2 upgrade of the U1a Complex, leveraging experience gained during the TA-55 resumption activities to enhance U1a operations and documentation.

The Laboratory implemented a successful safety and health program, making targeted progress in critical functional areas (e.g., beryllium, electrical safety, exposure assessments, and electronic medical records). Deployed industrial hygiene staff and line organizations executed corrective action plans to strengthen the implementation of the institutional beryllium protection program. Emphasis on safe execution of electrical work continued with enhancing resourcing and maintenance of critical skills to support implementation. Internally developed Integrated Safety Management (ISM) Safety Performance Objectives, Measures, and Commitments were met; however, non-conservative categorization of events and issues precludes adequate trending to identify root causes.

(g) Demonstrating parent company contributions to the overall improvement of the Laboratories and the DOE.

Parent companies demonstrated commitment and increased effectiveness in contributing to mission achievement and resolution of pressing challenges. The Board of Governors (BOG) provided resources and was active in driving improvement on high-visibility activities/challenges, including: PF-4 Readiness/Resumption; safe implementation of the treatment of RNS waste; and the activities associated with the DOE-EM Legacy Cleanup Bridge Contract. Seven Parent Organization Functional Management Reviews (POFMRs) were completed by the BOG including assessments of progress in PAIP implementation, Safety Basis Sustainability, and the Transuranic Liquid Waste Project. In addition, six science-based Capability Reviews were completed, validating Laboratory science capabilities. Effective partnering of the Laboratory management team and company assurance support to address closure of findings from POFMRs and Capability Reviews is not consistently evident, although improving.

The BOG partnered with NNSA and Laboratory leadership to accept and implement new responsibilities for governance and Contractor Assurance identified in NNSA Supplemental Directive (SD) 226.1B including co-authorship of a Laboratory Governance System Description, and revised approaches to the contractually required Parent Organization Oversight Plan for the coming performance year. The creation of a Deputy Laboratory Director for Mission Assurance and Risk Management by the BOG was a positive step in restoring responsibility for Mission Assurance at the very top executive ranks of the institution. Increasing rigorous and risk-informed BOG engagement guiding and directing Laboratory staff was also a positive step.