



**Department of Energy**  
**National Nuclear Security Administration**  
 Washington DC 20585

November 30, 2017

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR GEOFFREY BEAUSOLEIL  
 MANAGER

NNSA PRODUCTION OFFICE



FROM: WILLIAM I. WHITE  
 ASSOCIATE PRINCIPAL DEPUTY ADMINISTRATOR

SUBJECT: Consolidation Nuclear Security, LLC, DE-NA0001942  
 Fiscal Year 2017 Performance Incentive Fee Determination

The National Nuclear Security Administration (NNSA) has completed its assessment of Consolidated Nuclear Security, LLC, performance of the contract requirements for the period of October 1, 2016 – September 30, 2017, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP). Based on assessments provided in the NNSA Performance Evaluation Report, award fee amounts are as follows:

	<u>At Risk %</u>	<u>Available</u>	<u>Final</u>	<u>Percent</u>
PO 1: Manage the Nuclear Weapons Mission	35%	\$13,976,550	\$12,578,895	90%
PO 2: Reduce Global Security Threats Mission	10%	\$3,993,300	\$3,593,970	90%
PO 3: DOE & Strategic Partnership Project Mission Objectives	5%	\$1,996,650	\$1,816,952	91%
PO 4: Science, Technology & Engineering (ST&E)	5%	\$1,996,650	\$1,896,818	95%
PO 5: Operations & Infrastructure	30%	\$11,979,900	\$9,583,920	80%
PO 6: Leadership	15%	\$5,989,950	\$5,450,855	91%
<b>Total</b>		<b>\$39,933,000</b>	<b>\$34,921,409</b>	<b>87%</b>

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

Fixed Fee	\$0	\$0
SPP (Fixed Fee)	\$1,172,068	\$1,172,068
Total Fixed Fee	\$1,172,068	\$1,172,068
<b>Total Summary</b>	<b>\$41,105,068</b>	<b>\$36,093,477</b>





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National Nuclear Security  
Administration

Consolidated Nuclear  
Security, LLC

Performance Evaluation  
Report (PER)

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NNSA Production Office

Evaluation Period:  
October 1, 2016 –  
September 30, 2017

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November 30, 2017

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## Executive Summary

This Performance Evaluation Report provides the National Nuclear Security Administration (NNSA) assessment of Consolidated Nuclear Security, LLC (CNS) performance of the contract requirements for the period of October 1, 2016 – September 30, 2017, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan. NNSA took into consideration all input provided (e.g. Contractor Assurance System, Program Reviews, etc.) from NNSA Program and Functional Offices both at Headquarters and in the field.

Performance against the Goals summarized below resulted in an overall rating of Very Good for CNS. Specific observations for each Goal are provided in the following pages.

CNS earned Very Good ratings on Goals 1, 2, and 5, exceeding expectations on many Objectives and Key Outcomes. CNS continued to successfully deliver on our nation's stockpile requirements (achieved 103% of the overall negotiated baseline quantities) and on the balance of the NNSA mission portfolio including Non-Proliferation, Emergency Management, and Incident Response Training while overcoming multiple challenges, including aging infrastructure, equipment issues, weapon-specific technical issues, workload/recapitalization project alignment challenges, and weather events. CNS ensured Operations and Infrastructure were maintained and available to meet assigned missions. Environment, Safety, Health & Quality performance continued to improve. The safeguards and security program demonstrated effective performance. CNS made discernable, substantial improvement to the core foundations of cyber security and curtailed IT incidents, yet struggled to meet expectations in information technology and cyber security.

CNS earned Excellent ratings on Goals 3, 4, and 6, exceeding almost all of the Objectives for advancing Strategic Partnerships and Nuclear Counterterrorism Emergency Response, to include interagency support. CNS efforts to improve technology development work spaces continue to be successful. CNS demonstrated strong leadership commitment to the mission, improved its performance excellence culture, responded to conditions and events that generated opportunities for learning, and demonstrated the ability to collaborate across the DOE complex.

## Goal 1: Manage the Nuclear Weapons Mission (35%)

Under this Goal, CNS earned a rating of Very Good, and 90% of the performance incentive fee allocated to this Goal. CNS exceeded many of the Objectives and Key Outcomes and met overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. However, CNS continues to experience schedule delays with respect to high-priority weapons programs, namely the B61-12 Life Extension Program. Continued delays on some weapon sub-projects are forcing more activities near critical path and adding increased risk to the program and supporting activities and operations.

CNS completed 105% and 104% of the overall production baseline Stockpile Surveillance deliverables for the Pantex and Y-12 Plants, respectively. Significant accomplishments included initiating production operations of the Laser Gas Sampling System II at the Pantex Plant; exceeding baseline requirements for pit surveillances and X-ray activities at the Pantex Plant; exceeding requirements for Disassembly and Inspection activities at the Y-12 Plant; and accelerating Nondestructive Evaluation tasks at the Y-12 Plant from Fiscal Year (FY) 2018 into FY 2017 to reduce programmatic risks. Issues included missed re-baselined schedules for weapon work at Y-12 and missed Pantex schedules for the Disassembly and Inspection, the Rebuild, and the Joint Test Assembly.

CNS completed 110% of the production baseline for the W87 Limited Life Component Exchange. CNS achieved authorization on the W80 Alt 369 and completed the First Production Unit (FPU) ahead of schedule. In the dismantlement program at the Pantex Plant, CNS completed the total quantities of a renegotiated mix of systems, responded quickly to new weapon response information enabling resumption of operations within 30 days, and resumed W80 Dismantlement activities. At the Y-12 Plant, CNS completed 105% of production baseline Canned Subassembly Dismantlements and 119% of Component Disposition production baseline deliverables.

CNS completed 96% of the W76-1 Life Extension Program (LEP) Warhead production baseline, 101% of the W76-1 LEP canned subassemblies (CSA) production baseline, and 100% of deliveries to the Navy. For the B61-12 LEP, CNS completed major milestones including assembly and certification of the first two qualification evaluation CSAs, receiving qualification evaluation releases for seven manufactured components, and continuing their support for PBX-9502 reformulation and process development of B61-12 assembly and disassembly operations. While major B61-12 milestones are not impacted to date, continued schedule delays, associated with key sub-projects, are increasing the number of activities on or near critical path and increasing risk to the System FPU in FY 2020. The weapon activities have continued to be delayed despite recovery efforts increasing overall schedule risk. CNS must remain focused on prioritizing the activities and resources necessary to support the high-priority weapons programs, including B61-12 LEP and W88 ALT 370, to recover schedule delays and reduce risk to the program.

For the W88 ALT 370, CNS successfully demonstrated readiness to proceed to Phase 6.4 (Production Engineering), completed Integrated Baseline Reviews, supported the

Collaborative Authorization System Total Life-Cycle Environment (CASTLE) transition activities, and completed engineering and evaluation walk-downs for machining operations at the Y-12 Plant and is rebaselining test and evaluation disassembly and inspection activities into the next fiscal year. For the W80-4, CNS successfully demonstrated readiness to proceed to both Phase 6.2 (Feasibility) and Phase 6.2A (Cost Study), completed all planned special studies at the Y-12 Plant, and provided multiple W80-4 weapon training classes to the Design Agencies.

For Uranium Sustainment and Process Technology Development activities, CNS effectively adapted to changing circumstances impacting Area 5 De-inventory, remedied quality issues with the Electrorefiner glovebox design and procurement, executed the Extended Life Program, and evaluated Depleted Uranium technologies. Significant accomplishments included accelerating the processing of solids in 9212 as part of the Low Equity Material Disposition Program, establishing positive momentum for the 9212 Exit Strategy by conducting out-of-service system planning and isolations, developing work packages and engineering studies for the decontamination/sort/segregation facility and A-2 Wing isolation, and removing equipment in 9215 O and M Wings to enable future Direct Chip Melt Furnace and machine lathe installations. Despite demonstrating first production use of a new X-Ray, CNS cannot routinely use this new equipment until the issues previously identified on a support system are addressed.

For Materials Recycle and Recovery and Storage, CNS responded to unexpected/upset conditions with methodical and safety-focused approaches that enabled sustained capabilities, and NNSA commends them for improving operational availability and reducing the maintenance backlog. CNS exceeded expectations for production of UO<sub>3</sub>, UF<sub>4</sub>, and consolidation logs; delivered Rackable Can Storage Boxes; size-reduced U/Zr; and performed can re-containerization. CNS produced the most metal since 2012 and the greatest percentage of in-specification material since before 1994.

During the course of the year, CNS communication regarding the Reduction occurrence, efforts to address high Material at Risk (MAR) contributors, and operational health assessment and recapitalization planning for storage at Pantex did not meet expectations.

For Lithium activities, CNS provided exceptional technical and logistical support for the Lithium Production Capability Analysis of Alternatives and lithium material bridging activities. Efforts not meeting expectations included the restart of the lithium dust collection system, establishment of technology development capabilities, and installation of the Production Cleaning Station (PCS). Due to technical glovebox requirements that should have been foreseen by CNS, the PCS had to revert to current technology instead of using a safer process.

## Goal 2: Reduce Nuclear Security Threats (10%)

Under this Goal, CNS earned a rating of Very Good, and 90% of the performance incentive fee allocated to this Goal. CNS exceeded many of the Objectives and Key Outcomes and met overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS exceeded expectations for support to the NNSA Render Safe Program, and provided critical, exceptional support to multiple exercises, including the Nuclear Forensics Pre-Detonation Device Exercise “Diamond Thunder” and a large interagency Radiological Dispersal Device exercise. The CNS Radiological Assistance Program team provided excellent support for major national events, including equipment maintenance, personnel training, and readiness.

CNS exceeded the Highly Enriched Uranium (HEU) down-blend and disposition metric by characterizing, packing and shipping substantial quantities of excess HEU on or ahead of schedule. CNS completed surplus HEU consolidation castings ahead of schedule for sales and supply agreements, and provided substantial input for scope toward development of a comprehensive Program Lifecycle Cost Estimate for surplus plutonium disposition. CNS provided crucial support for the U.S. High Performance Research Reactor Project schedule by completing 12 low enriched uranium (LEU) molybdenum castings. CNS continued to work diligently with foreign counterparts to execute HEU removals from France, UK, and Canada, and in some cases exceeded expectations by responding to last minute customer changes. CNS provided support for a complex LEU fuel shipment from China to Ghana to support conversion of a reactor in Ghana, a project that took months of planning and effort.

CNS conducted more training courses than originally planned and provided effective and efficient Alarm Response Training, Personal Radiation Detection Training, Low Scope-Alarm Response Training, and a Customized Alarm Response Training. CNS trained over 760 emergency responders to respond to an attempted theft of nuclear and radiological material, achieved student ratings of 3.9 out of 4, and expanded the training portfolio to new cities. CNS provided support for work with China and Russia and the International Atomic Energy Agency. CNS provided key support and leadership to the US-UK Portal Monitor for Authentication and Certification project, and proactively worked with other members of the multi-lab team, all while successfully transitioning as the new multi-lab project leader.

Despite achieving noteworthy results, tracking and forecasting of work in several areas was inhibited by data limitations at CNS. These limitations required excessive federal involvement to facilitate programmatic and financial planning at the expected standard.

### Goal 3: DOE and Strategic Partnership Projects Mission Objectives (5%)

Under this Goal, CNS earned a rating of Excellent, and 91% of the performance incentive fee allocated to this Goal. CNS exceeded almost all of the Objectives and Key Outcomes and met overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS continued excellent performance in the areas of Nuclear Counter-Terrorism Emergency Response, Federal Bureau of Investigation and Department of Homeland Security support, and training for other government agencies. CNS was selected as the New Brunswick Laboratory (NBL) Program Office Certified Reference Material Distribution Center for Uranium. CNS also shipped 13 units of metal standards to the Japan Atomic Energy Agency for the NBL Program Office. CNS provided excellent support for the Naval Reactors feedstock deliveries.

CNS executed shipments of enriched uranium to foreign customers (France, Belgium, and South Korea) and made an extraordinary effort to accommodate last minute changes to a secure shipment. CNS provided excellent support for Strategic Partnership Projects and received new funding from White Sands Missile Range (WSMR) to study coating techniques for uranium parts. Despite funding and technical issues earlier this fiscal year, CNS completed fabrication on the NASA core sections for the KRUSTY project.

#### Goal 4: Science, Technology, and Engineering (ST&E) (5%)

Under this Goal, CNS earned a rating of Excellent, and 95% of the performance incentive fee allocated to this Goal. CNS exceeded almost all of the significant Objectives and Key Outcomes and has met overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS successfully executed a 2017 Plant Directed Research and Development (PDRD) strategy that aligned discretionary investments with continued improvement. The Office of Technology Maturation recognized the CNS PDRD strategy as a benchmark for other NNSA sites at the FY 2017 PDRD Program Review. CNS advanced critical mission-enabling technologies, such as uranium and lithium technologies to include chip processing, microwave casting, multi-mass leak detection, and induction brazing.

CNS performance exceeded expectations through improvements to facilities and infrastructure, such as reclaiming more than 5000 square feet of high-contamination/beryllium areas as open laboratory space in Y-12 Building 9202 and repairing a support system in Pantex Building 11-14.

CNS performance exceeded expectations in intellectual property areas: 55 technology agreements against a goal of 20, and 62 invention disclosures against a goal of 55. Ten patents were issued, and nine applications were filed. Planned deliverables of Direct Manufactured Material for the LEP program were completed two months ahead of schedule. Three key CNS technologies (microwave casting, Uranium Processing Facility (UPF) calciner, and induction brazer) achieved Technology Readiness Level 7.

## Goal 5: Operations and Infrastructure (30%)

Under this Goal, CNS earned a rating of Very Good, and 80% of the performance incentive fee allocated to this Goal. CNS exceeded many of the significant Objectives and Key Outcomes and has met overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS matured processes to execute a cost effective and reliable Environment, Safety, & Health (ES&H) system with the achievement of the Voluntary Protection Program Star Status at Y-12 and improved safety statistics. CNS developed ES&H performance metrics that monitor the health and effectiveness of ES&H programs, recognizing that continued management attention is needed to merge distinct and separate site programs (e.g., Beryllium Safety Program). CNS strengthened the Quality Assurance (QA) program with use of a Quality Council. NNSA is concerned with the lack of closure of the 2015 QA Survey-1 issues, Nuclear Quality Assurance (NQA)-1 application to weapon/weapon-related items serving a safety function, calibration program implementation, quality metrics, and NAP-24A, and 35-Account implementation.

CNS made substantial positive progress in addressing longstanding facility and infrastructure issues through various process improvements. Most notably these efforts resulted in marked support for seven Line Item projects, the Pantex Administrative Support Complex, and 244 General Plant Projects. Significant accomplishments included achieving CD-0 for the West End Protected Area Reduction Project and the Zone 11 High Pressure Fire Loop, CD-1 approval for the new Fire Station and CD 2/3 submittal for a new Emergency Operations Center. CNS continued to execute the Bay/Cell Modernization strategy, resulting in more construction, designs, and project planning than in any other year. Further, CNS exceeded the Recapitalization projects mid-year costing projection of \$101M by achieving \$103M. NNSA's expectations were not met in achieving a certified Earned Value Management System, and Calciner Project issues resulting in a 20 month extension in schedule and a significant increase in the project's Total Project Cost, which will require NNSA to revisit the CD-1 decision.

The safeguards and security program demonstrated effective performance. CNS made a substantial effort to implement effective budget controls, finishing the rating period within fiscal limits, but additional measures are needed. The execution of the CNS information protection program needs improvement, which includes classified matter protection for both sites, security involvement in non-nuclear, offsite shipping at Y-12, and technical security at Pantex. The Emergency Management program is capable and is aggressively addressing needed improvements, such as onsite radiation control and offsite monitoring responses at Pantex.

CNS effectively maintained aging infrastructure and process equipment in support of the mission. Significant electric distribution systems work improved reliability. A reliability-centered maintenance program was formed, resulting in significant reductions in maintenance planning and execution times. CNS provided outstanding support and input to the Master Asset Plan process, improving its G2 reporting and extensive support to the complex as a

BUILDER Center of Excellence. CNS struggled to maintain reliability of a certain support system at both sites. CNS successfully managed technical issues and facility availability for weapon programs while effectively balancing production and safety.

CNS improved overall business performance and provided integrated services while delivering efficiencies and cost savings. CNS enhanced and expanded automated shipping and completed all major activities to integrate their multi-site material management. High Explosive magazine optimization increased storage by 40%. CNS demonstrated significant improvements in the submission of FY 2018 planning documents, but the lack of coordination between CNS organizations to track and clearly identify cost savings has hampered program success. CNS achieved over 98% of the Small Business Goal.

CNS migrated several thousand computer users and executed the Business System Modernization Project, yet struggled to meet expectations in Information Technology (IT). CNS made discernable, substantial improvement to the core foundations of cyber security and curtailed IT incidents. CNS took multiple steps to stabilize the cyber security workforce and establish a more cohesive Enterprise program, however, programmatic improvements are required.

CNS effectively dispositioned weapon production-related issues; responded to system upsets and aging facility and infrastructure concerns; and worked with the Design Agencies and NNSA to resolve weapon response (WR) issues. CNS expedited Area 5 De-inventory, reduced nuclear hazard risk in Building 9204-2, and addressed new criticality safety issues (e.g. detector pulse testing and fissile solution mopping). Some areas for improvement include submittal quality, timely updates, response to issues, and planning. The UPF Design Authority did not fully meet expectations for the UPF substation capacitor banks and the transmission lines.

## Goal 6: Leadership (15%)

Under this Goal, CNS earned a rating of Excellent, and 91% of the performance incentive fee allocated to this Goal. CNS exceeded almost all of the significant Objectives and Key Outcomes and has met overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS demonstrated strong leadership commitment to the mission, improved its performance excellence culture, responded to conditions and events that generated opportunities for learning, and demonstrated the ability to collaborate across the DOE complex. Very positive progress in these areas has been made, with significant attention given to the people, the Plants, the processes, and overall performance. CNS has created an environment and is building a culture of Performance Excellence that address the issues of today and builds for the future.

The Foundations for Performance Excellence, Relational Based Leadership, and Performance Based Leadership training courses were used to drive culture change throughout the organization. The CEO and President personally devoted a significant amount of time to sharing his vision of excellence in these courses. The monthly Organization Health Review has worked issues and risks in an integrated approach with notable transparency to NPO. The Enterprise Risk Management process is being used to prioritize work, an Enterprise best practice.

The Contractor Assurance System (CAS) continued to mature. Corporate resources conducted a detailed review of the CAS, identifying areas to increase its effectiveness. Development of an Enterprise-wide issues management system began.

CNS demonstrated significant leadership in transforming and further integrating the two sites. CNS improved their internal integration and collaboration as demonstrated by the successes of the Integrated Facility Allocation Plan and Material Acquisition and Control.

Recognizing the efforts and benefits of the CNS Continued Safe Operating Oversight Team and the Extended Life Program, the Defense Nuclear Facilities Safety Board terminated an annual reporting requirement noting that the “extended life program and associated safety strategy mitigates the risk associated with aging infrastructure. The program has many positive aspects that may be worth replicating at other defense nuclear sites.”

The Senior Management Review Team was instrumental in improving integration and relations between the Production Plants and Design Agencies; driving improvements in timeliness of WR for off-normal conditions; providing focused attention to resume W80 legacy operations; and pushing for new approaches for responding to weapons issues. CNS has shown noteworthy improvements in some key areas and has been asked to provide support to the Savannah River Site (labor negotiations), Sandia National Laboratory (work planning & control), and Lawrence Livermore National Laboratory (industrial safety).