



National Nuclear Security
Administration

Consolidated Nuclear
Security, LLC

Performance Evaluation
Report

NNSA Production Office

Evaluation Period:
October 1, 2022, through
September 30, 2023

December 15, 2023

Controlled by: National Nuclear Security Administration, (b)(6), NNSA
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Executive Summary

This Performance Evaluation Report (PER) provides the National Nuclear Security Administration (NNSA) assessment of performing entity, Consolidated Nuclear Security, LLC (CNS), performance of the contract requirements for the period of October 1, 2022, through September 30, 2023, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP).

Pursuant to the terms and conditions of the Contract, the PEMP sets forth the criteria by which NNSA evaluates CNS performance, as required by Federal Acquisition Regulation (FAR) Part 16.4, which outlines expectations for administering award-fee type incentive contracts. This is the type of contract in place between NNSA and its management and operating (M&O) partners. A key requirement of FAR Part 16 is to establish a plan that identifies award-fee evaluation criteria and “how they are linked to acquisition objectives which shall be defined in terms of contract cost, schedule, and technical performance.”

In accordance with the regulation, the PER assesses CNS performance against the PEMP and provides the basis for determining the amount of award fee earned by CNS. NNSA took into consideration performance information obtained from NNSA Program and Functional Offices, both at Headquarters and in the field, and from the Contractor Assurance System. This report provides performance feedback, highlighting key accomplishments and issues that need attention for Contract Line Item Number (CLIN) 0001. CLIN 0002, Uranium Processing Facility performance feedback, is reported separately. Specific observations for each Goal are discussed below.

The Pantex and Y-12 workforce delivered the nuclear deterrent for our nation and allies and worked collaboratively across the Nuclear Security Enterprise (NSE) to solve key challenges. In a time of geopolitical turmoil and unprecedented workload at both sites with five different nuclear weapon modernization programs in various production and planning stages, compounded by managing multiple, complex material modernization and infrastructure projects, and planning for a site separation, the Pantex and Y-12 team achieved all required deliveries to the Department of Defense (DoD) and exceeded almost all of the NNSA nuclear weapons deliverables while sustaining a safe and secure work environment.

Notable accomplishments included exceeding the baseline for B61-12 Life Extension Program (LEP) assembly, B61-12 LEP Canned Subassembly (CSA), Base Surveillance at Y-12, W88 Disassemblies, and Warhead Dismantlements. CNS met the baseline for W76-1 Rebuilds, W88 ALT 370 assembly, and B61 Disassembly Life Extension Program (DisLEP). Secondary Stage Modernization programs performed well. Uranium Modernization, Depleted Uranium Modernization (DUM), Lithium Modernization and Special Materials (SM) are all continuing to progress well. The fiscal year (FY) 2023 Lithium Electrolytic Cell campaign resulted in producing 125 percent of the planned product and was complete ahead of schedule. Metal production and metal working milestones were met despite operational events. CNS significantly improved safety by placing the Oxide Conversion Facility into cold standby and performed exceptionally in modeling strategic material supply/demand and production processes.

CNS did not meet milestone deliverables for Technology Integration, Electrorefiner, and Calcliner.

CNS had several significant accomplishments and exceeded deliverables in multiple areas for Global Nuclear Security. High Assay Low Enriched Uranium (HALEU) castings and HALEU downblending surpassed the FY 2023 deliverable, Downblend Offering for Tritium (DBOT) shipment quantities exceeded baseline goals, and CNS played a critical role in the removal of weapons-grade nuclear material from two countries, resulting in permanent threat reduction. CNS effectively responded to safety events during the year, adapting to changes, and delivering. CNS exceeded many objectives with science and technology and completed all Naval Reactors (NR) campaign shipments on schedule and exceeded the NR material forecast.

CNS safety metrics exceeded their targets in all categories this year. CNS resumed Weapons Material/Weapons Related Material and Low Level Radioactive Waste shipments, reducing the backlog of both streams. Security performance at both sites met or exceeded expectations and included the implementation of the Portable Intrusion Detection System at Y-12. CNS continued to improve the safety basis quality, consistency and control set and continued to support the Pantex Safety Basis Redesign (PSBR) initiative.

CNS mission enablement was challenged when a criticality safety occurrence and multiple fires revealed weaknesses in disciplined operations, electrical safety and combustible loading. CNS continued to be challenged with project performance, yet a positive trend formed in overcoming numerous long standing challenges and completing projects. Cost growth across the project portfolio is concerning. CNS completed the new Emergency Operations Center and Fire Station and stood up operations in the facility on schedule.

CNS business and legal programs continued to perform strongly and the hiring of critical skills and retention of experienced personnel improved, which is essential for success in separating the sites. CNS completed a number of multi-year, information technology (IT) and cybersecurity improvement efforts, which returned two of three Cybersecurity Program Topical areas to an acceptable level of performance. CNS also made progress in completing the Formal Authorization corrective actions with continued work and diligence still warranted in this area. CNS leadership continued to follow through on the commitment to improve the Y-12 Analytical Chemistry Organization's performance; however, continued focus is essential to identify and resolve latent safety management program weaknesses and sufficiently reduce mission risk from infrastructure failures. In response to serious safety events at Y-12 and with NNSA feedback, CNS leadership identified conduct of operations, the Contractor Assurance System (CAS), and Nuclear Criticality Safety (NCS) infractions as its highest priority issues and provided a path forward with measures to improve the programs. The CNS briefing that communicated these priorities demonstrated an understanding of the need for substantive improvement and accountability at the highest levels of leadership. Continued leadership commitment will be required to achieve the desired end state performance. CNS met or exceeded all deliverables for site separation, to include an approved Site Separation Implementation Plan (SSIP) and Bridging Strategy that enables NNSA to meet the October 1, 2024, planned transition to two separate M&O contracts. CNS maintained a solid transparent relationship with NNSA on all site separation activities.

CNS earned an overall rating of Very Good for FY 2023 and 90 percent of the award fee during this performance period. CNS earned an Excellent rating for Goals 1, 2, and 3 and Very Good for Goals 4 and 5. CNS earned an Excellent rating for the independent Goal 6.

Goal 1: Mission Delivery: Nuclear Weapons
CNS Amount of At-Risk Fee Allocation: \$33,809,436

Under this goal, CNS earned a rating of Excellent, and 93 percent of the award fee was allocated to this goal. Accomplishments significantly outweighed issues and no significant issues in performance existed. CNS exceeded almost all of the Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS met or exceeded modernization campaign scope at both sites. CNS completed 102 percent of planned FY 2023 weapon deliverables in the aggregate. All deliverables to DoD were met on or ahead of schedule.

Specific Performance through September 30, 2023

System	Total FY 2023
B61-12 Canned Subassembly	101%
Base Surveillance - Pantex	101%
Base Surveillance - Y-12	104%
W76-1 Rebuilds	100%
W88 DisALTs	102%
W88 ALT 370	100%
CSA Dismantlement	100%
B61 DisLEP	100%
B61-12 LEP	105%
Warhead Dismantlement	112%

CNS recovered to the Program Control Document (PCD) for W88 Disassembly for Alteration (DisALTs) and exceeded the production baseline. Assembly deliverables recovered to PCD ahead of schedule. This is the culmination of 18 months of recovery effort. CNS continues to monitor reacceptance for components with high attrition. CNS completed all production requirements for a major component. At Y-12, CNS was able to complete the mid cap engineering evaluation scope. However, this was done behind schedule.

CNS exceeded the B61-12 LEP assembly baseline at Pantex and met all DisLEP deliverables. Subcomponent production aligns with needs. Next level assembly lead times have increased. At Y-12, CNS was able to address electron beam welding issues that contributed to high attrition for B61-12 LEP CSAs, and was able to complete annual deliverables including LEP, shelf life program, and REST units. All other scope including radiation case reacceptance was completed. CNS executed the W80-4 baseline replan on schedule to support First Production Unit (FPU) in FY 2027. CNS supported successful program entry into Phase 6.4, *Production Engineering*. W80-4 LEP components progressed well this fiscal year and Process Prove-in CSAs were

manufactured. The Fulmer facility upgrades are within budget and ahead of schedule. The Major Item of Equipment work re-baselined a three month impact due to the vendor delivery schedule being longer than expected. The completion date still meets mission requirements.

CNS supported completion of the first W87-1 conceptual Hazard Analysis Task Team walkdown at Pantex and the Offramp Working Group. All Y-12 W87-1 Modification Program milestones ended the fiscal year on schedule and all required Test and Evaluation CSAs were completed. While the first pre-production lot of components was completed this fiscal year, resource constraints reduced pre-production activity and did not meet the schedule.

CNS continued W93 development activities at Pantex and early activity is increasing at Y-12. CNS established Product Realization Teams for both CSA and radiation case scope. CNS representatives actively engaged with Design Agency and Federal Program Office activities.

CNS met 7 of 10 Uranium Modernization Level 2 Milestones, while those for Technology Integration, Electrorefiner, and Calciner were not. Metal production and metal working milestones were met despite operational events. CNS significantly improved safety by placing the Oxide Conversion Facility into cold standby and continued to perform exceptionally in modeling strategic material supply/demand and production processes. CNS met 49 of 59 Level 3 Milestones including work related to removing out-of-service systems including difficult items, exceeding expectations. Technology Integration did not meet milestones associated with Modulated Tool Path machining implementation and with Direct Chip Melt, and Direct Electrolytic Reduction development missing performance milestones. These milestones, along with 9215 equipment demolition and the briquette study, were not accomplished.

The DUM program completed Level 2 Milestones early or on time except for Milestone 2.1, *Complete Critical Activities to Reestablish DU6Nb Production*. CNS cast binary ingots in support of the Electron Beam Cold Hearth Melt furnace test plan. General Manufacturing Modernization and Analytical Chemistry Capability are removing old machines and have installed new ones on or ahead of schedule. The Vacuum Arc Remelt (VAR) furnace restart milestone was not met due to multiple discoveries that were outside of CNS' control. The program provided binary ingots from the prototype VAR at Test and Demonstration Facility to support Stockpile Programs test hardware.

Lithium modernization met and exceeded established implementation plan objectives and completed all 5 Level 2 Milestones. CNS overcame challenges posed by the Development fire event and exceeded FY 2023 deliverables for Direct Material Manufacturing, Salvage, and Small Scale Wet Chemistry. The Cell campaign resulted in producing 125 percent of the planned product, which was completed ahead of schedule.

CNS performed well with the SM Modernization Program, with project performance on track to meet schedule and cost milestones. CNS achieved a notable accomplishment in completing the design of the Prototype Production Press and contract award.

CNS met all High Explosives and Energetics milestones and expectations in FY 2023. CNS supported B61-12 PBX 9502 development and W88 ALT 370 PBX 9501 qualification. CNS

also supported W87-1 LX-21 development and completed LX-17 qualification testing. CNS exceeded both the Defense Programs, Tritium and Domestic Uranium Enrichment Program Office, and Defense Nuclear Nonproliferation (DNN), International Cooperation, DBOT shipment milestones for FY 2023.

CNS met or exceeded the Pantex stockpile systems production baseline, with the exceptions noted below. Several programs exceeded the production baseline at Pantex this fiscal year, including the B83, W78, W80-1, and W78. CNS exceeded the W80-1 baseline by completing a DisLEP unit ahead of schedule to support the W80-4 LEP. W76-1 rebuilds at Pantex recovered to meet the baseline. W84 scope was completed ahead of schedule. CNS completed the W88 ALT 940 FPU at Pantex ahead of schedule. CNS did not meet the FY 2023 baseline by 2 W76-1 Joint Test Assemblies (JTAs) and 1 W80-1 JTA. The late completion of these units does not currently pose a risk to flight test schedules. All Y-12 surveillance scope was completed or exceeded this fiscal year despite technical challenges with radiography equipment. CNS was responsive to changing needs of the W88 and B61 stockpile systems. CNS exceeded the total quantity of baselined CSA dismantlements but did not complete all B83 CSAs specifically due to an equipment failure. CNS identified and completed alternative B83 work to substitute for the majority of scope delayed while the equipment is being repaired. Some projects in the Capability Based Investments portfolio experienced delays beyond their programmatic need dates, which increases risk to stockpile programs, but CNS escalated them for priority and ultimately earned Blue Milestone ratings for planning, risk, and financial management. For the Linatron project specifically, this was due to factors outside CNS' control. The Vapor Degreaser project was delayed due to the 9202 Development fire.

CNS was successful in its production research, development, and integration program scope this FY and hosted the successful Production Integration Summit in June of 2023. CNS completed Studies and Assessments (SA) scope on schedule and within budget. Y-12 activity associated with the study of aging stockpile components was reduced due to the 9202 Development fire event.

Goal 2: Mission Delivery: Global Nuclear Security
CNS Amount of At-Risk Fee Allocation: \$8,452,359

Under this goal, CNS earned a rating of Excellent, and 95 percent of the award fee allocated to this goal. Accomplishments significantly outweighed issues, and no significant issues in performance existed. CNS exceeded almost all of the Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS provided Subject Matter Experts (SMEs) to support multiple trainings (including alarm response trainings and radiation detection courses), performance evaluations, regulations, inspections, and insider threat mitigations to support global nuclear material security. CNS hosted over 200 events at the Emergency Response Training Facility since its opening in January 2023. CNS also developed and led a successful pilot for on-shift and limited notice drills along with supporting key engagements in Africa, Asia, and the Middle East.

CNS continues to provide support in advancing DNN research and development (R&D) missions. Specifically, CNS completed four measurement campaigns under the Pantex Seismo-Acoustic Wavefield project and completed two experimental campaigns for a Defense Nuclear Nonproliferation R&D venture-level project. CNS achieved additional success with the Uranium Production and Weaponization Testbed by proactively expanding technical capabilities.

CNS exceeded expectations for multiple deliverables including: DBOT nuclear nonproliferation shipment quantities, HALEU Scrap Recovery shipment quantities, quantity of low equity materials discarded, and procurement of ES-3100 production units. CNS completed the first MD-2 maintenance operation and continues to support the transition to shipping MD-2 containers for the Surplus Plutonium Disposition Program. CNS completed equipment qualification of the Pantex Container Superstation and completed functional testing of torque stations. While challenged by technical issues and the Development fire event, CNS met expectations with technical support of Molybdenum-99 production without the use of Highly Enriched Uranium (HEU). CNS was instrumental to the execution of FY 2023 removals from 2 countries, overcoming significant technical and administrative hurdles for both projects. CNS provided SMEs for the planning, packaging, loading, transportation, receiving, and disposition of removals to Y-12. CNS maintained readiness and qualifications for the Mobile Uranium Facility and successfully deployed and exercised new equipment and expertise in support of rapid recovery missions. CNS provided support to the Uranium Lease and Takeback Program by compiling and submitting the Low Enriched Uranium (LEU) demand surveys and providing timely and complete input to the LEU Secretarial Determination process.

CNS hosted multiple educational or training events, facility experiences, and workshops and participated in multiple demonstration exercises, workshops, working groups, and conferences to support and advance nuclear nonproliferation and arms control. CNS continued to provide support to the Nuclear Compliance Verification (NCV) Program by contributing leadership and active membership in NCV's Uranium Verification Team and Logistics and Readiness program. CNS conducted the Pantex Portal Monitoring Concept Demonstration to evaluate technologies and approaches under a hypothetical arms control treaty. CNS provided expertise for the Warhead Development Verification project's development of planning approaches. CNS delivered a cost estimate for the Pantex Monitoring and Verification Test Facility (PMVTF) on schedule and received approval to continue PMVTF efforts.

CNS met Nuclear Forensics National Nuclear Material Archive sample program requirements. CNS provided successful equipment management, maintenance, procurement, and operations for nuclear forensics programs, participated in two operational exercises, and maintained operational and technical readiness to support a pre-detonation device response. CNS Radiological Assistance Program Region 2 and Region 4 provided support to multiple national events, training events, and exercises.

CNS accomplished 12 new Uranium-Molybdenum (U-Mo) alloy castings after completing the final process qualification report earlier in FY 2023. Additionally, CNS successfully shipped U-Mo material to a third-party fuel fabricator.

CNS exceeded the HALEU downblending and HEU surplus consolidation casting deliverable and continues to retain sufficient amounts of HALEU onhand to meet customer demand.

Goal 3: Mission Innovation: Advancing Science and Technology
CNS Amount of At-Risk Fee Allocation: \$4,226,179

Under this goal, CNS earned a rating of Excellent, and 91 percent of the award fee allocated to this goal. Accomplishments significantly outweighed issues, and no significant issues in performance existed. CNS exceeded almost all of the Objectives and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

Plant Directed Research and Development (PDRD), including Strategic Partnership Projects, targeted approximately \$48.01 million (Y-12: \$33.37 million and Pantex: \$14.64 million) in FY 2023. PDRD projects selected, strengthened the technical capabilities of Y-12 (32 continuing and 46 new projects) and Pantex (24 continuing and 21 new projects), and supported the NNSA Strategic Vision. Funding met the overall PDRD Order and Guidance expectations. Specific projects that demonstrate strong CNS effort include Thermophysical Properties of Uranium Alloys, Lithium Isotope Separations, EasyMax Reactor Work, Colorimetric Beryllium Detection, and Sol-Gel Production of Uranium Alloys. The impacts of the R&D fire event impacted tasks in support of production and project work.

CNS continued to expand partnerships, university outreach, and technology transfer activities. CNS executed a Cooperative Research and Development Agreement (CRADA) for HALEU deconversion. CNS received 16 new patents and submitted 5 patent applications. CNS submitted all six identified Accepted Manuscripts to the Office of Scientific and Technical Information and is in compliance with scholarly reporting.

CNS completed all NR campaign shipments on schedule and within budget and exceeded the NR material forecast. CNS exceeded FY 2023 milestones for the High Flux Isotope Reactor and National Institute of Standards and Technology Reactor Oxide Production projects. CNS also exceeded Li-6 shipment milestones supporting the production of Tritium Producing Burnable Absorber Rods. CNS cast all components for the White Sands Missile Range Fast Burst Reactor Upgrade project and some components were fully fabricated and certified. CNS provided excellent programmatic, technical, and logistical support, fulfilling NNSA obligations to produce and deliver material to research reactors and isotope producers around the world. CNS co-authored an intelligence report that was published in the *Presidential Daily Briefing* book.

Goal 4: Mission Enablement
CNS Amount of At-Risk Fee Allocation: \$21,130,897

Under this goal, CNS earned a rating of Very Good, and 80 percent of the award fee allocated to this goal. Accomplishments greatly outweighed issues, and no significant issues in performance existed. CNS exceeded many of the Objectives and Key Outcomes and generally met the overall

cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

Safety metrics exceeded their targets in all categories. CNS successfully deployed a new learning management system at Pantex. At Y-12, CNS continued to reduce internal dose to historic lows while increasing the number of monitored individuals. CNS completed seven shipments of Weapons Material/Weapons Related Material and greatly increased the number of waste shipments to reduce the waste backlog. Environmental improvements such as Surface Water Hydrologic Information Support System house installations at Y-12 enhanced regulatory compliance posture. Weapons Quality Assurance (WQA) support for a production waiver ensured all weapons commitments were met. CNS increased staffing levels for quality auditors with delegated stamping authority in order to meet future increased mission deliverables. CNS had 2 chargeable WQA related Unsatisfactory Reports to the B-61 program. CNS efforts to reduce Pantex fire protection compensatory measures and signals yielded significantly positive results, allowing CNS to close the issue in Tools and Opportunities for Process Improvement through Communication. At Y-12, CNS experienced multiple fires and continues to have a large number of fire protection compensatory measures. Continued leadership commitment will be needed to ensure recently initiated actions are effective in addressing longstanding challenges with excessive combustible loading in Y-12 facilities. The CNS Long Term Stewardship program met all regulatory requirements and exceeded expectations.

CNS continues to improve the Pantex Safety Basis quality, consistency and control set through implementation of the Vision Plan and continues to support the PSBR teams. CNS completed all actions related to the Defense Nuclear Facilities Safety Board Recommendation 2019-1 Implementation Plan. CNS was successful at managing and maintaining a sustainable Unreviewed Safety Question (USQ) backlog at Pantex. Both High Pressure Fire Loop (HPFL) pumps were replaced, completing all actions from the 2015 HPFL Deep Dive Assessment by reducing water surges in the system. At Y-12, CNS leadership made impactful changes to address an Emerging Item of Interest specific to Potential Inadequacy of the Documented Safety Analysis (PISA) timeliness and communication; however, in some instances, the rationale for PISA and PISA USQ determinations requires improvement. CNS experienced an NCS occurrence at Y-12 that was the culmination of failures across multiple organizations. This event reinforces several pre-existing NNSA concerns, including issues with NCS infractions due to personnel errors and NCS control implementation. CNS responded in a manner commensurate with the severity of the event and continues to aggressively work actions to prevent recurrence.

The CNS response to equipment failures and execution of planned outages continues to meet expectations. Although CNS has seen proactive maintenance compliance improving throughout the year at Pantex, the maintenance backlog continues to grow. CNS implemented plans to improve maintenance execution throughput at Pantex through increased staffing. Execution of the work package improvement charters demonstrated tangible results in work package quality, but CNS continues to see issues at Y-12 in nuclear and high-hazard production facilities for utilities work packages. CNS demonstrated significant progress with the Job Hazard Analysis /work order integration pilot.

Recent events and corrective actions consumed CNS resources, limiting progress on initiatives to align CNS infrastructure programs with modern industry codes, standards, and practices. To resolve this concern, CNS leadership added multiple management positions, which should provide the bandwidth needed to pursue all improvement initiatives for Operations Support programs.

CNS executed a significant amount of project work this fiscal year and made significant progress reducing the carryover for recapitalization, and operations and maintenance program portfolios, but improvement is needed. CNS management was key to executing the Bays and Cells portfolio and completing the Flexible Support Facility. CNS support to the Office of Secure Transportation (OST) and Sandia National Laboratories drastically improved by reducing the number of open work orders by 50 percent. CNS was slow to report a negative trend for the Building 9204-2E Criticality Accident Alarm System and required additional funding. Issues with performance on Security Infrastructure Revitalization Program resulted in trends expected to substantially increase cost.

Line-Item project execution was mixed. The PX Gas Lab project successfully achieved Critical Decision (CD)-1 and the Special Materials Facility project completed 100 percent design. The Direct Chip Melt Bottom Load Furnace Project progressed well although resources continue to be a challenge. Design on the vacuum chamber progressed at risk because supporting development and testing activities were delayed due to operational events. CNS successfully completed the Fire Station and Emergency Operations Center projects and are in operation. CNS' Lithium Processing Facility project continued to execute within budget and schedule. CNS delivered the 60 percent facility design package 2 weeks ahead of baseline. Technology Readiness Level 7 homogenization production furnace runs were completed on schedule. CNS provided excellent support during the Office of Project Management's Independent Cost Estimate CD-3A package review resulting in completion of the Administrator's Energy Systems Acquisition Advisory Board-Equivalent presentation on schedule. However, the High Explosive Science and Engineering project will exceed the currently authorized Total Project Cost, related to design issues. The submitted Comprehensive Estimate at Completion was not adequate due to several issues including inaccurate cost reconciliations and cost model rate applications. The Calciner Project had difficulty overcoming vendor performance issues and operational events but is performing well against the recently approved performance measurement baseline.

CNS effectively protected Special Nuclear Material and classified matter as demonstrated through force-on-force exercises and successful Office of Enterprise Assessments limited notice performance test activities, which resulted in no findings. The Comprehensive Enterprise Assessment at Y-12 determined the program is effective with no major programmatic issues and three best practices. Several CNS staff members were recognized for excellence as the Security Manager of the Year and the NNSA Security Team Members of the Year. CNS executed Defense Nuclear Security approved core security funding and scope as planned.

CNS delivered efficient, effective, responsible, and transparent financial management operations and systems. CNS promptly responded to an urgent NNSA request for historical cost data on IT and cybersecurity in support of site separation activities. CNS also promptly responded to two time-sensitive indirect rate variance data calls supporting critical NNSA funding allocation

decisions. CNS identified an effective work-around for an A-123 Management of Entity Risk and Internal Controls Application system scope identification issue, and shared it with the Financial Management Assurance community; and voluntarily contributed to a benchmarking exercise, helping to identify production operations funding solutions, which also supported other M&O contractors.

CNS effectively managed legal risks by obtaining successful results in a number of cases and claims, including dismissal of two whistleblower cases; summary judgment, along with award of attorney fees, in a case arising from a demolition project at Pantex; resolution of several subcontractor claims; and recovery of court costs on behalf of NNSA in a discrimination case. CNS also provided value-added support in a CRADA to support domestic HALEU production and an memorandum of understanding to develop virtual reality hardware for use in the Uranium Processing Facility.

CNS continued to improve IT systems and cybersecurity operations. CNS leveraged IT lifecycle refresh activities to reduce support costs and enhance system availability at both sites while effectively prioritizing and balancing resources across a large IT project portfolio with more than 60 substantial projects. CNS experienced some challenges in meeting all NNSA Program Execution Guidance (PEG) Implementation Factors (IFs). CNS met the vast majority of the IT PEG IFs and a majority of the cybersecurity IFs. CNS continued to execute the Formal Authorization Corrective Action Plan, and identified modifications to account for additional lessons learned through execution of corrective actions. Overall, CNS reduced IT and cybersecurity risks improving collaboration capabilities, lifecycle management, and cross-site file transfer. Cybersecurity Formal Authorization and technical activities within the CNS managed and operated networks remain areas requiring diligence.

CNS demonstrated the ability to manage an effective Emergency Preparedness Program. CNS conducted successful exercises demonstrating the ability to respond to emergency situations while utilizing substitute locations. CNS implemented the new Alternate Emergency Operations Center in downtown Amarillo and incorporated mental health aspects in exercises. CNS' Emergency Response Organization took corrective actions and issued timely and appropriate protective actions for employees due to a hazardous material fire at Y-12. It is imperative that CNS management follow through on commitments to address weaknesses in Emergency Notification System audibility and execution of protective actions.

CNS delivered efficient, effective, and compliant business operations. CNS continued to pursue opportunities to increase its small business and socioeconomic spend through outreach activities, met 5 of the 6 category percentage goals for the year, and achieved 8.3 percent of the 10 percent Women-Owned Small Business goal. CNS embraced Enhanced Mission Delivery Initiative (EMDI) 9, demonstrating acceptability of procurement packages within the 5-day review cycle, increasing award timeliness and accelerating project performance. CNS continued effectively managing an ever-increasing number of real estate activities. CNS received the Green Fleet Award for demonstrating outstanding leadership in helping the Department achieve the Administration's goal of transitioning to 100 percent zero emission vehicles by 2035. Supply Chain Management maintained an on-time shipping performance at 98 percent and improved daily time cycle reducing the lead time by 33 percent. CNS effectively negotiated the

International Guards Union of America bargaining agreement until 2028 and reduced the Benefit Cost Measurement to 101.2 percent within the 105 percent threshold.

CNS did not submit the Electrorefiner Project CD-4 documentation by the end of FY 2023 third quarter. Missing and broken parts discovered during energized component testing and the need to add a chilled water system to the scope resulted in substantial cost increase and schedule extension and the need to process a second baseline change.

CNS experienced issues with the West End Protected Area Reduction (WEPAR) project that resulted in substantial cost increases and schedule delays, requiring a new project performance baseline. CNS achieved progress later in the performance period, such as improving coordination with National Technology and Engineering Solutions of Sandia, LLC and negotiating/awarding a key subcontract to allow construction to proceed. Interfacing/enabling projects have achieved Beneficial Occupancy, are construction complete, or are scheduled to complete before impacting the WEPAR critical path.

Earlier this year, CNS clarified reporting between Enterprise Plan Improving IT and Cybersecurity (EPIIC) corrective actions, and CNS self-identified enduring initiatives to improve IT and cybersecurity. CNS completed the EPIIC corrective actions by fiscal year end, reducing risk and meeting a multi-year commitment to NNSA.

Goal 5: Mission Leadership
CNS Amount of At-Risk Fee Allocation: \$16,904,718

Under this goal, CNS earned a rating of Very Good, and 90 percent of the award fee allocated to this goal. Accomplishments greatly outweighed issues and no significant issues in performance existed. CNS exceeded many of the Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS participated in Integrated Planning Group meetings for the development of the Stockpile Stewardship and Management Plan and the NNSA Labs, Plants, and Sites Strategic Planning Summit. CNS successfully focused on supporting the OST and Weapon Evaluation Test Laboratory at Pantex with routine monitoring by the site operations manager and operations support manager.

The CNS event investigation, following an April 14, 2023, Y-12 NCS occurrence, was highly thorough and appropriately self-critical. It echoed pre-existing NNSA concerns regarding the CAS' effectiveness in identifying and arresting negative performance trends before they result in a significant event. In response, CNS issued the CAS Improvement Plan, which established a new model of oversight and assessments focused primarily on proactive, field-based performance evaluations. The plan's actions are promising, and CNS leadership must provide strong, continued support to ensure its potential is realized.

CNS actions to address NNSA concerns with event management performance have succeeded in stabilizing overall performance. Issue closure is awaiting implementation of a set of event

management performance measures to validate continued satisfactory performance in the first quarter of FY 2024. CNS actions to address an unplanned power outage at Pantex and return to normal plant operations within 24 hours was notable in its systematic and measured approach.

CNS successfully hosted the Production Integration Summit and participated in associated Production Integration Collaboration Working Group meetings. CNS provided key technical support for EMDI efforts including implementation of non-traditional acquisition strategies. CNS actively participated in numerous complex-wide activities including the Pilot Prioritization Methodology project, Integrated Infrastructure Planning initiative, the Line-Item Programming Summit, and the Defense Programs Risk Management Working Group. CNS also actively collaborated with other NSE sites for improved mission delivery (e.g., partnering with the Los Alamos National Laboratory and Lawrence Livermore National Laboratory on Depleted Uranium/Binary technology development and insertion and multi-site engagement on special materials). CNS leadership at Y-12 successfully partnered with design agencies to resolve challenges impacting life extension program and other stockpile modernization milestones. The CNS Pantex leadership exhibited professional excellence by effectively resolving challenges at Pantex to ensure all weapon deliverables were met.

CNS leadership continued its focus on Y-12 Analytical Chemistry Organization, fully implementing the improvement plan to meet throughput requirements. CNS supported NNSA in the establishment of a risk review process for the Secondary Stage Modernization Programs. CNS completed 206 Value Stream Element Teams (VSET) and non-VSET Continuous Improvement projects. CNS also developed a comprehensive Project Performance Improvement Plan. CNS leadership is working to unlock latent capacity through direct engagement on safety and security events and motor vehicle incidents in an effort to reduce the number of events.

CNS continues to devote substantial resources to enhancing formality and rigor of operations, yet several serious safety events, most notably the April 14, 2023, NCS occurrence at Y-12, revealed that floor-level performance did not achieve the desired level of consistency. In response to these events and NNSA feedback, CNS leadership identified disciplined operations as one of three high priority issue areas and initiated a series of actions focused on driving all levels of management to understand, demonstrate, and reinforce a high standard of conduct of operations. In parallel, following a series of events and NNSA-identified issues, CNS issued a separate plan to improve activity-level work planning and control performance for Operations Support activities. Both plans target areas aligned with NNSA's concerns but require leadership attention to ensure they continue to mature into a cohesive strategy that accounts for other high priority efforts, such as the CAS Improvement Plan.

CNS took appropriately conservative action to suspend all activities in Y-12's Technology Development facility following the June 2023 fire event. Prior to resuming any activity, CNS leadership required a noteworthy series of actions that effectively re-baselined each work area to a higher standard of safety and formality of operations.

CNS continues to address Y-12 analytical chemistry risks by executing the strategy outlined in the Roadmap for Improving the Analytical Chemistry Capability. CNS must continue to adapt the roadmap's strategies and attendant resource allocations to ensure latent conduct of

operations, configuration management, and industrial hygiene risks are identified and resolved in a timely manner.

CNS executed 110 percent of its annual hiring target while emphasizing key labor categories that are critical to ensuring mission deliverables to DoD are met. CNS continued efforts to attract and retain workforce, including educational outreach activities; internships, career fairs, and enhanced tracking of monthly hiring targets; a non-base building lump-sum payout to most non-bargaining employees as part of the FY 2023 Compensation Increase Plan; added the Ironworkers in the craft incentive program; and continued evaluation of market surveys to confirm compensation was comparable to the external market. CNS parent partners actively engaged to staff Key Personnel positions and enhance the executive leadership team. Parent partners improved communication with NNSA leadership.

Goal 6: Site Separation

CNS Amount of At-Risk Fee Allocation: \$22,539,624

Under this goal, CNS earned a rating of Excellent, and 91 percent of the award fee allocated to this goal. During this period, the accomplishments significantly outweighed issues and no significant issues in performance existed. CNS exceeded almost all of the Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

CNS supported activities necessary to prepare Pantex and Y-12 to be managed and operated independently under separate contracts by refining separation planning approaches and developing and executing detailed plans for key workstreams/functional areas. CNS provided numerous briefings to NNSA Senior Leadership to ensure full transparency regarding site separation activities, challenges, risks, and accomplishments. CNS fully supported NNSA's objective to transition to 2 separate M&O contracts by early FY 2024 by submitting all contractual deliverables on time or ahead of schedule. CNS identified a need, in May 2023, to develop a strategy to support the NNSA's procurement timeline for Pantex and developed and briefed NNSA on Bridging Strategy Options, submitting the strategy to NNSA on August 31, 2023. CNS gained NNSA's approval of the Bridging Strategy, which outlines CNS' approach to managing the period between October 1, 2024, to February 18, 2025, to ensure the contract deliverable of October 1, 2024, could be met.

CNS routinely met with the NNSA Production Office (NPO) to ensure timely sharing of information and met bi-weekly with the CNS Steering Committee to gain input for key decisions. During this period, NPO observed Governance Board Meetings where the CNS site separation strategy was affirmed and monitored. CNS conducted all planning activities and began execution of the SSIP without any impact to day to day operations at either site.

CNS submitted and supported all site separation deliverables predefined by the contract on or ahead of schedule. CNS held a number of employee Town Hall meetings to ensure strong communications regarding site separation and developed a web presence for employees to access separation-related information. CNS partnered with NNSA to hold stakeholder briefings as well as a listening session specific to the development of the Bridging Strategy.

CNS submitted all SSIPs on time or ahead of schedule including a risk management plan with a list of items requiring special attention, cost estimates for separation and autonomous operations, a specific plan to separate information technology and cybersecurity activities, and an updated paper on key elements of the merger to retain in the site separation. CNS is tracking approximately 3,700 actions and established a SharePoint site to enhance communications and provide transparency to NNSA. As of the end of FY 2023, CNS had no overdue actions and made strong progress on staffing with metrics showing CNS having onboarded 68 of 57 planned hires.

CNS Key Personnel, as confirmed on January 1, 2023, remain in place. The SSIP was updated to indicate CNS' commitment to hold three governance board meetings annually and others as needed. CNS continues to ensure resources to support site separation activities are available, engaged and making strong progress to achieve site separation goals.

The development of Pantex-specific unclassified IT capabilities is a critical component of the CNS SSIP. Using feedback from a variety of sources (e.g., the Institute for Defense Analysis), CNS developed a multi-phased approach for implementing separate site unclassified IT capabilities first by achieving a Separation Ready state (Step 1) and then achieving full Autonomous Operations (Step 2). CNS further developed an additional SSIP phase (Step 0). With this refinement, CNS committed to providing core electronic human resources, finance, and procurement capabilities to support award of the Pantex M&O contract on October 1, 2024. CNS managed SSIP IT/cybersecurity activities via a Level-4 project schedule and achieved a number of key tasks ahead of schedule in FY 2023, including upgrading power capabilities in the Pantex data center and procuring and installing the additional IT hardware necessary for separation within the Pantex data center. Through direct hires or subcontracting, CNS filled almost all identified IT/cybersecurity positions identified as being needed in FY 2023 (i.e., all but three) and achieved a number of hires necessary for the beginning of FY 2024. There were no impacts to the schedule as subcontractors were assigned the scope intended for the new hire positions. CNS identified the IT/cybersecurity transition as one of its highest SSIP risks.

APPENDIX A: Acronyms and Definitions

Acronym	Definition
ACC	Analytical Chemistry Capability
ACO	Analytical Chemistry Organization
AMERICA	A-123 Management of Entity Risk and Internal Controls Application
CAAS	Criticality Accident Alarm System
CAP	Corrective Action Plan
CAS	Contractor Assurance System
CAUS	Counter Unmanned Aerial System
CBI	Capability Based Investments
CD	Critical Decision
CEAC	Comprehensive Estimate at Completion
CLIN	Contract Line Item Number
CNS	Consolidated Nuclear Security, LLC
CRADA	Cooperative Research and Development Agreement
CSA	Canned Subassembly
DBOT	Downblend Offering for Tritium
DisALT	Disassembly for Alteration
DisLEP	Disassembly Life Extension Program
DMM	Direct Material Manufacturing
DNFSB	Defense Nuclear Facilities Safety Board
DOD	Department of Defense
DU	Depleted Uranium
DUM	Depleted Uranium Modernization
EBCHM	Electron Beam Cold Hearth Melt
EMDI	Enhanced Mission Delivery Initiative
EPIIC	Enterprise Plan Improving IT and Cybersecurity
ESAAB-E	Energy Systems Acquisition Advisory Board-Equivalent
FAR	Federal Acquisition Regulation
FOB	Fiber Optic Backbone
FPU	First Production Unit
GMM	General Manufacturing Modernization
HALEU	High Assay Low Enriched Uranium
HATT	Hazard Analysis Task Team

HE&E	High Explosives and Energetics
HESE	High Explosive Science and Engineering
HEU	Highly Enriched Uranium
HFIR	High Flux Isotope Reactor
HPFL	High Pressure Fire Loop
ICE	Independent Cost Estimate
IFs	Implementation Factors
IGUA	International Guards Union of America
IT	Information Technology
JHA	Job Hazard Analysis
JTA	Joint Test Assembly
LEP	Life Extension Program
LEU	Low Enriched Uranium
LTS	Long Term Stewardship
M&O	Management and Operating
MCSU	Mission Critical Security Upgrades
Mo-99	Molybdenum-99
MOU	Memorandum of Understanding
MUF	Mobile Uranium Facility
NCS	Nuclear Criticality Safety
NCV	Nuclear Compliance Verification
NIST	National Institute of Standards and Technology
NNSA	National Nuclear Security Administration
NPO	NNSA Production Office
NR	Naval Reactors
NTESS	National Technology and Engineering Solutions of Sandia, LLC
OST	Office of Secure Transportation
OSTI	Office of Scientific and Technical Information
PCD	Program Control Document
PDRD	Plant Directed Research and Development
PEG	Program Execution Guidance
PEMP	Performance Evaluation and Measurement Plan
PER	Performance Evaluation Report
PICWG	Production Integration Collaboration Working Group
PISA	Potential Inadequacy of the Documented Safety Analysis

PMVTF	Pantex Monitoring and Verification Test Facility
PPI	Process Prove-in
PRT	Product Realization Team
RAP	Radiological Assistance Program
REST	Retrofit Evaluation System Test
SA	Studies and Assessments
SCM	Supply Chain Management
SIRP	Security Infrastructure Revitalization Program
SM	Special Materials
SPP	Strategic Partnership Projects
SSIP	Site Separation Implementation Plan
SWHISS	Surface Water Hydrologic Information Support System
T&E	Test and Evaluation
TBE	Teledyne-Brown Engineering
TDF	Test and Demonstration Facility
TOPIC	Tools and Opportunities for Process Improvement through Communication
TPBAR	Tritium Producing Burnable Absorber Rods
TPC	Total Project Cost
UPF	Uranium Processing Facility
U-Mo	Uranium–Molybdenum
UR	Unsatisfactory Report
USQ	Unreviewed Safety Question
VAR	Vacuum Arc Remelt
VSET	Value Stream Element Teams
WEPAR	West End Protected Area Reduction
WETL	Weapon Evaluation Test Laboratory
WM/WRM	Weapons Material/Weapons Related Material
WQA	Weapons Quality Assurance
WOSB	Women-Owned Small Business
WSMR	White Sands Missile Range