National Nuclear Security Administration

Consolidated Nuclear Security, LLC

Performance Evaluation Report (PER)

NNSA Production Office

Evaluation Period:
October 1, 2021 –
September 30, 2022

December 15, 2022

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Department of Energy review required before public release.

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Executive Summary

This Performance Evaluation Report (PER) provides the National Nuclear Security Administration (NNSA) assessment of the performing entity, Consolidated Nuclear Security, LLC (CNS), performance of the contract requirements for the period of October 1, 2021-September 30, 2022, 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 information obtained from NNSA Program and Functional Offices, both at Headquarters and in the field, and from the Contractor Assurance System.

The Pantex and Y-12 workforce delivered the nuclear deterrent for our nation and allies and demonstrated a strong ability to deliver while working collaboratively across the Nuclear Security Enterprise (NSE) to solve key challenges. In a time of unprecedented workload at both sites with five different nuclear weapon modernization programs in various production/planning stages, compounded by managing multiple, complex material modernization and infrastructure projects, the Pantex and Y-12 team achieved deliveries to the Department of Defense and achieved many NNSA nuclear security deliverables while sustaining a safe and secure work environment.

Notable accomplishments include exceeding the baselines for the B61-12 Life Extension Program (LEP) and Canned Subassemblies (CSA) Dismantlements and meeting the baselines for B61-12 CSAs, B61 Disassembly LEP, CSA Dismantlement, and the Y-12 Base Surveillance deliverables. CNS delivered the W88 Alteration (Alt) 370 Initial Operational Capability on time to the U.S. Navy and met all shipments as scheduled. Pantex worked tirelessly through a Pantex Production Optimization (PPO) effort and a successful Issues Resolution Group (IRG) to address planning issues impacting resources, facilities, and tooling required to support the W88 Alt 370. Pantex and Y-12 was not successful in meeting the NNSA production requirements for this program and did not fully recover to the re-planned IRG schedule but demonstrated strong fortitude in all areas and produced an impressive number of units each month of the last quarter, reducing the delta to the baseline. Secondary Stage Modernization programs performed well overall. Depleted Uranium Modernization (DUM) advanced new technologies with the Electron Beam Cold Hearth Melter progressing ahead of schedule and Direct Cast continuing to advance on pace. Pantex and Y-12 restarted and completed the first Lithium metal production campaign since 2013 and achieved process qualification. All Lithium Modernization milestones were successfully completed. Pantex and Y-12 performed well with respect to Special Materials, made significant

progress with technology maturation, and executed activities to complete Fulmer work to support mission needs.

Pantex and Y-12 executed well as a key stakeholder in support of Material Management and Minimization's international effort to convert the Kyoto University Critical Assembly and to remove all remaining Kyoto University Critical Assembly Highly Enriched Uranium to the United States. Pantex and Y-12 provided operational support to the Nuclear Emergency Support Team's response to Russia's War on Ukraine for radiological monitoring. Pantex and Y-12 shipped material subsamples and submitted nominations in support of the Nuclear Forensics National Nuclear Materials Archive program and met all key performance indicators and supported the execution of the first, full-scale international deployment of the Mobile Uranium Facility. The High Flux Isotope Reactor project milestones and all deliverables and shipments to Naval Reactors were met. Pantex and Y-12 shipped uranium-molybdenum (U-Mo) material yet it did not complete the target number of U-Mo alloy castings and shipments of ingots in support of the U.S. High Performance Research Reactor project.

Safety metrics continue to indicate Pantex's and Y-12's commitment to world class safety. NNSA saw positive performance with Pantex's and Y-12's External Dosimetry Program achieving Department of Energy (DOE) accreditation and reducing internal doses at Y-12 by 19 percent, noteworthy Pantex Safety Basis improvement efforts, significant accomplishments with the Nuclear Criticality Safety (NCS) program completing the NCS Roadmap, and strong performance in protecting Special Nuclear Material and classified matter. Performance continued to be mixed across infrastructure and line item projects. Challenges associated with project work must be considered in light of the sheer volume and complexity of the Pantex and Y-12 project portfolios, which includes 221 projects with expenditures exceeding $540 million (M). Pantex and Y-12 exceeded expectations specific to cost for the Lithium Processing Facility (LPF) and performed well with the High Explosives Synthesis, Formulation, and Production project meeting CD-3A deliverables. Construction of the Emergency Operations Center and Fire Station met expectations. The West End Protected Area Reduction (WEPAR), Bottom Loading Furnace, and High Explosives Science and Engineering projects were either behind schedule or over budget.

Pantex and Y-12 continued to make substantive improvements in Cyber Security and Information Technology (IT) performance, significantly improving the risk posture and demonstrating self-governance across all aspects of the program. Pantex and Y-12 continued to make improvements in disciplined operations through implementation of the FY 2022 Disciplined Operations Council Continuous Improvement Plan. During a time of turnover, Pantex and Y-12 acting leadership performed strongly. Leadership challenges were noted and evidenced by the following: a program planning issue and the need for NNSA to establish an IRG to guide improved performance, lack of management attention to degradation of Analytical Chemistry infrastructure, issues with responsiveness to Office of Security Transportation vehicle maintenance activities, and broader planning challenges, resulting in Pantex and Y-12 falling behind schedule for other deliverables. Continuing corporate parent support for providing sufficient leaders and key resources to improve project execution and manage the stockpile modernization programs is required. Specific observations for each Goal are provided in the following pages.

CNS earned an overall rating of Very Good during this performance period with Excellent ratings for Goals 3 and 4 and Very Good ratings for Goals 1, 2, 5, and 6.

Goal 1: Mission Execution: Nuclear Weapons-- Successfully execute the cost, scope, and schedule of the Nuclear Stockpile mission work for Defense Programs work in a safe and secure manner in accordance with DOE/NNSA priorities, Work Authorizations, and Execution/Implementation Plans.

Consolidated Nuclear Security, LLC Amount of At-Risk Fee Allocation: $24,919,125

Under this goal, CNS earned a rating of Very Good and 87 percent of the award fee allocated to this goal. Accomplishments greatly outweigh issues, and no significant issues in performance exist. 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.

All deliverables to the Department of Defense were met. CNS completed 83 percent of planned FY 2022 weapon deliverables. The performance issues at Pantex were primarily driven by planning failures associated with personnel, tooling, and facilities.

Specific Performance through September 30, 2022

System	Total FY 2022
B61-12 Canned Subassembly	100%
Base Surveillance - Pantex	96%
Base Surveillance - Y-12	100%
W87 Assembly (Repair, Rebuilds)	92%
W76 Rebuilds	95%
W88 Disassembly Alterations	55%
W88 Alteration 370	79%
Canned Subassembly Dismantlement	102%
B61 Disassembly Life Extension Program	100%
B61-12 Life Extension Program	105%
Warhead Dismantlement	46%

CNS accomplished multiple improvements to support current and future stockpile work. CNS completed the 35-Account Materials Pilot at Pantex to minimize supply chain disruptions and delays. Additionally, CNS established a new provisioning process that improves its ability to deliver materials to the production line. At Y-12, CNS completed executive prioritization and onsite Nuclear Enterprise Assurance (NEA) analysis of a mission-critical operational technology. CNS also took on additional scope to begin the process of removing items from (b)(7)(E) to further reduce Material at Risk.

CNS excelled at material supply/demand and process modeling for multiple strategic material streams, resulting in high fidelity data for program and project planning. CNS exceeded expectations associated with Building 9206 equipment deactivations and Building 9212 isolations by completing FY 2022 scope and beginning FY 2023 scope. CNS is rated Green on seven and Red on four Level 2 milestones in Uranium Modernization. The Level 2 milestone associated with production of purified metal, UO_3, and UF_4 was not met, and only 20 percent of the metal goal was achieved due to failures, for which CNS had limited ability to control. The three

additional Red milestones are addressed in KO 5.5. CNS exceeded goals for consolidation castings, briquette process, and inventory reduction of organic bottles, filters, slag and liners, and graphite.

CNS made significant progress in technology maturation by producing 11 metal buttons using the Development Electrorefiner (completing the Equipment Verification Plan and achieving Technology Readiness Level [TRL] 7), using the new Development uniaxial hot press to produce seven simple and four complex geometry components in support of reaching TRL 6, and completing all projected casts using the development microwave for Uranium Processing Facility risk reduction. The DUM program completed 100 percent of its Level 2 milestones and all but one of its Level 3 milestones. DUM continues to manage feedstock supply and create modernization plans for buildings 9201-5 N/W and 9215, aggressively pursue modernization of the Analytical Chemistry infrastructure, and installation of new rolling mill cranes ahead of schedule. DUM advanced new technologies with the Electron Beam Cold Hearth Melter progressing ahead of schedule and Direct Cast continuing to advance on pace.

CNS did not restart the production Vacuum Arc Remelt furnace due to a series of discovered equipment conditions after being out of service for 15+ years. Vendor performance, shipping issues, and COVID-19-related delays also contributed to this performance milestone being missed. CNS restarted and completed the first Lithium metal production campaign since 2013 and achieved process qualification. CNS completed annual processing requirements through Small Scale Wet Chemistry ahead of schedule. All Lithium Modernization milestones were successfully completed.

For Special Materials, both Level 2 milestones are rated Green. CNS completed Building 9225-03 demolition and cleanout ahead of schedule and completed additional scope. CNS developed a new acquisition strategy for the Special Materials capability to meet challenges associated with NNSA's change in direction regarding project segregation. CNS completed planning for the Special Material Facility Upgrade and initiated planning for the Special Material Facility equipment project. CNS pressed a full scale test part on the uniaxial hot press on the first attempt, pressed 13 additional parts for optimization, achieved Manufacturing Readiness Level 3 and TRL 5 and 6, and completed machining trials for both materials. Planning is underway for conducting production-quality work at off-site facilities. CNS's integration with multiple Design Agencies and Production Agencies was exemplary.

CNS was successful in its nuclear expertise, knowledge, and surety roles and supported multiple related programs. The Stockpile Responsiveness Program, Advanced Certification and Qualification, Aging and Lifetimes, Advanced Manufacturing Development, and Weapons Technology Development programs all yielded advancements in technology or improved collaboration with stakeholders, including DOE national laboratories. CNS co-led the creation of the NEA Technical Qualifications program and hosted NEA meetings at Y-12.

CSA Dismantlement execution at Y-12 exceeded the baseline. CNS was successful with its Surveillance deliverables in most areas, completing some work early. CNS completed 46 percent of planned FY 2022 Warhead Dismantlement deliverables at Pantex. W76 and W84 dismantlements experienced significant delays. The challenges associated with this work were

fully communicated to NNSA throughout the year.

For the B61-12 LEP, CNS achieved the system Alt 374 First Production Unit, built quantities to meet Requirements Planning Document requirements, and met U.S. Air Force shipments. CNS overcame issues to complete 100 percent of B61-12 CSA units at Y-12. CNS partnered with the Design Agency as part of a joint Tiger Team to identify solutions to manufacture a component at Pantex.

For the W88 Alt 370, CNS delivered the Initial Operational Capability on time to the U.S. Navy. However, CNS did not meet production requirements. CNS originally forecasted to recover to program control document requirements in FY 2024, and an NNSA IRG was initiated. The IRG performed well and improved the forecast to show recovery to program control document requirements in FY 2023, and the IRG was formally closed. Despite experiencing additional issues, including facility delays and outages, lower-than-planned staffing, and other technical issues, CNS nearly met the IRG forecasted quantities (96 percent). Overall, CNS accomplished 55 percent of required disassemblies and 79 percent of required assemblies.

CNS actively supported W76-1 Joint Test Assembly 3, Alt 939 and W76/Mk4B development activities but was not successful in completing disassembly and inspection, Joint Test Assembly, and case reacceptance work. Rebuild performance (95percent) improved over the last fiscal year. It is imperative that CNS continue to apply management attention here to fulfil NNSA's commitments and reduce risk to U.S. Navy deliveries. Preparation for the W80-4 LEP is proceeding well with an exception for a single Process Prove-In at Pantex. The system Baseline Design Reviews were completed, and CNS provided needed Production Agency input to the Design Agencies through the relevant Product Realization Teams. CNS continued to execute activities to complete Fulmer in support of mission needs. CNS was fully successful in supporting both the future W87-1 Modification Program and W93 LEP, including multiple planning deliverables for the federal program offices and Design Agencies.

Goal 2: Mission Execution: Global Nuclear Security-- Successfully execute the cost, scope, and schedule of the authorized global nuclear security mission work in a safe and secure manner to include the Defense Nuclear Nonproliferation, Nuclear Counterterrorism and Counter Proliferation, and Incident Response missions in accordance with DOE/NNSA priorities, Work Authorizations, and Execution/Implementation Plans.

Consolidated Nuclear Security, LLC Amount of At-Risk Fee Allocation: $10,679,625

Under this goal, CNS earned a rating of Very Good and 90 percent of the award fee allocated to this goal. Accomplishments greatly outweigh issues, and no significant issues in performance exist. 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 provided expertise for Response, Performance Evaluation, Insider Threat Mitigation, and Regulations and Inspections for developing and providing numerous training courses and workshops with global partners. CNS provided technical expertise in the development and use of augmented and virtual reality tools into training. CNS strengthened U.S. non-proliferation and

nuclear security capabilities by supporting signature collection against high explosive sanitization shots and completing a draft design of a neutron shield for the Nuclear Detection and Sensor Testing Center facility at Y-12. CNS also stewarded nonproliferation competencies by executing a Concept Development for the Uranium Production and Weaponization Testbed.

CNS executed well as a key stakeholder in support of Material Management and Minimization's international effort to convert the Kyoto University Critical Assembly and to remove all remaining Kyoto University Critical Assembly Highly Enriched Uranium to the United States. CNS exceeded the requirements for preparing High-Assay Low Enriched Uranium from metal for Domestic and Foreign Research Reactors. CNS completed a multiyear effort for the Material Disposition-2 Packaging Line, which was a critical activity in support of surplus material shipments. CNS provided technical and contractual support for the Uranium Lease and Takeback Program. CNS completed several surplus consolidation castings in support of the Material Disposition Program. CNS did not meet all requirements for the Nuclear Non-Proliferation scope of the Down-Blend Offering for Tritium (DBOT) program due to planning, resources, and prioritization of Defense Programs DBOT in the CNS Analytical Chemistry Organization.

CNS did not complete the target number of U-Mo alloy castings and shipments of ingots in support for the U.S. High Performance Research Reactor project due to delays in completion of the Process Qualification Report stemming from Analytical Chemistry Organization's analysis capacity issues. There are no impacts at this time; however, continued delays increase the risk for future impacts. CNS met all key performance indicators and supported the execution of the first full-scale international deployment of the Mobile Uranium Facility as part of the Exercise Dark Sleeper. CNS supported the Nuclear Compliance Verification Program by providing scenario-based training and evaluation to the program's deployment teams. CNS provided significant contributions to several projects within the Office of Nuclear Verification Warhead Verification Program. In addition, CNS continued to provide technical contributions to the Department of State-led International Partnership for Nuclear Disarmament Verification.

CNS provided operational support to the Nuclear Emergency Support Team's response to Russia's War on Ukraine for radiological monitoring. Its Radiological Assistance Program also supported training exercises and activities. CNS maintained readiness for personnel, training, and maintenance in support of nuclear forensics operations and participated in related exercises. Additionally, it shipped material subsamples and submitted nominations in support of the Nuclear Forensics National Nuclear Materials Archive program.

Goal 3: DOE and Strategic Partnership Projects Mission Objectives--Successfully execute high-impact work for DOE and Strategic Partnership Projects Mission Objectives safely and securely. Demonstrate the value of the work in addressing the strategic national security needs of the U.S. Government.

Consolidated Nuclear Security, LLC Amount of At-Risk Fee Allocation: $0

Under this goal, CNS earned a rating of Excellent and 95 percent of the award fee allocated to this goal. Accomplishments significantly outweigh issues, and no significant issues in performance exist. 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.

The High Flux Isotope Reactor project milestones were met. The New Brunswick Laboratory Center successfully completed the modeling of a new Type A container for international shipments and delivered drums of Li6OH solution for the Tritium-Producing Burnable Absorber Rods program more than a month ahead of schedule. CNS executed Naval Reactor scope on schedule and within budget.

CNS completed an extensive update of the non-Federal Strategic Partnership Project agreements and executed a Cooperative Research and Development Agreement (CRADA) with Northrop Grumman Systems Corporation, the first CRADA since 2016. CNS completed major deliverables for the U.S. Army White Sands Missile Range Fast Burst Reactor Upgrade project and implemented a re-baselined project schedule for FY 2022-2024. CNS continued to provide significant training expertise in chemical, biological, radiological, nuclear, and explosive areas for the U.S. Military.

Goal 4: Mission Execution: Science, Technology, and Engineering (ST&E)-- Successfully advance national security missions and advance the frontiers of ST&E. Effectively manage Site Directed Research and Development (SDRD) and Technology Transfer, etc. in a safe and secure manner in accordance with DOE/NNSA priorities, Work Authorizations, and Execution/Implementation Plans.

Consolidated Nuclear Security, LLC Amount of At-Risk Fee Allocation: $0

Under this goal, CNS earned a rating of Excellent and 95 percent of the award fee allocated to this goal. Accomplishments significantly outweigh issues, and no significant issues in performance exist. 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 utilized $36.5M in funding across 110 projects and strengthened the technical capabilities of Pantex and Y-12 and support the NNSA Strategic Vision. Projects include Advanced Pilot Scale Lithium Purification to demonstrate wet chemistry process flexibility to return off-specification lithium materials to within specification for input into the LPF and High Explosive Milling and Sawing Machining Effects to provide definitive safety studies to support altering DOE safety requirements for high explosive machining limitations. CNS ensured the research was relevant, enabled the national security missions, and benefited NNSA program objectives. CNS continued to maintain projects in strong support and alignment with the High Explosive Operations at Pantex and the Highly Enriched Uranium Storage and Component Manufacturing mission at Y-12.

Research conducted was transformative, innovative, leading edge, high quality, and advanced the frontiers of science and engineering. CNS made significant progress with electron beam additive manufacturing and powder-bed additive manufacturing and maintained a healthy and vibrant research environment that enhanced technical workforce competencies and research capabilities. CNS continued to expand partnerships, university outreach, and technology transfer activities. CNS executed government-use licenses for the Electronic Derivative Classifier/Reviewing Official Software System and the Modulated Tool-Path Chip-Breaking System. CNS reported and published affiliated scholarly publications, supporting public access to NNSA-funded research.

Goal 5: Mission Enablement-- Effectively and efficiently manage the safe and secure operations of the Pantex and Y-12 in accordance with cost, scope, and schedule while maintaining an NNSA enterprise-wide focus; demonstrating accountability for mission performance and management controls; successfully executing cyber, technical, informational, and physical security requirements, and assure mission commitments are met with high-quality products and services while partnering to improve the site infrastructure. Performance will be measured by the contractor's assurance system, NNSA metrics, cost control, business and financial operations, project baselines, implementation plans, assessment and audit results, etc., with a focus on mission enablement.

Consolidated Nuclear Security, LLC Amount of At-Risk Fee Allocation: $14,239,500

Under this goal, CNS earned a rating of Very Good and 83 percent of the award fee allocated to this goal. Accomplishments greatly outweigh issues, and no significant issues in performance exist. 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 continue to indicate CNS commitment to world class safety. CNS was a major contributor to NSE program improvements and continues to make progress on quality program consolidation and Electronic Product Acceptance. Y-12's fire systems maintenance backlog improved. Actions for Subcontractor Motor Carrier and Environmental Compliance Emerging Items of Interest resulted in issue closure and continued improved performance, respectively. The CNS External Dosimetry Program achieved DOE accreditation, and Y-12 reduced internal doses by 19 percent. CNS successfully completed corrective actions and achieved authorization to begin shipping weapons materials/weapons related materials to Nevada National Security Site. Several Quality program-related problems are being addressed. CNS has not effectively reduced the fire system maintenance backlog at Pantex. Continued management attention is necessary to manage the waste backlog at Y-12 as it continues to increase and impact storage facilities.

The Pantex Safety Basis improvement efforts (Vision Plan and Defense Nuclear Facilities Safety Board 2019-1 Implementation Plan) made progress throughout the year. Both efforts are continuing to show results more in line with DOE-STD-3009-2014 and streamlining documents, making them easier to manage. CNS drafted a new Alternate Methodology and continues to support the Pantex Safety Basis Redesign teams. CNS made reductions in the Pantex Unreviewed Safety Question backlog and was responsive to production needs and addressed safety-related issues in support of weapons programs. CNS implemented new DT-23 foam inserts and also resolved DT-23 container shortage by pursuing the use of other containers. CNS completed the NCS Roadmap, a significant accomplishment, and is actively working initiatives to address staffing concerns. CNS continues to buy down risk by pursuing the disposition of legacy items and Out of Service Equipment. Nuclear Explosive Safety was effective at managing issues. CNS successfully worked with the vendor to identify specific solutions for the Flame Detection System faults that have been experienced over the last several years.

CNS had significant line item and small projects scope across both sites, having managed more than 200 active projects costing $180.8M at Pantex and costing $363.7M at Y-12. This represents an ~27 percent increase over FY 2021 expenditures. CNS exceeded expectations specific to cost

on the LPF by effectively partnering with NNSA and balancing cost and schedule risk through effective acquisition approaches, processes, and communications. CNS general plant project execution accomplishments included completing seven of seven flame detection systems, installing six new sectionalizing switches, and completing the 13.8 kV power distribution. Poor upfront planning, resource planning, design issues, and difficulty coordinating between projects caused significant impacts to schedule and cost primarily within the Recapitalization and Security programs. Cost and schedule impacts were seen on the Lightning Protection System, Blast Door Interlock Programmable Logic Controller Replacement, and Flexible Support Facility projects. The High Explosives Science and Engineering project was behind schedule and terminated a subcontractor. CNS instituted some changes in its project planning and execution processes, but there has not been sufficient time for the effectiveness to be evaluated. The WEPAR project, as well as other safeguards and security projects, were behind schedule and over budget. CNS had issues in execution that impacted planning forecast completion dates, requiring re-plan work execution, and did not adequately coordinate between WEPAR and the enabling projects. Emergency Operations Center and Fire Station projects successfully executed work to meet the re-baselined milestones within budget. The High Explosives Synthesis, Formulation, and Production project met CD-3A deliverables and continued to successfully work toward the CD-2/3 milestone on schedule and budget. The Calciner project continued to be behind schedule and over budget due to significant extensions of the level of effort accounts and craft inefficiencies awaiting equipment delivery from off-site vendors (despite significant CNS vendor mitigation efforts). The electrorefining project continued to be behind schedule and over budget primarily due to late equipment delivery from the vendor, delay in installation, and inadequate baseline planning to implement Safety Basis requirements. Direct Chip Melt Bottom Loading Furnace project achieved CD-1 but experienced forecasted cost increases based upon an inadequate estimate for the design effort presented at CD-1 and schedule slippage due to lack of engineering resources.

CNS was instrumental at refining the HE Production Conceptual Area Plan (ConAP), allowing for the evolution of the ConAP as a forum to refine long-term strategic investments and a communication tool for long-term infrastructure risks.

CNS effectively protected Special Nuclear Material and classified matter as demonstrated through oversight results, force-on-force exercises, and successful Office of Enterprise Assessments limited notice performance test activities. Several CNS staff members were recognized for excellence in 2022 (e.g., Security Manager of the Year and NNSA Security Team Members of the Year) contributing to a successful program. CNS executed Defense Nuclear Security-approved core security funding and scope as planned. Continued effective execution of the Defense Nuclear Security program funding remains a high-priority focus area.

CNS maintained plant infrastructure, safely executing major utility outages, and responded well to key equipment failures. Utility systems availability is greater than 99 percent, and CNS effectively eliminated a single point failure affecting Y-12's compressed air supply. CNS remains vigilant in using the Y-12 condition-based maintenance program to identify and resolve assets at high risk of failure. After the southwest circuit outage at Pantex, steam leaks and moisture in air lines revealed inadequate preparation in a few key facilities, which resulted in operational impacts. Overall, Proactive Maintenance completion does not meet standards as the

volume of incoming work orders outpaces current planning capacity. The SAP HANA server platform rollout at Pantex was completed although four months behind schedule. CNS actions to resolve NNSA-identified concerns related to maintenance work package clarity have yet to yield benefits in a timely manner.

CNS responded effectively to NNSA energy efficiency and sustainability tasks. Pantex has been proactive in the areas of wastewater reuse and the use of renewable energy The Y-12 Clean Sweep program dispositioned the largest volume of unneeded materials to date.

CNS delivered efficient, effective, responsible, and transparent financial management operations and systems. CNS successfully implemented the revised change control review process and continued self-monitoring of cost charging and transfers aimed at timeliness and adherence to disclosed charging practices. CNS responded to significant data requests supporting an FY 2016-2018 Annual Statements of Costs Incurred and Claimed audit. CNS demonstrated enterprise-wide partnering in activities, such as presenting its automated Work Authorization distribution/approval system and its FY 2021 Incurred Cost Submission approach and shared its Enterprise Risk Management best business practices.

CNS Legal provided crucial revisions to the General Terms and Conditions for all subcontract types, "matrix clauses," and data rights clauses for Strategic Partnership Projects contracts. Legal also provided timely, tailored advice for COVID-19-related issues and contract modification matters; successfully worked to close CNS-held leases of Texas Tech-owned property; negotiated trademark license agreements for both sites; restated the Y-12 pension plan; and amended the three 401(k) plans. Legal also resolved 79 workers' compensation claims, a complex construction dispute at the Central Training Facility; and resolved an equitable adjustment claim for glovebox system at Y-12.

CNS IT operations continued to improve throughout the fiscal year. CNS met all of the NNSA IT Program Execution Guidance implementation factors and exceeded expectations by continuing maturity of the local roadmap supporting an NNSA Cerberus Project. Y-12 application migrations to an updated data center and Pantex data center power upgrades should minimize service outages. CNS also continued to improve management and execution of the Cybersecurity Program, demonstrating self-governance across all aspects of the Program. CNS completed the vast majority of Enterprise Plan for Improving IT and Cybersecurity improvements on or ahead of schedule. The most significant cybersecurity risk reduction/improvement was related to re-establishing monitoring and incident response capabilities through enhanced Enterprise Demilitarized Zone architecture. It is also noted that CNS executed its budget well, with only an 8 percent carryover, which is within the NNSA expectation of no more than 13 percent. CNS met many, and in one case exceeded expectations, of the NNSA Cybersecurity Program Execution Guidance implementation factors but also required a delay in meeting some items and did not meet expectation for a few. CNS resolved a number of long-standing cybersecurity Corrective Action Plans and continued to make progress in the Formal Authorization Corrective Action Plan.

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 alternate locations. CNS implemented the new Pantex Alternate Emergency Operations

Center in downtown Amarillo.

CNS exceeded its overall small business goal with 53.1 percent of the 51.5 percent goal, meeting five of the six small business categories. The Women-Owned Small Business fell short of the 11.4 percent goal at 9.9 percent. CNS held and/or joined 15 business outreach events. CNS completed more than 60 realty actions, including the undertaking of high-profile properties, such as Googin Technology Development Facility and the Gehm and Vance Family Farms, transferring Pantex Plant property to the Office of Secure Transportation (OST), facilitating decision for Jack Case Center and New Hope Center final option period lease option, and addressing ongoing actions for the Oak Ridge Utility District property transfer. CNS responded quickly with a voluntary correction plan to the Internal Revenue Service regarding suspension of benefit notices prior to closeout of 2021. CNS also continued efforts to address retirement plan errors. The West Texas Building Trades and Pantex Guard Union agreements were successfully negotiated simultaneously.

Goal 6: Mission Leadership-- Successfully demonstrate leadership in supporting the direction of the overall DOE/NNSA mission, cultivating a Performance Excellence Culture that encompasses all aspects of operations and continues to emphasize safety and security, improving the responsiveness of the CNS leadership team to issues and opportunities for continuous improvement internally and across the Enterprise, and parent company involvement/commitment to the overall success of the Pantex and Y-12 and the Enterprise.

Consolidated Nuclear Security, LLC Amount of At-Risk Fee Allocation: $7,119,750

Under this goal, CNS earned a rating of Very Good and 80 percent of the award fee allocated to this goal. Accomplishments greatly outweigh issues, and no significant issues in performance exist. 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.

During this period, significant leadership change was encountered with the loss of two senior leaders, requiring CNS to appoint two acting leaders who demonstrated significant focus and commitment to mission accomplishment. In response to NNSA feedback, CNS took action to assign permanent leadership to Pantex to improve mission performance. Additional CNS leadership attention is required in the projects arena, and, with the large project portfolio and stockpile modernization work scope continued, CNS corporate parent support is needed to provide additional leaders and key resources at both sites.

CNS supports enterprise initiatives and has a strategic vision that aligns with NNSA's Strategic Vision. CNS leadership continues to prioritize depleted uranium (DU) activities at Y-12 and make significant progress in restarting various lapsed DU capabilities. CNS enhanced innovative infrastructure planning initiatives by completing, a first-of-its-kind Conceptual Area Plan and developed options that support unique, non-traditional solutions to acquiring real property. CNS was slow to acknowledge concerns with the production baseline when NNSA raised concerns early in the fiscal year that facility, staffing and tooling resources identified were not sufficient for W88 Alt 370 baseline delivery. After continued communications of concern by NNSA, CNS formed an internal Issue Resolution Team, which later expanded to a formal IRG at NNSA direction. IRG actions included development and implementation of the PPO effort to improve

the hiring process, improve tooling availability, and drive maximum utilization of Pantex facilities. The IRG was closed, and the PPO effort successfully improved CNS's ability to meet production deliverables. Even with significant progress on the PPO and efforts from the IRG, some deliverables were not met. A lack of management attention to degradation of the Y-12 Analytical Chemistry Organization infrastructure, specifically with maintenance and proper prioritization on equipment installation, impacted needed sample throughput this period, resulting in missed baseline deliverables. In addition, issues with responsiveness to OST vehicle maintenance activities impacted OST mission planning when OST was required to dedicate federal agent personnel and affiliated contractor organizations to assist in relocating "maintenance ready" trailers from several states away to Pantex.

CNS's deployment of the Tableau Contractor Assurance System Health dashboard provides critical CAS data on issues management and assessment performance that is transparent to NNSA. CNS issued the annual Top 10 Threats and Opportunities in collaboration with NNSA utilizing their enterprise risk management process. Sandia National Laboratories and LLNL benchmarked the CNS enterprise risk management process to improve their respective processes. CNS completed 105 Value Stream Element Teams improvements across both sites, improving mission work.

CNS continued to work to enhance integration efforts through involvement in NSE initiatives (such as the Production Integration Collaboration Working Group), working collaboratively with the Design Agencies to enhance production capabilities, providing Lean Six Sigma Black Belt expertise to facilitate process improvements, and continued involvement with the Energy Facility Contractors Group chartered with progressive efforts to enhance NSE-wide operations. CNS's Escalation Process was demonstrated at the Operations Support Working Group and was well received. CNS worked collaboratively across the NSE to achieve TRL 6 for a special material. CNS did not communicate the potential magnitude of Calciner Project performance issues, which resulted in urgent program re-planning.

CNS Senior Leadership continued to focus on IT and Cybersecurity performance and reallocated internal funding for architecture improvement. CNS actions to address NNSA concerns with on-the-job training for Y-12 Production personnel were effective overall. Continued attention is needed to achieve full implementation of the new on-the-job training framework in all Y-12 Production areas.

CNS continued to demonstrate a proactive approach to enhancing formality and rigor of operations through the FY 2022 Disciplined Operations Council Continuous Improvement Plan. NNSA recognizes noteworthy progress in several disciplined operations initiatives, such as re-baselining reference use procedure execution expectations and institutionalization of recurring conduct of operations training at Y-12 and enhancing leadership roles and development, which has positively impacted disciplined operations at Pantex. As disciplined operations initiatives mature, it is critical CNS continues to improve its ability to effectively monitor and improve performance. Developing a culture in which the line organization leads performance monitoring efforts will be crucial to sustained success.

CNS continued to implement corrective actions to address long-standing technical and quality

issues from the FY 2021 NNSA 35-Account Reactive assessment and made significant progress this period to reduce associated production downtime.