Department of Energy
National Nuclear Security Administration
Washington DC 20585

November 28, 2016

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR GEOFFREY BEAUSOLEIL
MANAGER
NNSA PRODUCTION OFFICE

FROM: MADELYN R. CREEDON
PRINCIPAL DEPUTY AD[redacted]

SUBJECT: Consolidated Nuclear Security, LLC, DE-NA0001942
Fiscal Year 2016 Award Fee Determination

The National Nuclear Security Administration (NNSA) has completed its assessment of Consolidated Nuclear Security (CNS), LLC's performance of the contract requirements for the period of October 1, 2015 through September 30, 2016, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan. Based on assessments provided in the NNSA Performance Evaluation Report, the award fee amounts are as follows:

	At Risk	Available	Final	Percent
Goal 1: Manage the Nuclear Weapons Mission	35%	$13,976,550	$12,019,833	86%
Goal2: Reduce Global Security Threats Mission	10%	$3,993,300	$3,514,104	88%
Goal 3: DOE Strategic Partnership Project Mission Objectives	5%	$1,996,650	$1,757,052	88%
Goal 4: Science, Technology & Engineering (ST&E)	5%	$1,996,650	$1,896,818	95%
Goal 5: Operations & Infrastructure	35%	$13,976,550	$8,385,930	60%
Goal 6: Leadership	10%	$3,993,300	$3,074,841	77%
Total		$39,993,000	$30,648,578	77%

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

Fixed Fee	$0	$0
SPP (Fixed Fee)	$1,088,674	$1,088,674
Total Fixed Fee	$1,088,674	$1,088,674
Total Summary	**$41,021,674**	**$31,737,252**

National Nuclear Security Administration

Consolidated Nuclear Security, LLC

Performance Evaluation Report (PER)

NNSA Production Office (NPO)

Evaluation Period:
October 1, 2015-
September 30, 2016

November 15, 2016

APPROVED FOR PUBLIC RELEASE

This document has been reviewed and approved for release to the public when authorized by NNSA leadership

Name / Title: Scott A. Hawks, NPO Classification Officer
Date: 11/29/2016

Executive Summary

This Performance Evaluation Report (PER) represents the National Nuclear Security Administration (NNSA) assessment of Consolidated Nuclear Security, LLC's (CNS), performance of its contract requirements for the period of October 1, 2015 – September 30, 2016. Specifically, CNS was evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP). All input provided from NNSA Program and Functional Offices (both at Headquarters and in the field) was considered in this PER.

Performance against the Goals is summarized below and resulted in an overall rating of "very good" for CNS. In summary, CNS improved its overall performance from "Good" to "Very Good". NNSA recognizes CNS's substantial improvement in mission delivery in FY 2016 and the hard work and dedication of the workforce and leadership that made the success possible. Continued improvements in environment, safety, and health and security programs and notable performance in material management and housekeeping were also observed. Attention is required in the area of quality assurance (both weapons and non-weapons) to avoid impacts to mission deliverables and/or safety. It is essential that recapitalization efforts are effectively managed to arrest the decline in the aging infrastructure at both plants. While CNS has recently taken some action to address performance issues in financial management and cyber security, NNSA assessed performance in these areas as marginally satisfactory. It is imperative that cyber security and financial management performance improves in a timely manner.

Specific observations, including Accomplishments and Issues for each Goal (and any associated Objectives and Key Outcomes) are provided in the following pages.

Goal 1: Manage the Nuclear Weapons Mission, 35%

Under this goal, CNS earned a rating of Very Good and 86% of the award fee allocated to this goal. CNS exceeded many of the Objectives and Key Outcomes, and has met the overall cost, schedule, and technical performance requirements under this Goal in the aggregate. No significant issues in performance exist. The performance level is evidenced by at least one significant accomplishment, and/or combination of accomplishments that significantly outweigh very minor issues. CNS's performance under this goal is described below.

Through the end of September 2016, CNS met or exceeded most baseline schedules. CNS successfully restarted operations at Pantex following the resolution of the labor negotiations and instituted a second production shift to support recovery efforts and build margin that allowed for a more judicious use of resources. Despite security clearance delays, CNS made improvements to reduce downtime and widened the throughput bandwidth (supplier quality, procurement, tooling/TQA, metrology, and 35-account). CNS continued to lead an initiative to improve timeliness in receipt and implementation of Weapons Response (WR) into the Pantex Plant Documented Safety Analysis (DSA) and implemented an aggressive communication plan to improve the CNS/NNSA Program Manager interface. This initiative will enhance the transparency of issues impacting production and facilitate contractual and funding actions related to Directed Stockpile Work (DSW) scope, cost, and schedule. The below table summarizes CNS Goal 1 major deliverables:

Table 1: Summary of Significant Nuclear Weapons Mission Work

W76-1 Life Extension Program (LEP)	CNS exceeded its FY16 build and delivery requirement for Canned Subassemblies (101%), and the build and delivery of warheads to the Navy while eliminating previous backlogs. CNS reached 74% (70% planned) Program of Record.
W87 Limited Life Component Exchange (LLCE)	CNS achieved 108% of the scheduled LLCEs.
Base Surveillance	CNS completed 107% of the overall Production Baseline (110% at Pantex and 102% at Y-12) and accomplished the W84 Safety Surveillance Disassembly & Inspection (D&I).
Dismantlement	CNS exceeded the dismantlement schedule by achieving 102% at the Pantex Plant and 107% at Y-12. The component disposition team exceeded requirements by completing 109% of the baseline at the Y-12 Plant.
Uranium Sustainment Program	CNS exceeded expectations in several areas including Area 5 Deinventory, safe bottle processing, and moving Canned Subassemblies (CSAs). CNS exceeded Material Recycle and Recovery (MRR) and Storage Area 5 De-inventory milestones. (See Key Outcome 1.3)

Objective 1.1

Accomplishments

CNS exceeded expectations by restarting operations in a thorough, deliberate, and prioritized manner upon the resolution of Metal Trades Council (MTC) labor negotiations. CNS worked expeditiously to resolve various technical challenges (anomalous units, cracked components, radio-frequency test failures, etc.) with the respective Design Agency (DA) counterparts to minimize down time.

CNS completed quality evaluation requirements tracking system (QERTS) upgrade (version 4.3), installed PDM Link 10.2 on the unclassified development environment, and made progress on Data Warehouse to include Y-12 data. Electronic Product Acceptance modules in Product Characterization System (PCS) on Quality Inspection List (QIL) and Quality Assurance Inspection Procedure (QAIP) were completed. CNS placed Electronic Build Book previews into production along with compiled legacy electronic build histories. CNS Uploaded historical consolidated event data into PCS Quality Archive. CNS started work on the Material Conversion Project. CNS issued a Functional and Operating Requirements (F&OR) document and the System Requirements Document (SRD). CNS upgraded the Enterprise Information Integration (EII) to include automated exchange manifests and integration of container inventory from NSC and container information between Pantex and Y-12.

Issues

CNS paused all War Reserve operations at the Pantex Plant in late April due to 35-account tape testing not following American Society of Testing and Materials (ASTM) standards and due to improper software grading and qualification that resulted in incomplete software Quality Assurance (QA) and Verification and Validation processes. In addition, CNS did not apply the Unreviewed Safety Question (USQ) and Nuclear Explosive Safety processes to the 35-account tape testing. CNS addressed and closed this significant issue.

While completing one FY16 NA-15 Task Agreement at the Meets Expectations level, CNS did not meet overall expectations on two key projects (1.03.01.01 Mechanical & Electronic Fleet Maintenance Project and 03.02.02.01 Agent Operations Central Command (AOCC) Operations & Maintenance Project). Regarding the Mechanical & Electronic Fleet Maintenance Project delays in purchasing parts for mission vehicles due to procurement issues affected vehicle maintenance and caused delays for vehicle availability. CNS did not provide the Federal Automotive Statistical Tool (FAST) data timely and what was furnished was inaccurate. There were also inaccurate weekly lot counts of inventory on numerous occasions for vehicles assigned to AOCC. CNS also did not provide a representative to the annual Federal Requirements Working Group Federal Fleet meeting. During FY16, CNS did not conduct Quality Assurance Program Plan (QAPP) reviews. Finally, CNS turned away mission vehicles from other Commands when seeking top-offs on Diesel Exhaust Fluid (DEF), and NA-15 had to resort to purchases on the road.

CNS met the performance requirements within the Task Agreement for AOCC by doing acceptable work maintaining the grounds and providing general maintenance of the facilities. However, NA-15 representatives currently reside in a Pantex facility that has

experienced drainage issues potentially affecting foundation stability. OST task monitors raised the issue with onsite CNS personnel during the spring of 2016; however, neither organization raised the issue management. In mid-September, OST submitted a white paper about the issue to NPO and CNS. At that time, CNS provided prompt and effective response with final actions planned for early FY17. Unfortunately, this delay resulted in worsening drainage and the foundation issue. In addition to developing a corrective action for the drainage and foundation issues, it is critical that CNS initiates and develops a formal process for communication on issues and concerns that arise at the plant. The process should include points of contact (POCs) for the management and operating (M&O) contractor and the stakeholder POCs within NNSA and reasonable timelines for corrective actions on critical findings. NA-15 is willing to participate in reviewing and commenting on the draft and final process. NA-15 has attempted to get CNS to respond and begin any corrective action on the drainage and foundation. The AOCC Program Analyst recorded and documented all issues discussed along with corresponding photos.

Objective 1.2

Accomplishments

CNS completed more than 100% of the baseline deliverables, specifically completing 110% of the Pantex Surveillance Baseline and 108% of CSA Quality Evaluation surveillance deliverables. While the baseline composition was not fully completed, the overall quantity was exceeded. Additionally, CNS completed the disassembly and inspection of a B83 unit on a best effort basis as requested by NNSA. CNS exceeded the B61 and W80 FY16 planned surveillance activities. CNS did an exceptional job leading the W84 project by managing resources within constraints and outside its control to execute the W84 NESS which resulted in timely start-up and approval for W84 surveillance operations.

CNS exceeded annual targets for sealed insert pit packaging (110%), Confined Large Optical Scintillator Screen and Imaging System (CoLOSSIS) (116%), and weigh and leak surveillances (102%).

CNS exceeded weapon surveillance deliverables, component testing, and Integrated Weapons Evaluation Team (IWET) requirements for most (W78, W76, W76-1, W87, W88, B83, B61) programs. In addition, CNS completed W76-1 Joint Test Assembly (JTA) 1 and JTA 2 builds on schedule to meet the Navy flight test schedule. CNS successfully recovered W78 test bed assembly and D&I operations, and completed JTA builds and shipments on time. CNS responded promptly to an NNSA request for new work scope and budget estimate on the W80-1 weapon system which also benefits the W80-4 LEP. This work quickly progressed to the authorization and development of new tooling in support of the W80-1 initiative.

CNS completed the installation of a second cart in the Non-Destructive Laser Gas Sampling (NDLGS) ahead of schedule. However, CNS has not established a target date to complete qualification and place the new cart into production service. When qualified, the second NDLGS cart should increase capacity by about 40 percent. CNS successfully began production use of the north bank of the Life Certification Ovens and the Backfill and Crimp Station 217. Both of these achievements improve production operations and are essential

steps in the 9204-2 facility safety basis downgrade.

Issues

The scheduled pit surveillances for Laser Gas Sampling System (LGSS), Coordinate Measurement Machine (CMM) and the Tube Evaluation and Test Station (TETS) were not completed per the baseline schedules (or the reduced goals); instead, approximately 83% were completed. In addition, several key project activities were not accomplished. First, CNS did not complete the installation of the CoLOSSIS II equipment. Second, the prototype 2040 SI pallet drop testing for use with Stage Right operations was not completed due to the problem with the welds on the prototype. Based on this discovery, the rework has pushed the delivery of pallets to the week of October 16. There is no adverse impact to pit storage due to this delay. Third, the project plan for the Additional Capacity Project changed multiple times. CNS did not submit the Project Execution Plan (PEP) on time, and the scope for the individual projects is not complete.

While CNS completed facility modifications for CoLOSSIS II, installation of the equipment was not completed, due to vendor issues with the camera. CNS has developed a recovery schedule that does not impact the end date (4Q FY17); however, the project is dependent on the delivery of the equipment from the vendor.

Objective 1.3

Accomplishments

The CNS dismantlement efforts exceeded baseline requirements throughout FY16. Dismantlement for the W76-0 CSA were 105% of baseline, and the B83 CSA dismantlements were 152%. CNS exceeded these baselines through the implementation of several productivity improvements, tooling upgrades, and operator processing improvements. All dismantlement and disposition work was accomplished ahead of schedule, under budget, and with no safety or security issues. CNS completed the W69 Last Dismantled Unit (LDU) on schedule and under budget.

CNS exceeded the Y-12 component disposition baseline for FY16 (107%) ahead of schedule and created valuable storage space. CNS further exceeded disposal goals at Pantex for production stores order (PSO) boxes, high explosives, energetic component disposal, and macro box shipments. The component disposition team displayed outstanding teamwork in achieving this milestone ahead of schedule and meeting 108% of the baseline.

CNS achieved 108% of the year-to-date W87 LLCE baseline. CNS completed the W87 Nuclear Explosive Safety Study (NESS) ahead of schedule, and the review resulted in no new findings (authorization received in March 2016).

CNS recovered the W78 New Tooling Authorization Basis schedule resulting in completion of the Independent Verification Review (IVR) in September that enables use of the tooling in FY17. CNS began W80 ALT 369 CASTLE transition. CNS has been responsive to emerging weapons response changes from the design agencies by taking action to implement ESD hand tools and procedure changes. CNS did not receive a Quality Evaluation Release (QER) for the reacceptance of the 1k valve and CF2402 cable, but

instead renegotiated the schedule with NNSA. The QER delay does not directly delay the W80 ALT 369. CNS completed program deliverables for the W88 ALT 940 Gas Transfer System (GTS) project supporting the FPU planned dates.

Issues
CNS did not meet all the B61 Legacy Upgrade Project NESS activities. CNS completed the EE/PVT and input required data into CASTLE. CNS did not submit B61 assembly procedures that had received Unreviewed Safety Question Determination (USQD) evaluations to NPO before the B61 NESS. As a result, the procedures were removed from the scope of the NESS. CNS indicated that the assembly procedures were not processed through the USQD process because there was not a program control document (PCD) requirement to rebuild or repair a B61-3/4/7/10/11. However, the B61 Legacy Upgrade Project Plan included the assembly scope and required that all assembly and disassembly procedures complete the USQ process prior to the NES review. CNS was aware of this requirement and included it in their internal Readiness Verification activity. As a result, NNSA carried the assembly work into FY17 under a new milestone.

CNS fell behind schedule on the W88 Documented Safety Analysis transition to CASTLE primarily due to the lack of authorization basis and engineering resources at Pantex. The CASTLE transition must stay on schedule to avoid impacting the W88 ALT 370 SS-21 Project.

Objective 1.4
Accomplishments
None

Issues
None

Objective 1.5
Accomplishments
CNS supported all lithium activities and actions at Y-12. CNS (a) provided prompt, accurate responses to the Lithium Analysis of Alternatives team; (b) developed a Supply/Demand model for Lithium application; (c) supported Headquarters (HQ) in developing the foundation for a Lithium Sustainment funding line that contributed to the program receiving increased funding in the Future-Years Nuclear Security Plan; and (d) resumed lithium technology development.

CNS continued to work Readiness Campaign/Capabilities Based Investment (CBI) projects in support of the B61-12 LEP. These projects are essential to support rate production, as well as other requirements for the B61-12 LEP. These projects continued to progress on schedule in FY 2016. A Baseline Change Request (BCR) submitted by CNS and approved by NNSA resulted in the realignment of baselines between the B61-12 NNSA Integrated Master Schedule with the Y-12 baselines for these projects. CNS continues to work proactively with NNSA to address an acceptable approach to funding "orphan" projects required by the B61-12 LEP that are not being supported by other NNSA programs or the B61-12 LEP.

Issues
None

Objective 1.6
Accomplishments
CNS completed over 100% of the FY16 W76-1 warhead production and deliveries to the Navy consistent with directive schedule requirements, and in accordance with directive documents while completely recovering all FY2015 production build shortfalls. Despite being down most of October, CNS exceeded the overall production baseline and completed the largest production quantity of W76-1 since program inception. CNS also completed more than 100% of the CSA baseline for the W76-1 and recovered the lost schedule time affecting material stream production and assembly schedules resulting in a two week lead for assembly operations. This was done despite a large number of various operational challenges requiring disposition requests, engineering instructions, nuclear explosive engineering procedures, and various Y-12 facility infrastructure and Y-12 equipment functionality issues. CNS assembled the B61-12 Type 5B trainer and developed and utilized 614 assembly tooling & process flow despite scheduling and hardware challenges.

For the B61-12, CNS at Y-12 demonstrated use of a well-integrated project controls and technical project team. CNS at Y-12 used its P6 schedule to drive operational schedules and demonstrated the ability to quickly develop recovery plans integrated with operational schedules. CNS at Y-12 appointed an Action Officer specifically to track and coordinate multiple programs' piece part status on assembly schedules to meet program dates. CNS at Y-12 transitioned immediately into weld resolution activities by quickly fabricating weld rings and performing weld operations on a weekly basis.

CNS received a complete engineering release (CER) from Los Alamos National Laboratory (LANL); fabricated and assembled multiple B61-12 Test & Evaluation (T&E) units; and multiple Process Prove-In (PPI) assemblies. CNS exercised all piece part fabrication and material streams and yielded enough components to support future assemblies. CNS conducted many common components' engineering evaluations (EE) well in advance of their due dates. CNS exercised or improved atrophied capabilities such as rolling four (4) billets on the refurbished rolling mill, performed hot work on the new metal press, implemented new electropolishing capability, and demonstrated improvements on the metal machining of special features. In addition, some readiness projects were completed and progress continued on other readiness projects. Other readiness projects experienced significant schedule delays in the B61-12 portfolio. The following Qualification hardware was fabricated: Rad Caps Dev Lot shipped to LANL(30 Sets): functioning Hydro #02 completed; Non-Functioning Hydro #04, #05, #06 completed; and T&E2a.1 completed. Finally, CNS participated well with CSA Product Realization Team(s) (PRT) and supported all PRT and NNSA activities. CNS fully supported the B61-12 LEP System Baseline Design Review and Component Baseline Design Reviews. CNS fully supported the B61-12 LEP Pre-Production Engineering Gate (PPEG) that led to the authorization of Phase 6.4. CNS made progress on several B61-12 LEP Nuclear readiness Major Item of Equipment (MIE) projects. CNS worked with LANL to recover delays that were a result of additional development needed for the PBX 9502 IHE formulation. CNS-Y-12 shipped one functional and one non-

functional hydro unit to LANL on schedule.

For the W88 ALT 370 Project Controls Implementation, CNS delivered monthly status report submissions in the correct format and with the appropriate data and delivered unclassified detailed schedules and Interim Mobile Oceanographic Support System (IMOSS) submissions on time. CNS actively identified and managed risks in accordance with the risk and opportunity management plan (ROMP) and reported risks to Risk Review Board. CNS exceeded expectations at Y-12 by responsively adjusting (less than one-month turn around) and re-evaluating risks to the program upon direction from NNSA to re-baseline the scope in August. CNS at Y-12 worked hard to re-baseline the entire life-of-program scope per the direction of NNSA following the rigorous change control processes outlined as part of Earned Value Management System (EVMS).

Issues

For the B61-12, CNS at Y-12 recognized three risks in FY16 that impacted Y-12's critical path schedule and thus required a recovery plan based on future schedule compression. The first two Y-12 enterprise risks were with infrastructure and resource competition. The third risk was a technical risk which had been previously identified from previous programs and, therefore, could have been avoided and/or the impact mitigated. NNSA is concerned that Y-12 cannot continue to realize this many critical path risks in the coming year(s) and maintain First Production Unit (FPU). CNS is only able to maintain its current float to FPU by employing schedule compression tactics that increase the impact of future realized risks. CNS must actively identify and manage risks and execution uncertainty utilizing all funding sources available at Y-12 for infrastructure and full depth and breadth of its technical knowledge.

An electrical breaker failure identified during preventative maintenance on the rolling mill resulted in lost operational time. The impact delayed T&E2a assembly date from October 2015 to March 2016. The resolution involved planning to later dates than what was originally scheduled. In order to meet mission deliverables, NNSA expects that CNS ensure equipment, infrastructure, and labor resources are ready well in advance of operational dates so that key activities are not impacted.

Non-Metal piece part components were not available to support baseline assembly dates due to competition for resources and material. The impact delayed T&E2a assembly date from March 2016 to June 2016. The resolution involves planning to later dates to recover baseline by end of FY16. The CNS Action Officer was assigned to status weekly progress of part fab.

Weld porosity discovered during PPI-1 and T&E assemblies paused all further assemblies. The impact delayed PPI-1 completion by approximately two months and recover baseline schedule at the end of PPI-2 in FY18. There was sufficient evidence from prior programs that weld porosity was likely. CNS did not properly incorporate this information into risk mitigation planning. This risk was compounded by the rolling mill failure in the first quarter, and then the dependency on the execution of recovery to overcome the piece part delays. As Y-12's schedule compresses from prior risk mitigation, the magnitude of risk

impacts thereafter are greater.

Resource limitations at CNS have restricted participation at PRT and key project management meetings. This could impact CNS ability to identify disconnects between the CNS Integrated Site Schedule, Other Site Schedules and the B61-12 NNSA Integrated Master Schedule.

CNS did not submit B61 assembly procedures that had received USQD evaluations to NPO before the B61 NESS. As a result, additional work to include the scope in a follow-up CASTLE NESS in FY17 was required. Finally, CNS-Pantex management of the thermal chamber malfunctions has caused the start of B61JTMAC-SC-CC delay by more than a year.

Key Outcome 1.1

Accomplishments

None

Issues

None

Key Outcome 1.2

Accomplishments

CNS supported the B61-12 LEP Risk Review Board efforts for risk management and execution of mitigation activities to reduce programmatic risks. CNS submitted the B61-12 LEP Baseline Cost Report in accordance with published guidance.

CNS fully supported the W80-4 LEP team with the assignment of a full-time program manager; provided required data, information, and reporting requests from/to NNSA; and participated in team meetings. CNS has assisted in multiple program plan development and has participated in various team efforts associated with the initial set up of the W80-4 program.

CNS established and published an initial Performance Measurement Baseline for the life of program for the W88 ALT 370/CHE-R. CNS met expectations for the W88 ALT 370 Test Qualifications by delivering test hardware to Sandia National Laboratory (SNL) to support qualification tests and by delivering test hardware to LANL to support CHE Refresh qualification tests. CNS continued to work with LANL to recover delays that were a result of additional development needed for the PBX 9502 IHE formulation.

Issues

CNS needs to improve the alignment of their Integrated Site Schedule (ISS) and the B61-12 LEP Integrated Master Schedule (NIMS) by completing full alignment of all site-to-site handoffs.

CNS delayed reporting deliverables and responding to project management requests because of continued lack of resources supporting project scheduling and controls, risk management and program management.

CNS did not achieve the baseline deliverables for Functioning and Non-Functioning Hydros per the baseline requirements. CNS has not submitted the baseline for the work scope nor confirmed it as of the end of the evaluation period. CNS needs to improve the B61-12 LEP Performance Measurement Schedule Baseline by completing full alignment of all site-to-site component and documentation handoffs between CNS and LANL in the site schedule. Some Readiness projects related to the B61-12 LEP are experiencing significant schedule delays.

Key Outcome 1.3

Accomplishments

CNS exceeded expectations for activities associated with the recycle and recovery operations in support of NNSA missions. CNS exceeded the goal in FY16 for metal production, consolidation castings, and briquette processing. CNS made significant progress on the uranium processing maintenance program to support increased production in the future years.

- Significant progress was made this year in the processing of briquettes and CNS exceeded the goal of 150 (>158 actual) for the year due to process improvements.
- CNS produced 373 consolidation logs, which is approximately 25% more than the goal of 300.
- CNS made good progress to increase purified metal production through successful planned outages. CNS produced 219 kg of useable purified metal, exceeding the production target of 200 kgU.
- CNS produced 300 kg of green salt, exceeded the goal of producing 270 kg.

CNS exceeded expectations for activities to support ceasing Enriched Uranium (EU) programmatic operations in 9212 no later than 2025. Area 5 De-inventory efforts by CNS continued to exceed expectations by outpacing established A5D milestones to reduce risk and continued efforts to efficiently transfer HEU to the secure warehouse. CNS completed the installation of a chip rinse station in 9215. Although the task was not accomplished within the requested 90-day timeframe, CNS met the programmatic goals of embracing a difficult challenge, accomplished the objective, and briefed lessons learned to the Enriched Uranium Executive Steering Committee. CNS also achieved Technology Readiness Level (TRL) 6 for the electro-refining system, ahead of the established schedule and well ahead of the project's scheduled need-date. CNS exceeded the goal to move 200 CSAs from Area 5 to a Long-Term Storage Facility – 209 were removed.

CNS completed the disposition of legacy seal and containers from the 9720-33 facility on March 9, 2016, more than six months ahead of schedule.

Issues

None

Goal 2: Reduce Nuclear Security Threats, 10%

Under this goal, CNS earned a rating of Very Good and 88% of the award fee allocated to this goal. CNS exceeded many of the Objectives and Key Outcomes, and has met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. No significant issues in performance exist; however, CNS still has an issue with casting ingots to produce MP-1 experimental miniplates. Also, CNS Y-12 continued to manage testing needed to recertify the MD-2 container but further attention is needed to ensure the effort is completed within cost and schedule. Finally, CNS's delays in developing an integrated P6 schedule contributed to overall schedule delays in executing the Warhead Measurement Campaign (WMC). The performance level is evidenced by at least one significant accomplishments and the combination of accomplishments that significantly outweigh very minor issues. CNS's performance under this goal is described below.

Training has exceeded expectations by more classes this year with no decrease in quality. The last component for the NNSA Monitored Dismantlement measurements was completed, marking a significant milestone of this multi-year campaign. Notable accomplishments include successfully completing the first three shipments of HEU in support of the Repurposed Excess Uranium (REU) down-blending project ahead of schedule. Additionally, CNS supported Exercise Operation Mercury Acid in support of the NNSA Render Safe Program. CNS is responsible for casting and sizing the low-enriched uranium (LEU)-Mo material for the USHPRR program that will be used by BWX Technologies, Inc. (BWXT) to fabricate LEU monolithic fuel. During FY16, CNS has been directed to complete the casting of LEU and HEU ingots, perform quality checks, and ship the ingots to BWXT for production of the experimental mini-plates (MP)-1. CNS supported M3's Gap Removal Office by performing all work necessary to complete the removal of all HEU from Japan's Critical Fast assembly. Many CNS staff worked tirelessly to ensure this success ahead of the 2016 Nuclear Security Summit.

Objective 2.1

Accomplishments

Training has exceeded expectations by conducting 46% more classes this year than last year. The classes conducted for NNSA's Office of Radiological Security (ORS) increased from 26 to 38 (from FY15 to FY16). Class sizes have also seen a significant increase (59%) with no decrease in quality. At the Defense Nuclear Nonproliferation (DNN) Science Council meeting, the Y-12 Alarm Response Training (ART) was described as the "capstone" of the Domestic Office of Radiological Security efforts, and the instructors were described as passionate about their mission. The ART Academy is also developing and delivering new or customized courses for Panoramic Irradiator, for Ir192 sites secured under ORS, and conducted customized courses for Law Enforcement. CNS conducted site security assurance tests at five domestic sites, site security sustainment assessments at six sites, and a security assessment at one site.

Issues

CNS still has an issue with casting ingots to produce MP-1 experimental mini-plates.

Objective 2.2

Accomplishments

The last component for the NNSA Monitored Dismantlement measurements was completed, marking a significant milestone of this multi-year campaign.

Issues

CNS's delays in developing an integrated P6 Schedule contributed to overall schedule delays in executing the Warhead Measurement Campaign.

Objective 2.3

Accomplishments

CNS exceeded milestones and met overall cost, performed ahead of schedule, and accomplished the technical performance requirements to achieve permanent threat reduction by managing and minimizing excess weapons-useable nuclear materials and supplying nuclear materials for peaceful uses.

CNS exceeded expectations for foreign HEU removal by removing or eliminating HEU from Japan, Indonesia, Austria, Argentina, and United Kingdom. CNS exceeded by over .5 MT the NNSA cumulative milestone of dispositioning 153 MTU of surplus HEU by FY16. CNS processed, packaged, and shipped 3,600 kgU oxide for down blending ahead of schedule and exceeding the plan by 250 kg. CNS restored a 1 MT working inventory of high assay LEU derived by down-blending surplus HEU used to fill customer orders.

Issues

CNS needs to provide additional attention to ensure the MD-2 container testing and recertification is accomplished within cost and schedule.

Objective 2.4

Accomplishments

Due to its expertise and strength of proposals, Y-12 was one of three NNSA laboratories and sites to receive funding for support of a study to support IAEA monitoring of Iran's compliance with its Joint Comprehensive Plan of Action (JCPOA).

Issues

None

Objective 2.5

Accomplishments

CNS's Nuclear Counter-Terrorism Emergency Response (NCTER) Programs and Radiological Assistance Program (RAP) exceeded expectations. A noteworthy accomplishment was the CNS NCTER staff successfully completion of a very difficult task in support of the NNSA Render Safe Program. By acquiring and producing a B-61 hi-fidelity trainer to provide technical training for DoD Custodial Explosive Ordinance Disposal (EOD) teams and the NNSA ARG under an accelerated schedule, CNS developed and executed the Mercury Acid training drill, exceeding all expectations and enabling customer confidence to expand these exercises in FY17. RAP did an admirable job providing real time support to

state and local responders for two separate potential contamination incidents.

Issues
None

Key Outcome 2.1
Accomplishments
None

Issues
None

Key Outcome 2.2
Accomplishments
CNS exceeded milestones and met overall costs and technical performance requirements associated with a high priority and highly visible project to complete removal of all HEU fuel from Japan's Fast Critical Assembly which was a two-year effort completed prior to the 2016 Nuclear Security Summit. CNS employees worked long hours that included vigilant planning and execution in the measurement, verification, packaging, and shipment of more than 3,000 individual HEU items containing hundreds of kgU of HEU.

Issues
None

Goal 3: DOE and Strategic Partnership Project (SPP) Mission Objective, 5%

Under this goal, CNS earned a rating of Very Good and 88% of the award fee allocated to this goal. CNS exceeded many of the Objectives and Key Outcomes, and has met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. No significant issues in performance exist. The accomplishments greatly outweigh issues. CNS's performance under this goal is described below.

CNS efforts to pursue and capture SPP work was above expectations, receiving 18% more in new funding in FY16 than in FY15. Notable accomplishments include the removal of over half the excess uranium from the New Brunswick Laboratory (NBL) to move NBL to a less than Hazard Category 3 facility and delivery of uranium oxide test devices to the Department of Homeland Security (DHS) ahead of schedule. The Nuclear Production (NP) Field Intelligence Element (FIE) is operating above expectations by increasing classes conducted for other government agencies from six in FY15 to 14 in FY16. CNS needs to improve its work request and analytical processes to avoid the instances of off-specification shipments that occurred this FY.

Objective 3.1

Accomplishments

CNS efforts to pursue work were impressive, with 175 proposals sent to various Federal and non-Federal SPP customers and NNSA Management and Operating contractors in direct support of DOE and NNSA mission capabilities. Additionally, CNS processed 420 funding agreements and received new funding for approximately $61M from Strategic Partners and other DOE sites, which is 18% more than was received in FY15. CNS focused efforts on a fast-paced project to relocate excess uranium from NBL to aid in moving NBL to a less than Hazard Category 3 facility. Over half of the excess inventory is now packaged and ready to ship. The NP FIE has made a significant turnaround over the past FY. Early in the year, NNSA considered ceasing FIE operations at both sites. As a result, CNS quickly restructured FIE management and rebranded the FIE to better describe its function and also gain visibility in the Intelligence Community. The NP FIE increased funded training classes from 6 in FY15 to 14 in FY16.

Issues

CNS needs to improve its work request and analytical processes to avoid the instances of off-specification shipments that occurred this FY. (Refer to K.O. 5.4).

Objective 3.2

Accomplishments

Despite equipment challenges, CNS delivered uranium oxide test devices for the DHS Domestic Nuclear Detection Office ahead of schedule.

Issues

None

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

Under this goal, CNS earned a rating of Excellent and 95% of the award fee allocated to this goal. CNS exceeded almost all of the Objectives and Key Outcomes, and has met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. No significant issues in performance exist. The performance level is evidenced by at least one significant accomplishments, and/or combination of accomplishments that significantly outweigh very minor issues. CNS has continued to be successful in its performance under this contract as described below.

CNS reviewed numerous proposals projects for the final selection of FY17 proposals. CNS supported the Enhanced Surveillance subprogram by completing a topology optimization project with the Kansas City National Security Campus (KCNSC). CNS exceeded the goal of technology agreements and invention disclosures.

Objective-4.1

Accomplishments

CNS reviewed 119 new proposals (45 Pantex, 74 Y-12) and reviewed 104 proposed projects during the second stage (oral defense). It is expected that approximately 20 new proposals will begin in FY17, and approximately 63 existing projects will also continue to be funded. To continue improving Research & Development (R&D), CNS restructured the portfolio to align projects with CNS and NNSA Roadmaps by establishing a focused approach on critical-path technologies. R&D efforts related to high-priority technologies and challenges are being accelerated with greater funding amounts by reducing the total number of funded projects from approximately 140 to 78. New or emerging technologies are being incubated with smaller funding amounts and an increased emphasis on collaboration to fully explore fundamental science and engineering issues before technology applications are pursued.

Issues

None

Objective-4.2

Accomplishments

Increased investments in research led to multiple partnerships between CNS, national laboratories, and universities that are expanding capabilities and producing exceptional technical solutions for DOE, NNSA, and national missions. Through these collaborative efforts, CNS is supporting unique R&D projects to help solve the most challenging production issues in uranium electrorefining (ER), additive manufacturing (AM), and high explosives (HE) facing the Nuclear Security Enterprise (NSE).

Issues

None

Objective-4.3

Accomplishments

CNS technical staff and their collaborators significantly advanced the state of their fields during FY16 and exceeded expectations in research areas that will transform the enterprise's scientific and engineering landscape. Collaborative R&D between CNS, national laboratories, and universities led to ground-breaking results across many scientific and engineering disciplines, including, but not limited to (1) the crystallographic structure of uranium and its alloys, resulting in five journal articles with University of Virginia and Oak Ridge National Laboratory (ORNL) collaborators; (2) radiation detection and imaging, resulting in one issued patent and seven journal articles with Fisk University, Vanderbilt University, and University of Tennessee (UT) collaborators; (3) HE synthesis and testing, resulting in the deployment of advanced technology at Pantex; and (4) nuclear nonproliferation and forensics research, resulting in two journal articles with Purdue University and UT collaborators, which formed a better fundamental understanding of material properties of uranium hexafluoride during prolonged storage. As part of the Enhanced Surveillance subprogram, CNS met Level 2 milestones by completing a topology optimization project with the KCNSC. This will allow certain parts that are destroyed in testing to be manufactured at a lower cost, and without tying up valuable machining resources. The technology, Chemical Identification by Magneto-Elastic Sensing (ChIMES), was developed by CNS, and won an R&D 100 Award. ChIMES™ was selected as the 26th best technology in the world in 2015. In FY16, multiple organizations across CNS worked to streamline mechanisms that will foster more effective collaborative research efforts. This work resulted in two formal agreements with the Texas A&M University system and North Carolina A&T, in addition to retaining the existing partnerships with UT, Texas Tech University (TTU), Auburn University, and West Texas A&M University.

Issues

None

Objective-4.4

Accomplishments

To ensure future NNSA mission needs in the area of science, technology, and engineering can be effectively met, CNS focused on creating a sustainable R&D enterprise through improving facilities and capabilities. CNS exceeded expectations in FY16 through: (1) a $10M upgrade to Analytical Chemistry Operations (ACO); (2) significant improvements, upgrades, and installations to Pantex and Y-12 Development facilities; and (3) integrating the Pantex and Y-12 Development organizations and analytical capabilities to improve efficiency and conduct of research operations. The establishment of an enterprise-wide Additive Manufacturing Users Laboratory (AMUL) is integrating design, development, and manufacturing approaches across the two sites onto common platforms and approaches, which will greatly enhance the effectiveness and efficiency of the enterprise. The SLM280 (laser powder-bed AM) is being used to manufacture 316L test coupons and specimens to understand differences between AM tooling and standard tooling. Tensile testing, per ASTM E8 standard, is being performed with an industrial partner organization. The data being obtained is for design purposes related to tooling applications within CNS. Efforts have also begun to obtain approval for AM of aluminum tooling at both sites; initial testing of

aluminum began in May 2016.

Issues

None

Objective-4.5

Accomplishments

CNS has executed 46 technology agreements against an FY16 goal of 20, and has generated 70 invention disclosures against an FY16 goal of 50. CNS has also been issued ten U.S. patents, and filed three patent applications. The CNS ER team completed the evaluation of technologies for producing UCl_3 in 3 prototypical systems that generate UCl_3 in the LiCl/KCl eutectic using $ZnCl_2$. The information has been provided to the NNSA Uranium Program Manager, and is being used to determine the most effective and efficient method of UCl_3 supply for production with significant savings to the program baseline.

Issues

None

Goal 5: Operations and Infrastructure, 35%

Under this goal, CNS earned a rating of Good and 60% of the award fee allocated to this goal. CNS exceeded some of the Objectives and Key Outcomes, and has met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. No significant issues in performance exist. The performance level is evidenced by accomplishments that slightly outweigh issues. CNS's performance under this goal is described below.

Overall, CNS performance met expectations by ensuring Site Operations and Infrastructure were maintained and available to meet assigned missions. CNS faced challenges in financial management and the cost savings program, and NNSA is very concerned with programmatic cost growth since assumption of the contract and its impact on the ability to execute mission and project work. Execution of activity level work control continued to be an issue at both sites. Pantex struggled to implement corrective actions to improve previously identified poor performance in elements such as work package adherence, work instruction content, and pre-job briefings. Deficiencies were noted at Y-12 in the coordination of maintenance, operations, and engineering during work activities. CNS made significant improvements that reduced operational and safety risks by utilizing the Area 5 de-inventory and just-in-time delivery initiatives. Progress was made in addressing long-standing Nuclear Explosive Safety issues. Safety and environmental protection programs continued to be effectively managed.

CNS aggressively pursued a leasing strategy for the new Administrative Support Complex at Pantex that resulted in an agreement and the start of work on the facility. For projects, CNS support costs have grown to the point of impacting the ability to complete some project work within a reasonable cost. CNS demonstrated improvement in emergency preparedness, with the program at Pantex using the Implementation Plan in response to DNFSB Recommendation 2015-1 as a catalyst for making the program better. Improvements were seen in general housekeeping and material management and the effective use of outages to improve the condition of the electrical distribution systems was noted. The Protective Force (PF) at both sites consistently responded to security incidents and unforeseen events and performed successfully in DOE limited notice performance tests, force-on-force exercises, and external inspections. NNSA continues to be concerned with comingled waste stream issues. CNS Cyber Security and the information services organization succeeded in making improvements in areas where specific focus and attention was provided. However, several sub-topical areas of the program have degraded and no longer meet expectations.

Objective-5.1

Accomplishments

CNS achieved five million safe work hours without a lost work day away case (LWDA) injury, representing a milestone that had not been achieved since 1987 for the combined plants. CNS construction achieved 4,726 days without a lost time injury, and 1,552 days without a recordable injury at Pantex. At Y-12, 522 days were worked without a lost time

injury, and 170 days without a recordable injury. CNS received several 2016 NNSA Sustainability Awards, including winning Best in Class for four of the six categories for activities at Y-12. This is noteworthy, as this activity was judged NNSA wide. In addition, CNS was able to successfully disposition all remaining waste on the Oak Ridge Reservation Site Treatment Plan. This accomplishment was completed approximately two years ahead of schedule. For the third time in four years, CNS was selected as DOE's sole nominee for the Presidential Migratory Bird Federal Stewardship Award at Pantex, and ultimately was selected as second place winner. Individual efforts continue to promote and educate through publications and outreach endeavors regarding natural resources, sustainability, and research.

The Pantex Fire Department (PXFD) provided outstanding support to both the CNS Emergency Management group, and the community of Panhandle during the response to an offsite train collision. The PXFD was instrumental in providing the needed resources to respond to this significant event.

Issues

CNS shipped hazardous waste to a nonhazardous waste facility prior to receipt and verification/validation of waste sample results, and received a Notice of Enforcement from the Texas Commission on Environmental Quality.

The implementation of the CNS Radiological Control Stewardship Program continues to be challenged. Improvements include nine new generation personnel contamination monitors, touch screen monitors for radiological work permit sign-ins, and twenty-three (23) radiological areas have been downposted (14,744 square feet). Sustained improvements in the program implementation have not been demonstrated. CNS has provided an accurate assessment of the status of the program in its Performance Self-Assessment Report (PSA), and continues to strive for continued improvement in this area.

One vital equipment issue was noted with the firefighters' Personal Alert Safety System (PASS) devices at Y-12. The PASS devices are not functioning properly, and therefore are not sensing the movement of the firefighters. This has resulted in multiple safety issues for the department including: distracting the firefighters, not allowing the use of both hands for performing tasks, increasing the time it takes to perform operations, and conditioning the firefighters to ignore or not trust the PASS signals. The defective air packs have been removed from service until they can be replaced, and CNS continues to test the remaining packs to ensure the PASS devices are working properly. This is identified in the CNS PSA as well.

Objective 5.2

Accomplishments

CNS received approval from the NNSA to pursue a new Administrative Support Complex (ASC). The business case was submitted to the Office of Management and Budget and CNS has worked closely with NNSA to address the questions and concerns. The lease was signed on August 17 and a ground breaking ceremony with the Secretary of Energy and the NNSA Administrator was held on August 18. The developer, PanTex ASC LLC, is currently

awarding construction subcontracts and mobilizing contractors.

The CNS Lithium Production Capability Project team has provided exceptional support to the NNSA independent Analysis of Alternatives team through cost estimating, technology development options, meeting coordination, resource management of subject matter experts, and travel to support NNSA high level senior management briefs in Headquarters. CNS continued to provide valuable and timely support for the Lithium Production Capability Project Analysis of Alternatives by helping to identify/review risks, threats, and opportunities and to determine outsourcing possibilities. Additionally, CNS responded to numerous data requests and provided essential information regarding cost and schedule for developing several pertinent technologies.

During FY16, CNS EVMS certification efforts initiated the DOE Project Management-30 Roadside Visit Assist in the month of March at Y-12 and Pantex in July. During the assist, CNS agreed to pilot the PM-30's EVMS Interpretive Handbook process development. CNS did a commendable job working with DOE/NNSA to develop definition and refinement of the EVMS IH Pilot Charter. CNS hosted the EVMS IH Pilot kick-off effort with PM-30 on 16-May-2016 and worked closely with PM-30 to achieve a schedule that was acceptable to NNSA leadership. The EVMS IH Pilot Charter approval by DOE/NNSA officials on June 2, 2016 allowed formal initiation of the CNS certification process utilizing available resources through transparent collaboration, database programming interactions, and continuous communications with all teams.

Issues

Although all trimester issues were not addressed, the overall performance for the rating period demonstrates progress in relation to the post-Beneficial Occupancy Date expectations. The CNS project team continues to incur delays in projected completion dates and overruns in management and subcontract costs (expected to complete with a $2.5M-$3M negative variance on $7M of Performance Measurement Baseline work). CNS has completed three subcontracts and numerous maintenance Work Orders and Direct Hire packages, managed two ongoing/active subcontract, and initiated numerous additional Direct Hire packages. The CNS project team has also completed planning and executing work to close 41 of 69 remaining submittal gaps (59%) within this planning period (generally on time). CNS continues to lag behind expectations in the area of the catenary system. The latest aspect is failure to resolve weld quality concerns (identified by CNS as an issue in June 2016) in a timely manner and has negatively impacted the projected CD-4 date. Given that the catenary system deficiencies originated as an M&O contractor-owned design-related issue, and that slow resolution of re-design and subsequent procurement of the deficiency correction contract have already impacted the CD-4 date once, this new/continued impact to the integrated schedule for completion that was fully within the control/authority of the M&O contractor is especially disappointing. CNS has aggressively pursued and reported progress on recovery actions with the designer of record.

For the Calciner, CNS had executed a revised procurement strategy to separate calciner procurements – one for the calciner furnace and one for the balance of the equipment and systems integration. Schedule performance is 10 months behind the October 2015

preliminary baseline schedule. The Calciner Furnace bids received required extensive negotiations and work to receive 100% warranty liability and patent language terms and conditions agreement and ultimate award on June 30, 2016 for $1M. The revised procurement strategy gained improved vendor interest and pricing for the general equipment contract work scope and was awarded on August 16, 2016, for $1.3M. Overall, both procurements were $2.3M less than the initial CD-1/3A estimated cost range. Work re-planning due to the acquisition delay has a $1.7M cost increase impact to the project.

For the Electrorefiner, the procurement for the glovebox and furnace design/fabrication subcontract was awarded seven months behind schedule in July 2016. This delay was due to poor estimating of the procurement cost, which was originally planned at $4.6M but was awarded 300% over the estimate at $13.2M. This was particularly disappointing since a Peer Review recommended a much higher cost range for the project. Additionally, the procurement package that was submitted to NNSA for approval was incomplete, which also added delays to awarding the contract. The CD 2/3 date was impacted by 6 months. The project team has submitted a Level 1 Baseline Change Proposal which will incorporate these impacts as well as program directed changes.

In FY16 CNS experienced significant challenges executing minor construction and expense projects. Issues such as inaccurate cost estimating, inadequate staffing resources, and design errors contributed to approximately $60M in carryover in Recapitalization, increased project costs, and resulted in schedule delays. Additionally, cost and schedule overruns on many Recapitalization projects leads NNSA to conclude CNS continues to struggle with upfront project planning. In an effort to completely understand and address these matters, CNS management conducted workshops to identify the root causes and work towards developing solutions for these issues, which are formally identified and tracked in their Issues Management System. Although efforts were made late in the year to execute shovel ready work, it had little impact. Concerns persist with respect to increased project costs.

The CNS costing strategy assigns a percentage of anticipated cost savings expected in indirect funding pools to direct programs as a type of fee, making it difficult to track which funds were available for execution and which funds had to be held in reserve. More specifically, this has been especially problematic in the Recapitalization program because these fees and reserves had to be allocated at the project level which gives the appearance of anticipated cost savings on a project when in reality, savings aren't expected, and in some cases, the projects are overrunning. Project-level cost savings for FY15 were finally identified and entered in G2 in the first period of FY16. Thus far, the Recapitalization program has not seen any benefit of CNS's cost savings initiatives; rather the program has seen cost increases. FY16 Recapitalization projects have accounted for reasonable costs savings, but the savings estimates changed throughout the year, which made tracking savings at the project level difficult.

CNS support costs for projects have grown to a point of impacting the sites' ability to complete much needed facility replacements and upgrades within a reasonable cost. Additionally, NNSA has concerns about Pantex's ability to complete the Gas Lab Facility within the $10M General Plant Project threshold, which is largely attributed to site support

costs.

Throughout the year, CNS's implementation of Nuclear Quality Assurance (NQA-1) requirements and Commercial Grade Dedication processes negatively impacted projects in both cost and schedule in areas such as rework and procurement delays. For example, CNS identified a concrete issue in a cell that is undergoing a Recapitalization fire system project. The project team failed to (1) identify that NQA-1 requirements were applicable to the replacement of the floor and (2) properly initiate a field change to the Design Change Proposal (DCP), which prevented a USQ review of the change. This lack of formality has resulted in a requirement that the concrete be replaced, as well as a delay and cost increase in the project.

At the end of September 2016, about halfway through the EVMS pilot project schedule, CNS corporate EVMS Organization's oversight of the UPF project's participation in the EVMS certification pilot project is inadequate. The CLIN 2 UPF project has not adopted the CNS corporate EVMS System Description and its requirements into the UPF project's procedures and project implementation. Until the UPF project's implementation is in compliance with the System Description and the CNS corporate EVMS Organization displays their ability to self-govern by correcting the UPF implementation and compliance with the System Description, the DOE-PM certification team's ability to certify the CNS system is in jeopardy.

Objective-5.3

Accomplishments

Throughout this rating period, the PF at CNS has consistently responded to security incidents and unforeseen events and in the results of DOE limited notice performance tests, force-on-force exercises and external inspections. For example, early in the rating period, the Pantex PF effectively facilitated the return of employees following the MTC work stoppage. Not only did the PF effectively support the return to secure operations but also set a positive tone in welcoming MTC members back to work. In a security event at Pantex later in the fiscal year, the PF detected, assessed and quickly responded to an intoxicated individual driving a vehicle through the fields in the buffer zone. This individual also dismounted and crossed into the Property Protection Area boundary where shortly thereafter he was detained and apprehended by law enforcement without injury and property damage. In a similar incident at Y-12, the PF responded effectively when a driver did not stop at the front gate. The PF smartly deployed the Vehicle Arresting System which the driver crashed into at full speed and, in close coordination with the Oak Ridge Police Department, detained the driver. Other events occurred during the rating period at both sites where the PF response was immediate, well-coordinated and demonstrated sound decision-making, to include requesting external assistance, such as air support for a Y-12 event. The PF performance during force-on-force performance testing at both sites demonstrated positive team tactics, techniques, and capability. CNS conducted numerous tests rigorously, safely and professionally. DOE Limited Notice Performance Tests at both sites during this rating period identified no major issues with protective force operations. Comprehensive security inspections of the PF at each site resulted in no findings, which is a significant accomplishment for a large, complex program. The PF programs effectively demonstrate the ability to protect the nation's nuclear assets. In addition, CNS

demonstrated positive performance within the Material Control and Accountability (MC&A) topical area during an EA Inspection conducted at Y-12 during FY16.

Issues

Although CNS implements many elements of the safeguards and security program effectively, some problem areas persist, namely the prevention of comingled waste, consistency in implementing security measures at offsite facilities and inability to project and control costs. NNSA continues to raise concerns pertaining to comingled waste stream issues (classified matter placed in waste streams for unclassified matter), a concern at both sites. At Y-12, CNS has developed a path forward, and is implementing corrective actions. At Pantex, a single facility that was initially acknowledged as having a comingled waste disposal issue and identified as an Incident of Security Concern, seems to have addressed this problem. However, incidents of comingled waste continue to occur periodically, indicating a need for continued management attention. These circumstances prompted a DOE Office of Enforcement visit to Pantex in August 2016. Regarding the consistency of implementing security measures at offsite facilities, which is mainly a problem at Y-12, NNSA continues to identify that not all security requirements are being implemented effectively at the off-site locations. This performance inconsistency has resulted in several federally issued findings to CNS. Continued management emphasis will be required to address these performance inconsistencies. The inability to control costs has also caused a shortfall of critical capabilities, particularly within the MC&A program at Y-12 and overall Cyber Security.

Objective-5.4

Accomplishments

CNS demonstrated its exemplary Operations and Maintenance performance during the snowstorm in December, including its response to recover from an electrical outage. CNS also achieved significant improvement in freeze protection, site preparedness (removal equipment) and building preparedness (execution of cold weather checklists), which resulted in the ability to operate normally throughout the winter season.

CNS received several awards for leadership in sustainable practices including: 1) Electronic Product Environmental Assessment Tool (EPEAT) Purchaser 2 Star Level Award for Excellence in Green Procurement of Electronics; 2) two DOE Sustainability Awards for Water and Change Agent; 3) four NNSA Sustainability Best in Class Awards for Water, Waste Reduction and Pollution Prevention, Performance Based Contracts and Change Agent; and 4) two NNSA Sustainability Environmental Stewardship Awards for Greenhouse Gas Scope 1 & 2 and Waste Reduction and Pollution Prevention. CNS also received Tennessee Chamber of Commerce and Industry Environment and Energy Awards, including: 1) Y-12 Uranium Processing Facility (UPF) Sustainable Practices in Solid and Hazardous Waste Management and 2) Y-12 Reduced Water Usage and Improved Water Quality.

CNS received an Environmental Stewardship Award at Y-12 from NNSA in the waste reduction and pollution prevention category for the recycle/reuse of 74.4 million pounds of materials, including 63 million pounds of asphalt, 4.2 million pounds of wood and 240,000 pounds of scrap metal. Y-12 was also selected to receive a 2016 DOE Energy Sustainability

Award for "Y-12 Reduced Water Usage and Improved Water Quality."

At Pantex, CNS operates its own Public Water Supply System. Again in FY16, the Texas Commission on Environmental Quality designated Pantex's system as "Superior" the best classification offered due to operational compliance going beyond what is required by regulation. CNS has developed and implemented an integrated approach to water resource management and 100% of wastewater generated on-site is used for agricultural purposes.

CNS proactively developed plans and cost estimates and initiated roof repair projects to reduce the risk posed by Alpha-5, Beta-4, and 9206. CNS developed an aggressive schedule and addressed high-risk items and is currently ahead of schedule. In addition, CNS quickly and thoroughly responded to time-sensitive requests for information, including providing timely information in support of NA-50's decision to conduct demolition of ten smaller facilities at Pantex.

CNS eliminated the 53-year-old Pilot Wire Trip (PWT) circuit at Y-12. The PWT was a liability and operational risk due to its condition. Utilities and engineering collaborated to develop electric power distribution selective tripping by adjusting trip relays, which made the PWT unnecessary. This approach resulted in significant engineering, craft, and material cost savings.

CNS continues to make significant progress toward improving the condition of the Electrical Distribution Systems at both sites. Pantex executed its EDS recovery plan, completing repairs and PM activities during two zone outages and 14 overhead outages completing over 300 items that included infrared surveys, repairs to 32 Automatic Transfer Switches, and North Substation maintenance. This was accomplished despite severe weather hampering planned work. Y-12 continues to make progress toward reducing the backlog of overdue preventive maintenance, including performance of Fire Protection deluge system testing on 161 Kv transformers.

CNS has supported the Roof and HVAC Cooling and Heating Asset Management Programs. Both sites have tested and are implementing a more innovative and effective contracting approach for the roof program that implements roof repair instead of complete replacement. However, NNSA is concerned about the amount of site support dollars that are required by CNS to implement RAMP activities, the highest amount of site support dollars of all NNSA sites.

CNS reduced the amount of reported Deferred Maintenance. CNS conducted an evaluation of Deferred Maintenance versus Repair Needs, as newly defined by the Office of Safety, Infrastructure and Operations. CNS completed efforts to identify deferred maintenance and repair needs per the NNSA Program Management Plan, resulting in the transfer of approximately $102M out of deferred maintenance and updated G2 and the Facility Infrastructure Management System accordingly. Pantex provided timely information in support of NNSA decisions to conduct demolition of nine buildings, and is on schedule to complete the demolition of ten temporary buildings. Y-12 has maintained the aggressive schedule for the roof repairs and completed the scope on schedule and under budget.

Issues

Execution of activity level work control continues to be an issue at both sites. Pantex struggled to implement corrective actions to improve elements such as work package adherence, work instruction content, and pre-job briefings. At Pantex, untrained workers were used without appropriate job hazard analysis work plans and work was performed outside the scope of a work package. Additionally, errors in activity level work control practices at Pantex led to inadvertent fire suppression system activation and pressure vessel over pressurization. At Y-12, the coordination of maintenance, operations, and engineering was deficient in some cases. Efforts are underway at both sites to address these problems.

CNS anticipates a carryover of more than $63M; $39M of this carryover resulted from project challenges such as design errors, resource staffing issues, and unscheduled delays. The remaining carryover amount was planned carryover to support scheduled project work in FY17. Approximately 50% of the total funding was not received until last March, although it did not create delayed starts because FY15 carryover was available. CNS s undertook a focused effort to increase workload and spend plans for the remainder of FY16 and FY17. Of concern is that underperforming in this area hinders credibility with stakeholders and may result in fewer funding opportunities in the out years to replace deteriorating equipment and modernize aging infrastructure.

During the fourth quarter, the Office of Secure Transportation (OST) identified performance concerns related to inadequate technician and quality assurance staffing, untimely provision of vehicle parts, inaccurate weekly lot inventories, and non-adherence to the task-order agreements. Some of these issues resulted in cost and/or mission impact. CNS has taken steps to address the staffing concerns by hiring a Quality Assurance Program Manager, and is working proactively with NPO and OST to address the remaining concerns satisfactorily. These areas will be closely monitored in FY17 to ensure resolution.

CNS Enterprise Preventive Maintenance (PM) Completion performance rate is consistently below 61%. First period performance can be largely attributed to the Pantex strike and recovery. In addition, reporting methods for data collection at Pantex may also contribute some to this poor performance. However, it is not possible to determine to what extent data collection contributes.

Pantex Fire Protection Engineering significantly under reported fire systems maintenance needs to the maintenance organization. CNS discovered the issue during efforts to improve enterprise metrics and reduce maintenance backlog. Organizations are now working closely to correct this issue.

The number of out-of-service (OOS) fire protection systems, overdue preventative maintenance, and compensatory measures continued to increase at Pantex. The increase has been steady since October 2015, and since October, the number of suppression systems OOS has increased by nine; the number of alarm system devices OOS has increased by 49; overdue preventative maintenance increased by 106; and the number of comp measures has increased by 12. All of these increases can be contributed to maintenance not being

performed. This was also identified as an issue in CNS's PSA.

Objective-5.5

Accomplishments

CNS exceeded performance expectations in a few business functional areas. CNS exceeded all Small Business socioeconomic goals, including its 55% total goal by 12%. Thirty-three cost reduction initiatives (CRIs) were implemented by CNS, projecting nearly $15M in cost savings this fiscal year. Property inventories for firearms, precious metals, sensitive items, and capital equipment produced "Excellent" results. CNS is ahead of schedule for a GSA Fleet conversion that should result in lower cost in maintenance and fuel, and will provide modernized safety features for all users. To integrate enhanced Nuclear Security Enterprise scheduling, CNS developed and implemented the Enterprise Logistics Management System, an electronic system for planning, scheduling, and shipping weapon drum-type containers. The system has reduced shipping authorization time by 90%; improved accuracy in inventories and planning; and yielded a reduction in container recertification time. CNS matured their Knowledge Preservation Management System that served as a bridge to hiring activity and the onboarding of new personnel in critical areas. CNS successfully obtained National Archives and Records Administration certification for three Records Storage Centers and established a Command Media Website. The CNS Internal Audit (IA) delivered efficient, effective, and responsible business operations and internal controls through FY16. The CNS IA completed the FY16 revised audit plan and continued to respond timely to a variety of IG/GAO audit-related tasks and reviews.

Overall, CNS achieved improved performance in all areas of internal and external communications during the FY16. Of particular note was the notable performance in managing multiple high visibility special events and VIP visits at both sites and news media relations. Performance in Emergency Public Information (EPI) at Pantex continued to improve and the Y-12 EPI program is performing well. Communications services support, which includes photography and graphic arts, was outstanding. Coordination of social media outreach was well coordinated during the year, particularly with growing requirements from NNSA Headquarters in this area.

Issues

CNS faced challenges in several business areas, most notably in financial management and its cost savings program. The absence of an integrated business system created inconsistent submission and management practices and continued to hinder financial integrity putting NNSA mission deliverables at risk and complicating the ability to validate savings. Throughout the rating period, NNSA raised concerns regarding CNS's financial management and performance with regard to overall budget formulation and execution. Although CNS took several actions to correct a funds misalignment, transparency into those actions was insufficient to maintain confidence in the projected outcome, as well as viability of the cost accounting practices. As a result, NNSA had to provide additional funding to the contract in order to complete assigned work scope; extreme shifts in indirect cost variances occurred throughout the year; and for some Obligational Cost Levels, precariously low end-of-year uncosted/uncommitted balances were created.

In addition to the funding and program disconnects described above, NNSA expressed concerns regarding programmatic cost growth since assumption of the contract. The cost growth far exceeded the estimates for cost model increases built into estimates in the FY16 President Budget Request and Future Year Nuclear Security Plan, with some DSW programs experiencing cost growth as high as 50%. CNS identified a system solution to provide a single integrated financial system but it will require more than system integration to restore confidence in CNS's financial management. The FY16 cost savings financial management approach CNS used resulted in multiple revisions to cost savings reporting. CNS delivered revisions to the 2016 Annual Controlled Baseline, 2015 Cost Reduction Proposal Validation Report, and the 2016 Cost Reduction Proposal, which allowed NNSA to conduct verification reviews of the claimed savings. There continued to be unresolved challenges in 1) the defining and implementing CNS processes to support the acceptance of cost savings deliverables; 2) the validation of savings; 3) the transparency to NNSA; 4) the tracking of execution costs; and 5) the delivery of clearly defined scope and cost baselines. Without transparency and sufficient tracking of execution costs, supply chain, and benefit savings, the likelihood that the NNSA can confidently validate net cost saving is reduced. Many deliverables and other documents continue to be untimely delivered or even outstanding for months at a time, significantly delaying NNSA review and damaging the credibility of the cost savings program with stakeholders. All the deliverables continue to have quality challenges that require the NNSA to seek clarifications. Moving forward, CNS actively participated in an on-going Cost Savings Program Integrated Project Team, which should increase transparency and communications amongst all stakeholders.

Objective-5.6

Accomplishments

CNS provided a beneficial legal analysis on a complex matter related to the registration requirements of the North American Electric Reliability Corporation for the operation of the Elza substation. The analysis was timely, well-written, and comprehensive and assisted NNSA in determining a path forward. Further, CNS has started providing its legal analyses to NNSA to justify its agreement for exceptions taken to subcontract terms and conditions. By explaining the justifications upfront, review time by NNSA is shortened and therefore, approval can be granted more timely. CNS provided timely legal guidance and advice regarding acquisition planning and complicated transactional documents associated with the Pantex Administrative Support Complex, as well as playing a critical role in negotiating with multiple parties and resolving last-minute barriers which allowed the project to move forward as scheduled.

In collaboration with its outside counsel, CNS Legal obtained a dismissal of 1) an Americans with Disabilities Act (ADA) lawsuit and 2) a dismissal of lawsuit filed by a former employee alleging race and sex discrimination, as well as violations of the ADA and the Family and Medical Leave Act. CNS Legal also obtained a dismissal in April 2016 of a putative class action lawsuit brought in Tennessee state court by current and former employees challenging CNS's institution of the Paid Time Off plan, which avoided the plaintiffs' desired remedies of payment for allegedly "lost" vacation time and reinstitution of the previous contractor's vacation plan, which would have been chaotic and expensive. CNS Legal staff wrote the briefs and argued the motion in court, thus saving the NNSA a considerable

amount in outside counsel costs.

CNS also was successful in settling the following disputes, which resulted in avoidance of expensive litigation costs: 1) a contractual dispute with a Pantex information technology subcontractor; 2) an ongoing employment/labor dispute with a terminated employee; and 3) a pending lawsuit filed by 53 non-exempt, non-bargaining unit Y-12 Protective Force officers who alleged violations of the Fair Labor Standards Act.

Programmatic support provided by Legal included 1) supporting Supply Chain Management in a heavily negotiated, approximately $4M procurement in June 2016 of new SAP software licenses to maintain CNS' Y-12 data and prepare information systems for further consolidation with Pantex; 2) supporting the Uranium Processing Facility project regarding applicability of sales and use tax requirements and exemptions for future procurements; 3) supporting Supply Chain Management's Storage Plan for Achieving our Culture of Excellence (SPACE) initiative in negotiating a no-cost lease for the property at the East Tennessee Technology Park; and 4) contributing to the technology transfer mission by helping negotiate a funds-in Cooperative Research and Development Agreement involving testing and production of certain materials.

Issues
None

Objective-5.7
Accomplishments
CNS has successfully implemented the Knowledge Preservation System for potential use across the Nuclear Security Enterprise including access across the Enterprise Secure Network. CNS enhanced logical access security for the unclassified network through its site-wide deployment of HSPD-12 badge card readers. CNS implemented a consolidated Change Management procedure including the implementation of the Change Advisory Board that formalized changes at both locations. In addition, its use as a part of the production pause activity resulted in training capabilities used to train 700+ manufacturing employees. Additionally, CNS consolidated both sites project data into a single e-Capital Planning and Investment Control report and deployed the Emergency Management Information System. Additionally, CNS made noteworthy progress in establishing workload governance structures and common project management processes. This includes drafting a formal process, currently under management review, that establishes front end management of IT requests through CNS Investment Review Board (IRB) approvals and then into project execution. An Enterprise Change Management Process was formalized and fully integrated into the application ServiceNow. This brings all CNS changes into the same system for improved consistency, visibility and management. CNS continues to transition to an enhanced service model that is ITIL-based and maturing problem resolution processes.

CNS Cyber Security and the overall Information Solutions and Services (IS&S) organization have succeeded in making improvements in areas where specific focus and attention were provided, such as vulnerability management, improving core monitoring capabilities, and positive performance in a recent Command Cyber Readiness Inspection (CCRI) conducted

by NNSA Headquarters. CNS has succeeded in implementing the initial foundation of a single enterprise unclassified network, which has been a key initiative; this effort incorporated a number of cyber security technologies and demonstrated steps towards transitioning to a common enterprise approach for cyber security. During FY16, NNSA and external entities have independently noted the level of dedication of the CNS Cyber Security personnel, which remains a programmatic strength. During FY16, CNS resolved telecommunication issues identified with the Pantex COMSEC Program.

Issues

The CNS IS&S area of concern continued for timely and enduring issue resolution related to desktop computing support, including implementation delays associated with information technology projects and Microsoft Lync federation. The CNSNet Project is currently on target on its re-baselined schedule and CNS is working to escalate that implementation for completion this calendar year. CNS has implemented a tailored approach to project management of the Business System Modernization Project consistent with flexibilities allowed in DOE O 413.3/415.1; however, the project lacked a sound documented basis for accelerated milestones or the predetermined completion date. Delayed progress in these areas holdup full transition of business systems. NNSA is concerned about the attrition of critically skilled IT/Cyber positions, as the skills required for IT infrastructure project success hinge on these critical resources. Full implementation of a critical network solution remains incomplete. CNS has yet to implement several key cross-site IT processes to support internal IT/Cyber operations that are reducing efficiencies across CNS. CNS has not mitigated NNSA's concerns related to site datacenters, which can result in critical mission impacts for NNSA.

The CNS Cyber Security program has not experienced any identified incidents stemming from an external threat. However, there are indications of program degradation that impact the effectiveness of the technical aspects of the Cyber Security Program. The NPO Authorizing Official was not informed of an antivirus issue for more than a week and a half after the event occurred. In addition, NNSA had to notify CNS of an issue regarding media protections.

Starting in FY2015 and continuing through FY16, the following sub-topical areas of the Cyber Security Program have degraded and no longer meet expectations: Program Management, Formal Authorization, and Continuous Improvement. While NPO is cautiously optimistic with the leadership changes implemented in the latter part of FY16, CNS has struggled over the past two years in maintaining consistency in critical leadership roles within the Cyber Security Program. At the end of FY16, only one individual has remained a consistent member of the CNS Cyber Security leadership team. While the remaining members of the CNS Cyber Security staff have demonstrated the ability to adapt to new challenges, the level of attrition has caused loss of organization knowledge, capability, and capacity. The attrition of senior technical personnel and the inability of CNS to effectively hire qualified personnel continue to be a key NNSA management concern. The leadership volatility has also negatively impacted the management of the cyber security budget. CNS has not yet demonstrated an effective approach for managing the cyber security budget as a single enterprise. CNS has struggled to consistently and effectively respond to stakeholder

requests, such as from Headquarters. There are a number of instances in which CNS submitted requests late, requested extensions, or had to correct information when stakeholders identified inconsistencies with the submission.

While there have been some targeted improvements in the quality of specific Cyber Security formal authorization deliverables and significant dedication demonstrated in developing the new material required for the implementation of the enterprise network, the overall formal authorization/risk management activities are in an unacceptable state. In addition, there have been instances in which security risks formally identified by CNS have not been provided to the NPO for risk acceptance.

CNS has made some effort to improve program self-assessments, but overall the process does not demonstrate that CNS can self-identify, prioritize, and resolve issues within the Cyber Security Program. The state of the cyber security program management, formal authorization, and self-improvement efforts are negatively impacting NNSA's confidence in the overall effectiveness of the program.

NNSA remains concerned with the status of CNS's performance to fully resolve significant issues which have led to the degradation of the overall state of their program since 2014. CNS is making improvements; however, the results of independent reviews and cyber incidents demonstrate a continued trend of the challenges from 2014.

CNS has implemented several improvements across its programmatic and technical controls to satisfy the Implementation Factors of the Cybersecurity Program Execution Guidance, and received a positive rating for a recent CCRI conducted at Y-12; however, independent assessments/inspections continue to report significant systemic issues across both sites that continue to be persistent challenges for CNS to resolve and continue to impede integration. These issues are still compounding weaknesses in program planning, implementation, or monitoring and adversely affecting the operational status of information systems/networks. Examples include: failure to deliver vital information to the NPO AO in a timely manner which resulted in revocation of the authority of systems to operate; failure to comply with the Risk Management Framework (RMF) which resulted in the suspension of RMF by the AO; failure to adequately staff personnel to support the cyber program; and failure to effectively maintain and execute a Cybersecurity Improvement Plan (CSIP).

Although NNSA recognizes improvements, the inability of CNS to fully resolve significant program issues impedes its ability to return and maintain the state of the overall program to the level of performance required.

Key Outcome 5.1

Accomplishments

CNS partnered with the University of Tennessee College of Engineering's Reliability and Maintenance Center to assess current conditions and processes and help implement changes to improve asset reliability and decrease cost. The Y-12 assessment is complete and the team is working recommendations. The Pantex assessment is scheduled for FY17.

CNS Security Maintenance crews complete priority 1 security system repairs within a self-imposed 24 hour time period, with only few exceptions. Y-12 completes 97% of notifications in fewer than 24 hours with an average time consistently less than ten hours. Although metrics show Pantex is not performing at the same level, much of the difference is due to reporting anomalies and actuals show average time to complete repairs at Pantex is around 30 hours.

CNS is continuing to provide extensive support to the BUILDER initiative, serving as a BUILDER Center of Excellence. CNS met the Phase II and Phase III milestone completion dates ahead of schedule; provided valuable data which is helping shape policy decisions; and fully migrated all existing site data into the BUILDER system. CNS is currently working to obtain a subcontractor for Y-12's BUIDLER data collection efforts. CNS also stepped up and served as a pilot site for testing the Functionality Module. Several CNS subject matter experts received the NA-50 Award for Excellence in this area. CNS Pantex hosted the BUILDER planning meeting for the upcoming FY and CNS is taking the lead on upcoming key activities.

New Air Compressor system and building construction has been completed at Y-12 as part of Energy Savings Performance Contract (ESPC) contract. CNS completed testing of new systems that have been brought on line in an effort to reduce electric power requirements and reduce operational risk associated with loss of air. CNS discovered abnormal vibration in two units. CNS efforts resulted in vendor completing necessary fixes and supplementing with 3 year warranty. This ultimately provides greater air system stability as well as increased energy and cost savings.

CNS continued to aggressively pursue electric system preventive maintenance and utility pole replacements. Y-12 either removed or replaced 45 utility poles and removed approximately 113,000 linear feet of unneeded power system cabling was removed. Pantex is effectively executing the electric distribution improvement plan developed during FY15, completing 347 items.

Issues

Aging state of the Pantex electric distribution systems and Y-12 tower water system continue to cause upsets and disruptions of operations. Y-12 suffered another tower water system piping rupture at a critical location. However, the immediate response by CNS to events was timely, which minimized the impact to operations.

High risk infrastructure repair needs at Y-12 have not been addressed. CNS evaluated Tower Water piping system locations as high risk for immediate failure and none have been acted upon. The risk was realized in one nuclear facility when a pipe failure occurred at one of the identified locations. In addition, Y-12 is operating with a single point failure in the electrical system that would significantly impact mission. The condition has existed for over one year and is due to a failed transformer that has not been replaced.

CNS is operating some systems in an inefficient and costly manner. At Y-12, ESPC project steam plant condensate is not being returned from a facility and is thought to be due to

system design issues. Problem is long standing and solution is not known. At Pantex, HPFL system maintenance pump is being run continuously although only needed intermittently. This operation is not as designed resulting in system failures, and wasted electric energy and water.

Key Outcome 5.2

Accomplishments

CNS continued to work with the DA on developing a weapon response for anomalous units (AUs) while improving weapon response communication. CNS completed the short-term actions that allowed the AUs to be placed into transportable configurations in order to improve facility utilization. After receiving weapons response from the DA, CNS successfully disassembled the two AUs. CNS made progress in evaluating the disposition pathway of a legacy B61 post-mortem unit. CNS initiated characterization, packaging, and transportation information including extensive communication with the DA on which post-mortem components will require further evaluation and/or surveillance. Also, CNS completed a 100-V feasibility study in August that identified all the needed tooling and facility modifications including Electrostatic Discharge administrative controls that included evaluation of over 1,500 individual pieces of tooling.

CNS made significant progress on improving the Nuclear Explosive Safety (NES) Program, as indicated below:

- More than 400 walkdowns of Nuclear Explosive Operations were conducted and more than 90% of all NES priority tasks were observed within the last 2 years. These efforts resulted in the NES Performance Demonstrations (PD) metric being "Green" for the first time since the CNS contract began.
- The number of open NES findings were reduced by more than 24% through significant improvement in the status, tracking, and communication of open NES findings.
- The number of qualified NES staff increased by more than 50%.

CNS made significant improvements that reduced operational and safety risks by utilizing the Area 5 de-inventory and just-in-time delivery initiatives, as indicated below:

- Safety basis modifications to allow H-Gear movement from both sites to the Highly Enriched Uranium Manufacturing Facility (HEUMF) were completed.
- De-inventorying of 9204-2 which significantly reduced the amount of material-at-risk and elimination of a Material Access Area was completed.
- A DSA change package that will allow Group 1, 2, and 3 materials to be relocated from processing facilities to HEUMF was submitted, creating a more efficient just-in-time delivery supply chain management process as well as reducing the overall site risk profile and improving overall public and worker safety.
- Test data to the DA that supported approval of the Life Certification Ovens and future downgrade of Beta 2 was submitted.
- The development of the Extended Life Program and an accompanying Safety Strategy which was recognized as a Best Practice by the Secretary of Energy.

Issues

CNS experienced some challenges throughout the year. Identification and reprioritizing funding challenged CNS throughout the year to support on-going operations (e.g., Seismic, Improvement Plans (DSA, Dispersion Modeling, USQ, and TSR) and Nuclear Criticality Safety).

CNS experienced issues during the repair of the floor in Building 12-98 as part of a High Pressure Fire Loop lead-in project. CNS did not provide adequate oversight that resulted in the subcontractor not following the specifications for the concrete pour. Once the issue was identified, CNS conducted additional testing of the concrete while performing engineering reviews. After receiving the concrete testing results, it was determined that the as-built conditions did not meet requirements resulting in a significant delay due to remediation of the repair work. In addition, the lack of recognition of the floor being safety class resulted in procurement/Design Change Proposal and USQ related shortfalls.

Early challenges on the W78 Tooling Improvement program (including programmatic priorities and resource challenges and Weapon Response) delayed the DSA package from being transmitted to NPO from the initial schedule date of March to August 2016. To mitigate the delays, CNS reassigned staff to support this work. The engineering team successfully completed the Nuclear Explosive Safety Study Change Evaluation (NCE) in September without any issues or findings. The project team was able to recover a significant amount of time in the schedule. The project is projected to finish in mid-October, about two weeks prior to the start of the next cycle.

Key Outcome 5.3

Accomplishments

CNS continues to demonstrate improvement in emergency preparedness. In particular, the Emergency Management (EM) program at Pantex has taken aggressive measures to improve using the Implementation Plan in response to the DNFSB Recommendation 2015-1, Emergency Preparedness and Response at the Pantex Plant, as a catalyst for making the program better. CNS is making progress at Pantex with its internal and external communications with off-site partners, and its refinement/development of processes and checklists for Emergency Response Cadre. CNS EM plans, procedures, guides and operator aids are being uniformly developed to ensure consistent implementation of requirements and leveraging best practices at both sites. Personnel across both sites have provided exercise support as exercise controllers and evaluators during 2016 drills and exercises. This approach provided comprehensive and effective evaluation for the exercise critique process at each site. EM technologies are also being integrated across the CNS enterprise to enable a common operational approach and shared situational awareness through the Emergency Management Information System.

Issues

The Pantex Emergency Management program is still working on addressing some longstanding problems to meet emergency management requirements and to demonstrate effective execution of the program. For example, CNS continues to leverage the best practices of the Y-12 emergency management program to that of the Pantex emergency management program in order to implement a drill and exercise program that is linked to

the bounding risk scenarios at the Pantex site. Issues management processes at Pantex remain a focus area for CNS who is actively working on corrective action plans to fix longstanding problems. A significant amount of work remains ahead to strengthen the EM program at Pantex, to include implementing the remainder of the Implementation Plan in response to the DNFSB recommendation and addressing approximately 55 findings from mostly past EM external assessment.

Key Outcome 5.4

Accomplishments

During FY16, the Quality Assurance Program has made significant strides from an overall program perspective. For example, the CNS Quality Assurance Strategic Plan (QA SP), which is aligned with the overall CNS Strategic Plan, was issued and provides the direction and actions for achieving performance excellence in executing Quality's mission. The QA SP focuses on improving and integrating current and new Quality processes across the CNS enterprise. In addition, CNS stood-up a Quality Council, and NNSA notes this will provide greater awareness of Quality risks and opportunities at the Executive Leadership Team level.

The CNS Director of Quality Operations positions have proven to be a best practice regarding NNSA having one QA point of contact given the depth and breadth of the program, having weekly communications of issues and their status, and the ability to share accomplishments and integrate across both sites supports performance excellence and transparency. NNSA meets weekly with the CNS Quality Director and his Directors of Quality Operations to discuss accomplishments and issues and maintains a SharePoint site for transparency with NNSA. NNSA is encouraged that the Quality organization stresses QA program integration and the use of best practices across the two sites as part of its continuous improvement. In addition, at the end of FY16, NNSA and CNS began monthly joint QA-related facility walk downs to ensure a strong understanding of QA work activities and challenges.

In May, CNS began briefing NNSA on the top risks to Quality. This is noted as a best practice. QA is engaged with Enterprise Risk Management to bring its top risks to forefront. A positive note is that CNS indicated that its Weapon Quality activities are the highest risks, with Supplier and Software Quality showing improvement. In addition, CNS maintains a "Top Initiatives for Quality" list and provides it to NPO each month. The use of the risk model and "Top Initiatives" provides NNSA confidence that CNS understands its issues and takes feedback from its own and NPO oversight for continuous improvement.

Issues:

Recurring issues with Incoming Material Reports (IMRs) have been noted and identified in the CNS PSA regarding incorrectly stamping parts (i.e., not placing the AR over the diamond, not directly stamping the parts with the Evaluation Use Only (EUO) stamp and leaving DA required information off the Pantex-1678 linen tag. These are all recurring issues and previous corrective actions have not been fully effective, and any new corrective actions have not been fully implemented. The stamping and marking issues specific to vendor packaging being diverted to LEP development processes remains an ongoing issue since

FY14. CNS has not yet established documented processes that are consistent and fully coordinated with other NNSA Sites to preclude errors. As a result of this issue not being resolved, development timelines are impacted in that receiving sites must determine whether the correct parts were shipped by engaging two NNSA sites (including Federal and Contractor personnel) to determine why CNS incorrectly marked the items prior to shipment. Rework is then required to get corrected marking accomplished prior to work being done at the receiving site.

A number of examples of Supplier QA program issues, also identified in the PSA, were noted this Fiscal Year, such as inadequate CTI drop tests; CTI mislabeling of containers; Skolnik testing for liquids; and an issue with an explosives supplier. In addition, NNSA issued a Supplier QA oversight report specific to Y-12 during this period and received corrective actions, where not all could be approved.

CNS Commercial Grade Dedication (CGD) process at Pantex continues to undergo a major improvement effort. NNSA noted examples this FY such as the HEPF and the tie-in to the HPFL; diesel fuel dedication; lack of proper classification of concrete; and the CGD package of HPFL lead-in work provide indicators that this program requires continued focus and monitoring following the closure of the KI.

Overall continued work is needed with the implementation of NQA-1 at Pantex. Examples include: oversight activities of construction projects; poor flow down; hold points and inspections not being documented; and less than adequate records.

NNSA noted several work control issues including: performing work on a stamped part without obtaining NNSA approval; Dimensional Inspectors unprepared to perform work in 9204-2 by not the bringing needed inspection forms; a lack of preparedness between organizations while NNSA was conducting the QAS-2 where NNSA was delayed in their weapon acceptance/stamping activities; and other delays as noted in QAS-4 reports this year (and previous years).

CNS experienced issues associated with Numerical Control Programming that required continued follow-up throughout the FY.

NNSA was concerned when two parts (Part A and Part B) had their batch cards mistakenly swapped which indicated a configuration management issue. Results of the investigation indicated that Part A (that had an identified casting flaw) was machined to completion as if it was Part B, and the real Part B was not further machined because the cards indicated it was tagged as non-conforming.

CNS continued to work corrective actions to address issues resulting from the NNSA QAS-1 (Management Commitment, periodic verification of weapon related design, and level of quality verification in development/review of operating procedures) and the JTA Systems Improvement Project (SIP). A key element of these corrective actions is staffing. As of the end of the FY, Pantex has filled 16 of 42 positions with 11 onboarded. The lack of staffing identified two years ago, remains a significant problem that affects CNS contractor

assurance activities and CNS's ability to remove compensatory measures as identified in the JTA SIP and CNS's own Weapon Quality Site Initiative put in place to avoid risks associated with failure to detect and prevent defects that could delay work, require rework, or result in an escape.

Nonconformance Reports (NCRs) pertaining to the Skolnik drums were closed without notification to QA. This communication issue should be corrected via the re-engineering of the NCR process across CNS. NNSA is concerned that CNS removed the QA conditionally-approved tags despite the Standing Order still being in effect. Metrics shows NCRs open over 180 days are trending up at Y-12. Continued focus is needed to address these older NCRs. There are no metrics on Performance Track specific to NCRs at Pantex, only for vendor performance, which is trending down for the year.

The CNS QAPD was approved with conditions on December 18, 2015, but did not go into effect until March 2016. When the site specific QAPDs were canceled, CNS did not realize that the Pantex Packaging and Transportation activities did not have a separately approved QAPD like Y-12, and, therefore, had to issue a Standing Order to ensure Pantex P&T could use the Pantex-specific QAPD until a new Pantex P&T QAPD could be approved by the NNSA Certifying Official at Headquarters. The lack of coordination resulted in the use of multiple QAPDs at Pantex.

CNS transferred two W78 star-stamped (NNSA accepted product) Joint Interface Lab Test units instead of shipping to their intended destination. The Production Technician and the Production Section Manager displayed a questioning attitude, but were overruled by the Weapons Evaluation Test Laboratory (WETL) Planner resulting in the wrong items being sent to WETL. Upon arrival, WETL personnel removed the banding, invalidating the star stamp which required rework. Based on NPO's follow-up, CNS QA was not notified for three weeks. NPO was briefed on the corrective actions and noted that engineered controls would replace administrative controls.

Specific to a testing failure of a 35-account tape adhesion to steel test, CNS discovered that the test data was not evaluated in accordance with the ASTM standards in that the data maximum was being reported and compared to the specification for acceptance rather than the average The methodology being used to obtain data for the appropriate length of material was inadequate and there was no software quality assurance (SQA) documentation associated with the testing equipment. CNS took action to re-verify each lot of material to ensure the correct standards were being met and conducted a Management Assessment, which resulted in one finding; two weaknesses; and nine observations. In addition, at Y-12, an issue was discovered by NNSA with regard to a Test Cart with specific issues noted with the implementation of NQA-1 requirements due to lack of procedures and work instructions. Subsequent to the initial discovery issues were raised regarding the lack of SQA documentation for the Test Cart.

Of serious concern and noted under PO-1, a wrong serial number was stenciled on a nuclear explosive and its shipping container. CNS QA reviewed the associated paperwork and accepted the unit with a Star Stamp, indicating it was ready for shipment to the customer. A

Radiation Technician found the error and reported the situation. A critique and CA/MP were conducted and enhanced oversight was enacted by NNSA until CNS put the corrective actions in place which involve updating procedures to ensure a step is included to verify the stenciled number is actually correct. In the interim, CNS is validating the stencils back to the pink cards/calling the production bay prior to cutting stencils.

A QAS-3 related to Document Control was conducted at Pantex in late FY16 and resulted in a finding specific elevating concern of a potential systemic issue regarding the control of documents. The corrective actions and extent of condition review will be expected in early FY17.

Key Outcome 5.5

Accomplishments

CNS greatly improved general housekeeping and material management. A key component of this is dispositioning excess, unneeded material. The SPACE initiative recovered a total of 19,634 items from ad hoc storage locations and added them to the Materials Management Program which resulted in $3.8M in available parts returned to stock and overall stores inventory value of $5.7M. Additionally, CNS identified $4.3M in non-essential material/supplies/equipment leading to a leaner program and reducing the overall cost of carrying inventory. CNS has completed 44% (124 of 273) of the container disposition resulting in a reduction of the referenced ad hoc storage and advancing the site stewardship goals. Finally, CNS reduced service component selection and delivery to manufacturing times from 48 to 34 hours, greatly increasing efficiency.

Issues

None

Goal 6: Leadership, 10%

Under this goal, CNS earned a rating of Very Good and 77% of the award fee allocation. CNS exceeded many of the Objectives and Key Outcomes, and has met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. No significant issues exist. The performance level is evidenced by accomplishments that greatly outweigh issues. CNS's performance under this goal is described below.

Overall, NNSA believes there has been an awakening by both the CNS Executive Leadership Team and the NNSA with respect to performance at both sites. The combination of new structure, "new eyes," and both higher as well as clearer performance expectations has exposed leadership and management opportunities. The unique cultures of two geographically and historically separated populations presented unique challenges. A challenge noted by NNSA is communication between and within CNS organizations is not optimal, and had caused duplicative or misunderstood intentions, guidance, and inconsistent positions from CNS. Since the change in CNS executive management, a new focus on mission performance and enterprise engagement has taken hold. CNS launched on a new path to improve and address all aspects of the sites, operations, and populations in February. Progress has been steady, measurable, and gaining momentum. Communication of guidance and decisions, as well as the strategic approach, has not seen equivalent progress. While leadership challenges remain, the CNS team has put the right organization and leaders in place to advance the NNSA mission.

Objective-6.1

Accomplishments

The CNS and NNSA leadership teams met to collectively invest focused time and energy on exploring how to best leverage the teaming and relationships of the two organizations so that the teams may achieve the over-arching goals in support of the NSE. The overall goal of the meeting was to build an enduring foundation for successfully executing the NSE mission for years to come.

Issues

None

Objective-6.2

Accomplishments

CNS implemented an executive-level PEMP feedback meeting with NNSA to improve the transparency between the two organizations. CNS has also invited NNSA to observe the monthly CNS Organizational Health Review, which also increased transparency. NNSA has found both exchanges to be useful and is encouraged by the utilization of Enterprise Risk Management in the discussions.

CNS developed a well-thought-out strategic plan and began to disseminate this plan throughout the organization. CNS has also made significant strides in efforts focusing on the long-term modernization of the sites to include line item projects dealing with critical

infrastructure needs. These modernization efforts include pursuing a new Administrative Support Complex at Pantex through a public/private partnership; collaborating with numerous stakeholders in developing excess facilities plans to support funding for demolition of excess facilities; implementing HQ initiatives such as BUILDER; and leading a pilot project for a Geographical Information System designed to enhance information integration across the NSE.

CNS has improved manufacturing techniques through a reinvigorated Plant Directed Research and Development Program. Additive Manufacturing at both facilities has been advanced by working jointly with academia and the private sector. The SPP has seen significant increase, and there is active pursuit of technology transfer opportunities.

CNS continued to view operations and the ability to deliver on the mission through a different lens in order to innovate sustainable solutions.

Issues

CNS must continue to focus on corrective actions and being responsive to NNSA in a timely manner (e.g., Management Concerns and organization specific corrective actions). In the area of cyber security, CNS has recently recruited two strong leaders who have assessed the degradation of conditions within the program. However, cyber security continues to experience attrition, and no plan for program improvement is in place. Given the lapses in maintaining certain protective measures, the NNSA Authorizing Official has revoked the CNS risk management framework approval during this rating period. CNS is now required to seek NNSA approval prior to making any changes that might impact cyber security and the Y-12 and Pantex networks. CNS has self-identified the fact that metrics are not centrally located and do not provide a full range perspective on performance. As a result, CNS has developed a steering committee to focus on improvement.

CNS issued a new Enterprise Level Contractor Assurance System (CAS) Program Description (CD-0030) without recognizing the potential impacts to the UPF Project. CNS continues to struggle with implementing an effective CAS.

Defense Programs' expectations for CNS in leading the integration and prioritization of infrastructure investments between Y-12 and Pantex were not met. Instead of continuing to develop site-specific investment requests, it is expected that CNS senior leadership will submit lists that are coordinated and prioritized across the enterprise.

Objective-6.3

Accomplishments

CNS worked within the NNSA Enterprise to develop and implement innovative business solutions to improve performance. To integrate enhanced Nuclear Security Enterprise scheduling, CNS developed and implemented the Enterprise Logistics Management System, an electronic system for planning, scheduling, and shipping weapon drum-type containers. The system has reduced shipping authorization time by 90%; improved accuracy in inventories and planning; and yielded a reduction in container recertification time. CNS provided support to Nuclear Criticality Safety (NCS) and Facility Safety. CNS performed an

external evaluation of the Livermore Program and provided an expert for the DOE-program review of National Critical Experiment Research Center training. Finally, the CNS Knowledge Preservation Management (KPM) system, which enables the remote viewing of product maintenance and inspection activities, has earned Center of Excellence recognition by NNSA and was shared with LANL and the U.S. Navy. To improve the NNSA Weapon Response enterprise, CNS and SNL agreed to initiate a weapon response intern program. SNL staff will learn about Pantex production operations (e.g., Safety Basis/TSR development) while CNS staff will learn how weapon responses are developed (e.g., component testing).

CNS exceeded expectations for coordinating schedule reviews with SNL and LANL to ensure all process and assembly activities would meet the scheduled FPU date. CNS reviewed schedules with KCNSC to enable hardware delivery schedules to meet the FPU date, and led work with LANL to ensure that each party would be able to meet requirements for NDLGS equipment. CNS exceeded expectations for being extremely responsive to program requirements, actions, and plans.

Issues

At the end of September 2016, about halfway through the EVMS Pilot Project schedule, the CNS corporate EVMS Organization's oversight of the UPF project's participation in the pilot project is inadequate. The UPF project has not adopted the CNS corporate EVMS Systems Description and its requirements into the UPF project's procedures and project implementation. Until the UPF project's implementation is in compliance with the System Description and the CNS corporate EVMS Organization displays an ability to self-govern by correcting the UPF implementation and compliance with the System Description, the DOE-PM certification team's ability to certify the CNS EVMS system is in jeopardy.

CNS issued a new Enterprise Level CAS Program Description (CD-0030) without recognizing the UPF Project. UPF has its own CAS implementation and activities that require formal documentation since they are different from the plant's implementation. If CNS had intended UPF to comply with the CAS as originally issued, significant and costly change would have been experienced on UPF. Eventually CNS issued a Supplemental CAS for the UPF project after UPO identified the gap.

CNS has not realized Defense Programs' expectations for leading the integration and prioritization of infrastructure investments between both sites. CNS continues to develop site-specific requests for future investments, and we have not seen CNS senior leadership provide options to help prioritize between the two sites.

Objective-6.4

Accomplishments

CNS brought in personnel from LANL to discuss the Electrical Maintenance event with Power Operations personnel. This visit and information sharing proved to be beneficial to all parties and will serve to improve safety throughout the complex. Collaboration like this shows the ability to pursue a continuous learning environment internally, as well as externally, to CNS.

CNS continues to pursue academic partnership in the area of Systems Engineering (i.e., Masters' Program) and continues to foster Fire Protection graduate opportunities. CNS is also collaborating with the University of Tennessee Medical Center to leverage opportunities for simulation training. CNS is pursuing a unique Certificate of Basic Machining course, as well as a Masters level certificate program to enhance the education of global security specialists.

CNS has developed and deployed Relational- and Performance-Based Leadership (RBL and PBL) courses. The forty-hour RBL is taught with a reflective teaching approach that is highly effective in learning transfer and very engaging to the students. CNS has piloted a new forty-hour Fundamentals of Performance Excellence workshop. It focuses on the CNS foundational principles of operation and supervisor roles in fostering a high-performance learning organization. The Chief Executive Officer demonstrates key leadership support for this initiative by teaching the first half day of the course. This sends a powerful message of the importance of Performance Excellence.

CNS has continued to support the NNSA Enterprise with hosting the Quality Forum at Pantex.

Issues
None

Key Outcome 6.1
Accomplishments
None

Issues
None

Key Outcome 6.2
Accomplishments
Housekeeping in the production areas at both plants continues to improve, most notably in 9215 DU; 9215 EU; 9204-2 equipment storage, 9204-2E first floor; the 9212 E Wing basement west end; the removal of erector sets, coolant trays, and O-wing trash in the 9215 EU; and in the Pantex MAA ramps and tooling warehouse. CNS commitment toward housekeeping is still needed in E-wing basement, as well as O-wing. Better coordination is needed between Radiological Control Stewardship Program and Clean Sweep in order to integrate and prioritize this work where possible.

CNS addressed an increase in personnel injuries through the implementation of a Site Wide Safety Pause. This Safety Pause included briefings on injuries and recommendations for avoidance. Increased awareness programs and additional engineering controls have decreased the motor vehicle incident rates.

The 9995 Analytical Chemistry Laboratory successfully maintained its certifications and continued to support the mission despite daily equipment challenges. CNS completed a

radiochemistry hood replacement project, installed a new transformer, completed HVAC upgrades, and purchased a new Thermal Ionization Mass Spectrometer. After three months of unsuccessful troubleshooting of the purchased mass spectrometer, CNS chose to return the majority of the equipment and obtain a replacement from the vendor. Strategic organizational changes and analysis of alternative options for the future state of the 9995 facility were executed well and routinely communicated with NNSA.

Improvements to facility conditions in several areas were noted by NNSA, including the 9204-2 Oven Room Ceiling Spallation Remediation, the 9206 Transformer Replacement Project, and the 9204-2/2E 50-Year Fire Sprinkler Replacement.

CNS, along with NNSA, visited the Alliant Techsystems (ATK) site in Utah to learn more about their Performance Excellence Culture in order to take away best practices. Benchmarking is a valuable tool in obtaining possible improvements that could be implemented. CNS brought ATK Performance Excellence Strategy (PES) training to the sites to promote the PES process and is implementing three pilot PES projects at each site. PES training has been provided to more than 300 managers, employees, and partners. Initial results from the six pilots have been positive, and included a 30 minute reduction in medical physicals; a 33 hour reduction in special nuclear material move authorization paperwork cycle time; and a reduction of sample delivery time from approximately 6.5 days to 4 hours.

Issues

CNS recognizes that its development of a Performance Excellence Culture is maturing but is in the early stages of implementation. More time and effort are needed to demonstrate performance at the floor level with quantitative metrics. This assessment is consistent with NNSA's position. There are a number of ongoing contractor initiatives (e.g. bench-marking other companies performance, extent of condition review process, housekeeping improvements, site stewardship improvements, abnormal event investigation process, single Conduct of Operations enterprise manual, etc.) that are designed to enhance the performance excellence culture. As noted in other sections of this report, and despite a number of CNS culture improvement initiatives, success has not always translated to performance excellence at the floor level (e.g. compliance of technical safety requirements, improper radiological work practices, inadequate lock-out/tag-out work practices, worker injuries, inadequate conduct of operations work practice, overload sample containers, etc.). Updates to the Performance Excellence plan should continue and should include information such as rationale for changes, analysis of performance metrics associated with actions, and an analysis of whether these actions were contributing to improved floor level performance. CNS recognizes that communication with NNSA needs to occur in order to ensure transparency and that all parties must have insight to the actions being taken to improve the performance excellence culture.

CNS has reported that its safety culture approach is being integrated into its performance excellence strategy. There are a number of contractor safety culture related initiatives (e.g. nuclear safety advocates, management briefings on the 2015 safety culture survey results, safety culture monitoring panel, safety culture review, etc.) being implemented. While there have been recent CNS efforts to develop an enterprise approach to safety culture, the

integration of the CNS enterprise safety culture approach as an element to the performance excellence culture is also in its infancy stages. In addition to developing this enterprise strategy, CNS must develop and implement a strategy for addressing the 2015 safety survey results, including actions taken, metrics for measuring these actions, and metrics for measuring performance excellence success at the floor level. It is expected that CNS will include these updates in future performance excellence briefings.

CNS continues to have a CAS Program in its initial stages, although improvement has occurred. Examples of this are highlighted in the CNS self-assessment for this reporting period and include the Enterprise Assessment Program lacking an efficient and self-critical assessment program, as well as not having any performance metrics in place for this area. CNS needs improvement in performance metrics with respect to QA supplier performance and metrics for Human Resources Talent Management. As another example, CNS Cyber Security leadership denoted the need to significantly decrease the number of self-assessment activities as a result of attrition and resource availability. While NNSA agrees and understands the rationale as to the decreased number of assessments, an effective, critical contractor self-assessment process is a significant component to an effective M&O contract model. Overall, the CNS Cyber Security Program continues to experience attrition of key personnel and demonstrate declining performance in meeting core expectations. While CNS management is executing a number of activities in an attempt to address these issues, the actions fail to demonstrate effectiveness.

A longstanding management emphasis area is security culture across the two sites. To address this area, CNS established an initiative to strive for operational excellence and is piloting the approach at this time. CNS has focused on activities to build a performance culture over a period of time but have not taken actions that would have more immediate results. They have recently started 40-hour training of their employees teaching performance excellence principles. The Chief Executive Officer has been personally engaged in teaching these classes. Within the security program, Pantex has taken aggressive steps to discuss vision, mission, values and leadership topics with uniformed and non-uniformed security employees. This initiative has reinforced the importance of the security mission at Pantex within the CNS security organization. Continued management emphasis is needed on strengthening the security culture at both sites.

CNS has continued to have events that indicate a less than mature performance excellence culture. Examples include procedural adherence issues, less than adequate attention to detail, work performed without appropriate work packages and authorization, operations in unapproved configuration, less than adequate hazard controls, equipment condition issues, and an over reliance on compensatory measures. The Accident Investigation performed by CNS on the injury from falling in a steam pit identified nine missed opportunities to perform work at the requisite level of rigor. During the rating period, CNS experienced two Technical Safety Requirement violations as a result of personnel responsible for nuclear safety failing to recognize and maintain required controls. CNS also suffered a significant quality issue with regard to the testing of 35-account tape at Pantex. This issue was self-identified, and CNS responded resiliently with a systematic approach to recover, but the event shut down all nuclear explosive operations at the plant for nine days.

CNS needs to continue to maintain transparency with NNSA and establish short and long-term performance metrics for a number of its key performance excellence initiatives (e.g. performance excellence strategy, PES pilot programs, safety culture monitoring panel, etc.) Also, the 9206 Roof Repairs continue to be an issue, with repeated Criticality Safety Back offs experienced in early FY16.