



National Nuclear Security
Administration

National Technology and
Engineering Solutions of
Sandia, LLC

Performance Evaluation
Report

NNSA Sandia Field Office

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

December 15, 2023

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

This Performance Evaluation Report (PER) provides the National Nuclear Security Administration (NNSA) assessment of the National Technology and Engineering Solutions of Sandia, LLC (NTESS) performance of the contract requirements for the period of October 1, 2022, through September 30, 2023, as evaluated against the goals defined in the Performance Evaluation and Measurement Plan (PEMP).

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

In accordance with the regulation, the PER assesses NTESS’ performance against the PEMP and provides the basis for determining the amount of award fee earned by NTESS. NNSA took into consideration all inputs provided (e.g., contractor assurance system, program reviews) from NTESS and NNSA Program and Functional Offices both at Headquarters and in the field.

NTESS earned an overall rating of Excellent and 91 percent of the award fee during this performance period. NTESS earned an Excellent rating for Goals 2, 3, and 5 and Very Good for Goals 1 and 4.

NTESS effectively supported multiple weapon modernization programs by delivering numerous weapon components and systems, representing the largest and most complex design, development, and qualification work scope in recent years. NTESS completed the W80-4 Pre-Production Engineering Gate review, garnering NNSA authorization to proceed into Phase 6.4. NTESS supported the W87-1 program entry into Phase 6.3 and completed the W87-1 Conceptual Design Review. NTESS completed the Cycle 28 Annual Assessment to ensure confidence in the reliability and safety of the stockpile. NTESS completed the W88 Alteration (ALT) 940 program Qualification Engineering Release (QER), delivered the First Production Unit (FPU) one month early, and demonstrated proactive technical and programmatic leadership of cable production. NTESS increased production output of War Reserve components while meeting all Limited Life Component commitments. NTESS did not meet cost, schedule, and technical performance baseline requirements of the Mobile Guardian Transporter. NTESS also experienced issues with the Joint Test Assembly development programs and missed key intermediate deliverables for the W87-1 program.

In the global nuclear security mission area, NTESS provided key support to several cesium irradiator replacement projects and international irradiator replacements, exceeding the NNSA Defense Nuclear Nonproliferation 2-Year Goal. NTESS demonstrated outstanding project leadership of the multi-lab Priority Research Objectives for the Arms Control Technology Innovation, Verification, and Evaluation venture and arms control testbed. NTESS led the implementation of the Quality Assurance activities for the U.S. High Performance Research

Reactor Project and criticality analyses for the Surplus Plutonium Disposition program. NTESS completed nonproliferation focused track II initiatives with the Middle East, including the Arms Control and Regional Security Working Group. NTESS supported the Nuclear Emergency Support Team (NEST) missions and response to Russia's War on Ukraine. NTESS contributed to the successful launch of the Global Positioning System (GPS) III-06 space vehicle with the Global Burst Detector (GBD) III payload and transition of operations to the U.S. Space Force.

NTESS achieved major technical advances in science, technology, and engineering through its Laboratory Directed Research and Development (LDRD) program that directly supported Department of Energy (DOE)/NNSA mission priorities. NTESS advanced the hypersonic weapon development program by supporting multiple flight tests, undertaking additional unplanned work scope, and developing very low-cost glide body concepts. NTESS completed final design qualification testing of major components for the Mk21 Arming and Fuzing Assembly (AFA) and exceeded expectations in the final engineering analysis phase by increasing schedule margin. NTESS supported Consolidated Nuclear Security, LLC (CNS) in the Flight Test Unit 4 (FTU4) build process and Honeywell Federal Manufacturing and Technologies, LLC (FM&T) in the early delivery of the FTU4 AFA to meet a critical flight test schedule for the United States Air Force (USAF). NTESS delivered pioneering technology transfer capabilities in partnership with other national laboratories, industry, and academia. NTESS leveraged expertise in earth sciences to provide geotechnical analysis, rapid modeling, and optimization solutions for the DOE Strategic Petroleum Reserve program. NTESS also used its expertise and capabilities to support other federal agencies in the development and deployment of technical solutions for critical national security missions.

NTESS effectively and efficiently managed the safe and secure operations of the Sandia National Laboratories while maintaining an Enterprise-wide focus. NTESS proactively prepared for future stockpile mission needs by achieving the restart of the Annular Core Research Reactor (ACRR) Neutron Radiography Facility operations after almost a decade of being unavailable due to a lack of mission need. NTESS completed the first experiments in over 20 years using safety-class credited containment at the ACRR, advancing scientific knowledge of fissile material properties in support of mission operations. Both DOE and NNSA recognized NTESS for supporting the development and growth of small businesses through the Mentor Protégé Program. NTESS contributed to the Advanced Sources and Detectors (ASD) project Critical Decision (CD)-2/3 approval and consolidation of the digitizer procurement, achieving significant cost savings. NTESS successfully completed the Emergency Operations Center (EOC) construction within cost and schedule. NTESS did not consistently address identified deficiencies across all minor construction and Asset Management Program projects, resulting in increased costs. NTESS experienced issues with the West End Protected Area Reduction (WEPAR) project, resulting in substantial cost increases and schedule delays.

NTESS displayed exceptional leadership in cultivating a performance excellence culture and improving responsiveness to issues and opportunities for continuous improvement internally and across the Nuclear Security Enterprise. NTESS completed the Enhanced Mission Delivery Initiative (EMDI) M&O Authorizing Official Designated Representative (AODR) Pilot Project that demonstrated enhanced NNSA/NTESS cybersecurity collaboration, enabling NNSA to implement the concept across the sites. NTESS led the way in unlocking latent capacity by

implementing a performance excellence culture program known as Unleash Excellence, generating 35 improvement projects that reduced costs and labor hours. NTESS demonstrated initiative by leading the enterprise in Digital Transformation and planning for the implementation of Agile for the W93 program. NTESS helped jumpstart the DOE Data Analytics Working Group's efforts in developing the Enterprise Data Analytics Framework by providing key data analytics insights. NTESS implemented a multi-year People & Culture Strategy to increase hiring and retention, yielding positive improvements by increasing promotion opportunities and expanding university education programs to further develop critical skillset talent pools.

Goal 1: Mission Delivery: Nuclear Weapons

NTESS Amount of At-Risk Fee Allocation: \$3,825,546

Under this goal, NTESS earned a rating of Very Good, and 87 percent of the award fee allocated to this goal. NTESS achieved many accomplishments that greatly outweighed performance issues. NTESS generally met performance expectations within expected cost.

Accomplishments

NTESS effectively supported multiple weapon modernization programs by delivering numerous weapon components and systems, representing the largest and most complex design, development, and qualification work scope in recent years.

In partnership with Triad National Security, LLC (Triad) and CNS, NTESS completed the Nuclear Explosive Safety Change Evaluation for the Intent Stronglink.

NTESS completed the W80-4 Pre-Production Engineering Gate review, garnering NNSA authorization to proceed into Phase 6.4, Production Engineering. Furthermore, NTESS built and delivered critical components to complete a series of system-level tests to include mechanical, thermal, electromagnetic, and electrostatic discharge environments with full functional hardware configurations.

NTESS supported the W87-1 program entry into Phase 6.3 and completed the W87-1 Conceptual Design Review.

NTESS demonstrated proactive leadership in planning and execution of the W93/Mk7 high-risk mitigation plan to maintain critical testing capabilities. NTESS collaborated with Triad to narrow the scope of the surety architecture studies. In coordination with Triad and defense industry partners, NTESS helped define weapon specifications during the Customer Requirements Exchange and Department of Defense (DoD) requirements reviews.

NTESS successfully completed the Cycle 28 Annual Assessment to ensure confidence in the reliability and safety of the stockpile, which included completion of all required surveillance testing and evaluations.

For the W88 ALT 940 program, NTESS completed the QER, delivered the FPU one month early, and demonstrated proactive technical and programmatic leadership of cable production. NTESS efforts resulted in significant cost savings and increased production output for the program. NTESS also completed the QER and achieved FPU for the Multi-application Transportation Attachment Device.

NTESS provided excellent W88 ALT 370 design and production support to CNS and FM&T for the rapid resolution of emerging technical issues.

While meeting all Limited Life Component commitments, NTESS increased production output of War Reserve components by 13.7 percent compared to fiscal year (FY) 2022. NTESS also delivered many components ahead of schedule and realized significant cost savings to multiple modernization programs.

NTESS successfully instituted Design for Manufacturing and Assembly capabilities for machined parts and printed wiring boards, mitigating the risk of microelectronics packaging issues and improving the Independent Cost Estimate review process that significantly reduced carryover funding.

NTESS exceeded expectations by developing a management tool to identify Polyfluorinated Substances industrial demand issues and conducting product substitute research.

NTESS successfully completed significant capability recapitalization projects, reducing risks to modernization programs and stockpile sustainment.

NTESS exceeded expectations in the delivery of the technical report on the non-ballistic Next Generation Reentry Vehicle (NGRV). NTESS established a novel framework to support implementation of design-for-manufacturing during Phase 1 activities. NTESS also provided briefings to NNSA and DoD leadership on the NGRV, W93 reference warhead designs, and Hard and Deeply Buried Targets warhead designs.

NTESS successfully implemented an equatorial line-of-sight capability for the Z Machine, contributing to a multi-year effort to enable a new class of high-energy-density diagnostics. NTESS also completed two plutonium Z Machine experiments that directly supported technical decision-making to enhance pit production capabilities.

NTESS advanced the development of critical cybersecurity and digital assurance capabilities as part of the Nuclear Enterprise Assurance (NEA) program to reduce adversarial risks to the nuclear weapons stockpile and production process. NTESS established a formal NEA program and implemented a Threat Model Development and Risk Management Framework for nuclear weapon systems.

Issues

NTESS did not meet overall cost, schedule, and technical performance baseline requirements of the Mobile Guardian Transporter.

NTESS missed key intermediate deliverables for the W87-1 program and experienced technical challenges in component development, resulting in a missed FY 2023 Program Milestone and increased schedule risk.

NTESS experienced issues with Joint Test Assembly development programs and as a result could not meet performance, cost, and schedule objectives for the W76, W78, and W87-0.

Goal 2: Mission Delivery: Global Nuclear Security
NTESS Amount of At-Risk Fee Allocation: \$956,386

Under this goal, NTESS earned a rating of Excellent, and 95 percent of the award fee allocated to this goal. NTESS achieved many accomplishments that significantly outweighed performance issues. NTESS generally met performance expectations within expected cost and with no significant issues.

Accomplishments

NTESS provided international nuclear and radiological security support, including improving capabilities in the areas of physical protection, countering uncrewed aerial systems, radiation detection, communication/networking technologies, and equipment testing for international counter nuclear smuggling operations. NTESS successfully led planning for major events, including the annual International Atomic Energy Agency International Training Course on physical protection and the International Radiological Dispersal Device Workshop. NTESS conducted the first in-person engagement with several bilateral partners in priority regions. NTESS continued to provide key support for the cesium irradiator replacement projects and international irradiator replacements, exceeding the NNSA Defense Nuclear Nonproliferation 2-Year Goal and achieving significant progress on removing all cesium blood irradiators in the Nation. NTESS conducted outreach engagements with new partner organizations and developed strategies to continue progress toward the elimination of cesium-based irradiators.

NTESS exceeded performance expectations in advancing capabilities in support of U.S. nuclear nonproliferation and security goals. NTESS demonstrated outstanding project leadership of the multi-lab Priority Research Objectives for the Arms Control Technology Innovation, Verification and Evaluation venture and arms control testbed. NTESS succeeded in advancing arms control monitoring and verification research and development (R&D) in numerous research and field projects, all of which were crucial to maintaining capability and agility in a changing threat environment. Several examples include the passive multi-kilometer detection of ionizing radiation, low-cost distributed sensor array prototype for nuclear burst detection, and electric-field sensor technology addressing a decade-long shortfall in emergency response community capability.

NTESS provided excellent support by leading the implementation of the Quality Assurance activities for the U.S. High Performance Research Reactor Project and criticality analyses for the Surplus Plutonium Disposition program. NTESS fielded and implemented improvements to the Transport Remotely Monitored Sealing Array system, which provides continuity of knowledge for shipments of downblended surplus plutonium. NTESS supported the shift to weekly

shipments to the Waste Isolation Pilot Plant, achieving progress toward the FY 2023 NNSA Integrated Strategic Priority (Surplus Plutonium Disposition).

NTESS successfully completed nonproliferation focused track II initiatives with the Middle East, including the Arms Control and Regional Security Working Group, which informs interagency partners on perceptions, critical issues, and opportunities for future engagements. NTESS provided excellent cross-cutting analytical products and studies, which included landscape studies of the Middle East, North Africa, and Sub-Saharan African regions. NTESS provided tools to global partners in arms control and advanced reactor safeguards, enhancing inspections and physical security.

NTESS provided excellent support for the planning and implementation of several international and domestic engagements on behalf of the Office of Nuclear Export Controls' International Nonproliferation Export Control Program, resulting in the adoption of recommendations by partner countries.

NTESS effectively supported the NEST missions to include the response to Russia's War on Ukraine. NTESS provided expertise and input to the development of tools, techniques, policies, and procedures to ensure a robust response capability for Nuclear Forensics Operations. NTESS successfully maintained operational readiness of a nuclear forensics deployable team in support of pre-detonation device response and participated in operational exercises and training events.

As the system integrator for the GBD III payload, NTESS supported the launch of the GPS III-06 space vehicle and contributed to the successful transition of operations to the U.S. Space Force. Additionally, NTESS achieved progress toward the delivery of the next generation GBD IIIF payload, completing the initial radiation hardness and environmental testing of the Hyper-Temporal Sensor Focal Plane Array. NTESS successfully completed the System Verification Review of the GBD IIIF Burst Detector Analysis subsystem.

NTESS coordinated with NNSA and Tri-Lab representatives in the development and delivery of the Weapons of Mass Destruction (WMD) Device Defeat Strategic Plan. NTESS updated, built, and deployed additional NEST autonomous sensor networks in the U.S. European Command for rapid data assessment and notification. NTESS effectively supported Nuclear Threat Science counter proliferation priorities by participating in two program reviews and publishing two sets of products for use by mission partners and technical staff. NTESS completed eleven experiments characterizing various data regimes of materials of interest, which was essential to keeping pace with the everchanging threat landscape. NTESS continued to successfully conduct WMD counterterrorism capacity building training.

Goal 3: Mission Innovation: Advancing Science and Technology

NTESS Amount of At-Risk Fee Allocation: \$1,434,580

Under this goal, NTESS earned a rating of Excellent, and 100 percent of the award fee allocated to this goal. NTESS achieved many accomplishments that significantly outweighed performance issues. NTESS generally met performance expectations within expected cost and with no significant issues.

Accomplishments

NTESS executed a comprehensive research strategy that enabled the advancement of science, technology, and engineering. In alignment with its research strategy, NTESS made key discretionary investments in LDRD that directly supported DOE/NNSA mission priorities. For the first time since the inception of the DOE LDRD Program, NTESS successfully collaborated with Triad and Lawrence Livermore National Security, LLC to implement a new Interlaboratory LDRD pilot program that builds synergistic capabilities focused on national security challenges. In addition, the LDRD Grand Challenge projects have proven to be impactful and transformative, setting new development directions and creating new technical capabilities that have provided enduring benefits to the Nation.

NTESS conducted transformational research inspired by the various national security missions of DOE/NNSA. For example, NTESS developed a high-throughput machine learning optimization strategy to rapidly optimize an alloy baselined for stockpile production. NTESS integrated a radiation-resilient prototype cognitive computing electrical module into the Low Earth Orbiting Nanosatellite Defense Autonomous System and Advanced STARCS Technology for Resilience ISS Demonstration missions on the International Space Station to collect earth background data for the NNSA Global Burst Detector treaty monitoring mission.

NTESS R&D teams successfully delivered leading-edge advances in science and engineering that have proven useful for national security applications. For example, NTESS demonstrated the capability to dynamically steer light pulses from conventional sources, enabling the replacement of power consuming laser beams in several technologies, such as remote sensors and high-speed communications.

NTESS maintained a healthy and vibrant research environment that enhanced technical workforce competencies and research capabilities as evidenced by earning 6 R&D 100 Awards. NTESS' exceptional commitment to R&D resulted in 40 nonprovisional patents, 22 copyrights, and 113 technical advances. NTESS university partnerships have yielded increased numbers of intern and post-doctoral positions, strengthening critical skills in the areas of cybersecurity, advanced manufacturing, and microelectronic manufacturing.

NTESS conducted Strategic Partnership Projects (SPP) work activities that directly supported the nuclear deterrence mission. For example, NTESS completed final design qualification testing of major components for, and the assembly of, the Mk21 AFA. NTESS exceeded expectations in the final engineering analysis phase by increasing schedule margin. NTESS further supported CNS in the FTU4 build process and FM&T in the early delivery of the FTU4 AFA to meet a critical flight test schedule for the USAF.¹

NTESS used its expertise and capabilities to support other federal agencies in the development of both system and subsystem designs that provide solutions to critical national security challenges. For the hypersonic weapon development program, NTESS supported multiple flight tests, undertook additional unplanned work scope, developed very low-cost glide body concepts, and

¹ This SPP accomplishment was not considered for the Goal 3 Award Fee determination because the Contract has a separate SPP Fixed Fee.

responded to emerging and non-traditional threats with radar system designs. In support of space programs, NTESS achieved operational status of its state-of-the-art sensor systems. For enhanced security applications, NTESS successfully installed the Disablement Management System modifications across multiple sites.²

NTESS effectively supported the Department of Homeland Security with specialized expertise and technical solutions. For the Cybersecurity and Infrastructure Security Agency (CISA), NTESS developed innovative incident-response capabilities that provide critical cybersecurity threat solutions for various government agencies. NTESS successfully co-drafted a CISA strategy and action plan for artificial intelligence security and supported the briefing to Congress. For the Transportation Security Administration, NTESS successfully delivered an open-architecture aviation security solution to enable a new screening platform with rapid threat mitigation capabilities to address evolving aviation security threats.³

NTESS continued to deliver pioneering technology transfer capabilities in partnership with other national laboratories, industry, and academia. The Federal Laboratory Consortium for Technology Transfer recognized NTESS with the Interagency Award for Hypersonic Glide Body Transition to Production. NTESS received an Economic Development Administration grant for a collaborative project between Sandia National Laboratories (SNL and the Arrowhead Center at New Mexico State University to address barriers to commercialization for women entrepreneurs working with DOE on technology transfer projects. NTESS successfully transferred numerous technologies through government use notices, commercial and non-commercial licenses, and various non-federal entity and cooperative research and development agreements.

NTESS supported numerous DOE-sponsored applied energy security, climate security, and science programs that resulted in key technological advances. For example, NTESS coupled the Simple Cloud-Resolving Energy Exascale Earth System Model Atmosphere Model with the Frontier code to enhance the treatment of clouds in multiyear climate simulations, leading to more accurate model predictions for climate security endeavors. NTESS leveraged its expertise in earth sciences to provide geotechnical analysis, rapid modeling, and optimization solutions for the DOE Strategic Petroleum Reserve program. NTESS provided critical data and information to inform DOE policy decisions for the sustainment of the national petroleum reserves, management of crude oil inventory, and optimization of crude oil releases to preserve cavern integrity and viability as a national security asset.

NTESS achieved a new current density record with a gallium nitride metal-oxide-semiconductor field-effect transistor prototype to enable higher power density in electrical systems. This breakthrough will enable higher power density and higher voltage power switching capabilities for applications in electric vehicle powertrains, converting direct current power from the battery to alternating current power for the electric motor.

² This SPP accomplishment was not considered for the Goal 3 Award Fee determination because the Contract has a separate SPP Fixed Fee.

³ This SPP accomplishment was not considered for the Goal 3 Award Fee determination because the Contract has a separate SPP Fixed Fee.

Goal 4: Mission Enablement

NTESS Amount of At-Risk Fee Allocation: \$1,912,773

Under this goal, NTESS earned a rating of Very Good, and 89 percent of the award fee allocated to this goal. NTESS achieved many accomplishments that greatly outweigh performance issues. NTESS met performance expectations within expected cost and with no significant issues.

Accomplishments

NTESS exceeded expectations in proactively preparing for future stockpile mission needs by significantly enhancing its readiness review process for the startup and restart of nuclear operations and facilities. This enabled the restart of the ACRR Neutron Radiography Facility operations after almost a decade of being unavailable due to a lack of mission need as well as the completion of preparations for the upcoming ACRR Transient Rod Withdrawal sub-mode operation.

After five years of planning and two years of testing, NTESS successfully completed the first experiments in over 20 years using safety-class crediting containment at the ACRR, advancing scientific knowledge of fissile material properties in support of mission operations.

NTESS consistently submitted high-quality explosive interim hazard classification requests, enabling shipment of hazardous material in accordance with schedule and technical requirements.

NTESS achieved a total strategic cost saving rate of 6.7 percent, far exceeding the Supply Chain Management Center goal of 4.0 percent. NTESS accounted for 31.6 percent of the NNSA total strategic cost savings, significantly contributing to the NNSA current rate of 5.5 percent.

NTESS developed an innovative property inventory process to scan its information technology network seamlessly and unobtrusively for connected property. The process significantly reduced labor hours to inventory attractive property items and facilitated identification of items to reduce inventories.

DOE and NNSA recognized NTESS for its outstanding Mentor Protégé Program for supporting the development and growth of small businesses. NTESS also exceeded its overall small business goal and all five small business category goals.⁴

NTESS simultaneously negotiated a new three-year collective bargaining agreement and a three-year extension to another collective bargaining agreement, avoiding the use of contingency support and achieving alignment with non-represented employee benefits to reduce administration costs.

⁴ This small business goal accomplishment was not considered for the Goal 4 Award Fee determination because the Contract has a separate Small Business Incentive Fee.

Using an integrated team approach involving the USAF and NNSA, NTESS successfully addressed the Little Mountain Test Facility contracting issue, acquiring long-term use of the facility for critical path weapon modernization program testing.

NTESS contributed to the ASD project CD-2/3 approval and the submittal of the baseline schedule into the Project Assessment and Reporting System. NTESS successfully collaborated with Triad to consolidate digitizer procurement, achieving significant cost savings. NTESS achieved progress in recovering schedule due to insulator and inductive voltage adder cell testing and assembly delays.

NTESS successfully completed EOC construction within cost and schedule in accordance with the Administrator-approved pilot approach.

NTESS met expectations by executing Microsystems Engineering, Science, and Applications (MESA) maintenance and recapitalization projects in accordance with the MESA Extended Life Program Master Plan.

NTESS successfully achieved CD-1 for the Power Sources Capability project and made progress towards CD-2 in accordance with the NNSA approved plan.

NTESS successfully awarded engineering support subcontracts for the Combined Radiation Environments for Survivability Testing nuclear facility and reactor.

Issues

NTESS experienced a higher undetected defect rate compared to FY 2022 in final product submittals for NNSA acceptance, increasing risk of impacting next assembly.

Despite the implementation of corrective actions, NTESS continued to experience a recurrence of packaging and transportation incidents.

Although NTESS developed a Corrective Action Plan to ensure requirements within the Office of Infrastructure Program Management Plan are met, documented, and managed, NTESS did not consistently address identified deficiencies across all project execution portfolios (i.e., Direct and Indirect funded minor construction projects and Asset Management Program projects), resulting in increased project costs and increasing risk to mission due to delays in the implementation of corrective actions.

NTESS achieved marginal progress in costing previous years' carryover funds for infrastructure, resulting in a large carryover of funds into FY 2024.

NTESS experienced issues with the WEPAR project that resulted in substantial cost increases and schedule delays, requiring a new project performance baseline. NTESS achieved progress later in the performance period, such as improving coordination with CNS and negotiating/awarding a key subcontract to allow construction to proceed.

Goal 5: Mission Leadership

NTESS Amount of At-Risk Fee Allocation: \$1,434,579

Under this goal, NTESS earned a rating of Excellent, and 91 percent of the award fee allocated to this goal. NTESS achieved many accomplishments that significantly outweigh performance issues. NTESS generally met performance expectations within expected cost and with no significant issues.

Accomplishments

NTESS displayed exceptional leadership in supporting the EMDI. In collaboration with NNSA, NTESS completed the M&O AODR pilot project, resulting in enhanced NNSA/NTESS collaboration and reduced time to review and approve cybersecurity documents required for mission operations. Given the significant results, NNSA implemented the concept across the sites.

NTESS led the way in unlocking latent capacity by implementing a performance excellence culture program known as Unleash Excellence, gathering over 420 improvement ideas from its workforce through a crowdsourcing site. This effort generated 35 improvement projects that reduced costs by \$7.9 million and reduced annualized labor hours by 38 thousand.

NTESS demonstrated initiative by leading the enterprise in Digital Transformation and planning for the implementation of Agile for the W93 program.

NTESS exceeded expectations in supporting NNSA enterprise efforts, such as the SNL New Mexico Site-Wide Environmental Impact Statement, Energy Savings Performance Contracts at both the New Mexico and California sites, DOE sustainability goals in support of the executive order on climate change, and the NNSA Enterprise Radioactive Waste Management Performance Review.

Selected as the only M&O partner to serve as a member of the DOE Data Analytics Working Group, NTESS helped jumpstart the working group's efforts in developing the Enterprise Data Analytics Framework by providing key insights from its extensive data analytics experience.

NTESS shared valuable lessons learned across the enterprise from its 3-year A-123 Site-Centric Pilot Program to implement a business process approach for testing internal controls. The shared knowledge will facilitate development of internal control testing methodologies at other sites and implementation of the New Hybrid Internal Control Testing Approach.

NTESS partnered with NNSA to make enhancements to the G-invoicing process to improve security and efficiency NNSA-wide by establishing profiles necessary to access interagency agreements and streamlining the review and approval process.

NTESS implemented a multi-year People & Culture Strategy to increase hiring and retention, yielding positive improvements by increasing promotion opportunities and expanding university education programs to further develop critical skillset talent pools.

Issues

NTESS did not consistently demonstrate performance results through the institutional use of its performance assurance system.

Though the Technical Security Program (TSP) has not been fully implemented, NTESS achieved progress by meeting several TSP Implementation Plan milestones.

APPENDIX A: Acronyms and Definitions

Acronym	Definition
ACRR	Annular Core Research Reactor
AFA	Arming and Fuzing Assembly
ALT	Alteration
AODR	Authorizing Official Designated Representative
ASD	Advanced Sources and Detectors
CISA	Cybersecurity and Infrastructure Security Agency
CD	Critical Decision
CNS	Consolidated Nuclear Security, LLC
DoD	Department of Defense
DOE	Department of Energy
EMDI	Enhanced Mission Delivery Initiative
EOC	Emergency Operations Center
FAR	Federal Acquisition Regulation
FM&T	Honeywell Federal Manufacturing and Technologies, LLC
FPU	First Production Unit
FTU4	Flight Test Unit 4
FY	Fiscal Year
GBD	Global Burst Detector
LDRD	Laboratory Directed Research and Development
M&O	Management and Operating
MESA	Microsystems Engineering, Science, and Applications
NEA	Nuclear Enterprise Assurance
NEST	Nuclear Emergency Support Team
NGRV	Next Generation Reentry Vehicle
NNSA	National Nuclear Security Administration
NTESS	National Technology and Engineering Solutions of Sandia, LLC
PEMP	Performance Evaluation and Measurement Plan
PER	Performance Evaluation Report
R&D	Research and Development
SNL	Sandia National Laboratories
SPP	Strategic Partnership Projects
Triad	Triad National Security, LLC

TSP	Technical Security Program
QER	Qualification Engineering Release
USAF	United States Air Force
WEPAR	West End Protected Area Reduction
WMD	Weapons of Mass Destruction