

**Department of Energy**  
**National Nuclear Security Administration**  
**Sandia Field Office**  
**P.O. Box 5400**  
**Albuquerque, NM 87185**



**DEC 13 2021**

Dr. James S. Peery  
Laboratories Director  
National Technology and Engineering Solutions of Sandia, LLC  
P.O. Box 5800  
Albuquerque, New Mexico 87185

Subject: National Technology and Engineering Solutions of Sandia, LLC Fiscal Year 2021  
Performance Fee; Contract DE-NA0003525

Dear Dr. Peery:

The National Nuclear Security Administration (NNSA) has completed its assessment of the National Technology and Engineering Solutions of Sandia, LLC (NTESS) in meeting the performance expectations established in the Fiscal Year (FY) 2021 Performance Evaluation Measurement Plan for the period of October 1, 2020, through September 30, 2021.

The FY 2021 Fee Determining Official Memorandum and Performance Evaluation Report are enclosed.

A contract modification is being prepared and will be sent separately for the final NTESS performance fee.

If you have questions, please contact me at (505) 845-6036.

Sincerely,

Daryl J. Hauck, Ph.D.  
Manager

2 Enclosures  
cc w/enclosure:  
Kelly E. Westlake, SNL/NM  
Michael Duvall, SFO/MO  
Kevin R. Moore, SFO/CABM  
Geraldine Duran, SFO/CABM  
Jon Holmberg, SFO/CABM  
NNSA-2021-006873



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



December 10, 2021

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR DARYL HAUCK  
 MANAGER  
 SANDIA FIELD OFFICE

FROM:

*David Hutzenga*  
 DAVID HUTZENGA  
 ASSOCIATE PRINCIPAL DEPUTY ADMINISTRATOR

SUBJECT:

National Technology and Engineering Solutions of Sandia, LLC  
 (NTESS), DE-NA0003525 Fiscal Year 2021 Aware Fee Determination

The Department of Energy's National Nuclear Security Administration (DOE/NNSA) has completed its assessment of NTESS' performance of the contract requirements for the period of October 1, 2020, through September 30, 2021, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP). Based on assessments provided in the NNSA Performance Evaluation Report, award fee amounts are as follows:

	Rating		At Risk Available	Final
	Adjectival	Percent		
Goal-1: Mission Execution: Nuclear Weapons	Very Good	85%	\$3,427,967	\$2,913,772
Goal-2: Mission Execution: Global Nuclear Security	Excellent	91%	\$856,992	\$779,862
Goal-3: DOE & Strategic Partnership Projects Mission Objectives	Excellent	100%	\$0	\$0
Goal-4: Science, Technology & Engineering (ST&E)	Excellent	100%	\$0	\$0
Goal-5: Mission Enablement	Very Good	89%	\$2,570,975	\$2,288,168
Goal-6: Mission Leadership	Very Good	83%	\$1,713,983	\$1,422,606
<b>Total Award Fee</b>	<b>Very Good</b>	<b>86.4%</b>	<b>\$8,569,917</b>	<b>\$7,404,408</b>

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

Fixed Fee	\$21,424,792	\$21,424,792
SPP (Fixed Fee)	\$10,100,000	\$10,100,000
Total Fixed Fee	\$31,524,792	\$31,524,792
<b>Total Fee (Award Fee and Fixed Fee)</b>	<b>\$40,094,709</b>	<b>\$38,929,200</b>



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National Nuclear Security  
Administration

National Technology &  
Engineering Solutions of  
Sandia, LLC

Performance Evaluation  
Report (PER)

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NNSA Sandia Field Office

Evaluation Period:  
October 1, 2020 – September 30,  
2021

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*December 10, 2021*

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<p><b>OFFICIAL USE ONLY</b></p> <p>May be exempt from public release under the Freedom of Information Act (5 U.S.C. 552), exemption number and category: <u>Exemption 5 Privileged Information</u></p> <p>Department of Energy review required before public release.</p> <p>Name/Org: Jon Holmberg, NA-SN Date: 6 October 21</p>
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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, 2020 – September 30, 2021, as evaluated against the goals defined in the Performance Evaluation and Measurement Plan (PEMP). The NNSA took into consideration all inputs provided (e.g., CAS, Program Reviews) from NTESS and NNSA Program and Functional Offices both at headquarters and in the field.

NTESS earned an overall rating of Very Good during this performance period. NTESS earned Excellent ratings for Goals 2, 3, and 4, and Very Good ratings for Goals 1, 5, and 6. Specific observations for each goal are provided in the following pages.

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

NTESS Amount of At-Risk Fee Allocation: \$3,427,967

Under this goal, NTESS earned a rating of Very Good with a percentage of 85 percent. NTESS achieved many accomplishments that greatly outweigh performance issues. NTESS generally met performance expectations within expected cost. For Defense Programs high priority items listed in the Getting the Job Done List (GTJDL), NTESS met the majority of performance requirements, with no significant issues.

### Accomplishments:

NTESS applied innovative science and engineering capabilities to increase confidence in performance and survivability of nuclear deterrence systems. NTESS made notable progress to strengthen capabilities in the areas of experimental sciences, material diagnostics, radiation effects, advanced simulation and computing, and validation of performance predictions.

NTESS effectively managed the Stockpile Research, Technology, and Engineering program, producing key experimental data to support the annual NNSA certification of the nuclear weapon stockpile. In partnership with the Los Alamos National Laboratory (LANL), NTESS successfully executed Plutonium (Pu) aging experiments through the development and application of a new stripline containment configuration, yielding critical nuclear science diagnostics data. NTESS successfully executed the first cryogenic Deuterium/Tritium Inertial Confinement Fusion experiments, gaining new insights into Special Nuclear Material performance under extreme conditions.

NTESS successfully completed a multi-year effort to provide the NNSA laboratories with general modeling use of the Astra computing system (Vanguard Prototype system), delivering

computational and information science capability to facilitate the transition to Exascale computing.

NTESS developed new High-Temperature Shock Tube experimental capabilities through innovative science and engineering, achieving increased pressures and higher temperatures to emulate near Mach 20 flight conditions for existing and future Nuclear Security Enterprise (NSE) requirements.

NTESS played a key leadership role in establishing the NNSA Nuclear Weapon Digital Assurance (NWDA) program. NTESS led the NWDA Core Team in producing several critical nuclear weapon cybersecurity studies and assessments. NTESS also provided valuable feedback on federal cybersecurity publications, strengthening national resiliency and security to cyber threats.

NTESS provided crucial expertise in nuclear weapons transportation by capturing real-world data to support evaluation and validation of the Mobile Guardian Transporter (MGT), enabling the first major MGT design release and start of on-the-road testing.

Despite COVID-19 global health pandemic restrictions and an increased demand for neutron generators, NTESS exceeded the Neutron Generator Integrated Production Plan requirements while successfully managing the neutron generator facility and infrastructure improvement projects.

NTESS provided crucial project management support to mitigate W88 Alt 940 cable production delays by assuming ownership of production tester qualification work; proposing and documenting production acceptance criteria to ensure cables met requirements; and providing numerous recommendations to reduce production schedule risk.

Despite working under limited operations during the COVID-19 global health pandemic, NTESS completed all negotiated testing and evaluation, including flight and laboratory tests, necessary to support the annual certification of the nuclear weapon stockpile. NTESS successfully supported an increased demand in nuclear explosive safety and weapon response activities for legacy programs. NTESS completed W80-1/Alt 369 production, sustaining the stockpile in support of the nuclear deterrence mission. NTESS provided critical weapon response support and analysis for the B83 life extension study. NTESS completed the conceptual design requirements for the W87 flight test units to support integration with the Ground Based Nuclear Deterrent.

NTESS provided timely evaluation and disposition of multiple concerns at various stages of the W88 Alt 370 Arming, Fuzing, and Firing Assembly production, significantly contributing to the early completion of the First Production Unit (FPU) of the Mark 5 Reentry Body Assembly. Additionally, NTESS teamed with the Kansas City National Security Campus (KCNSC) to achieve FPU for all B61-12 Life Extension Program (LEP) respin components ahead of schedule. NTESS also collaborated with the United States Air Force to resolve platform integration challenges and release critical compatibility certifications for the F-15E, B-2A, and F-35A. NTESS partnered with the Lawrence Livermore National Laboratory to develop a specific hydrodynamic testing regime, which enabled the completion of the W80-4 Electronic Neutron

Generator baseline design. NTESS partnered with KCNSC to evaluate and determine the usability of over 25,000 piece-parts that were potentially exposed to chemical contamination, avoiding significant increases in weapon system production costs.

NTESS successfully achieved the W87-1 Modification program Phase 6.2 objectives, including the release of system and component requirements to meet military characteristics and stockpile-to-target sequence documents, resulting in a single system-level architecture entering Phase 6.2A. NTESS also completed a warhead electrical assembly at the new Sandia Program Engineering and Assembly Research Facility, demonstrating the research and development (R&D) capability to manufacture, assemble, and test for validating weapon modernization system designs.

Issues:

NTESS experienced issues with legacy component-level designs UNCI (b)(3), (b)(7)(E), (b)(7)(F)  
UNCI (b)(3), (b)(7)(E), (b)(7)(F) resulting in numerous production challenges and increasing risk of FPU and/or Initial Operational Capability delays for multiple weapon modernization programs.

NTESS delayed critical W80-4 system-level testing activities due to component-level design, integration, and testing issues, increasing risk to meeting program system deliverables.

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

NTESS Amount of At-Risk Fee Allocation: \$856,992

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

Accomplishments:

NTESS provided outstanding support in the areas of physical protection and countering unmanned aerial systems for mitigating nuclear security vulnerabilities. NTESS technical expertise was crucial to mitigating risks associated with cybersecurity, physical security, and sabotage for two research reactor physical protection upgrades in the Middle East and North Africa (MENA) Region. NTESS supported numerous engagements with international partners in capacity building across all elements of nuclear security. NTESS provided vital leadership in fostering bilateral cooperation between the United States and all partner countries in Europe, Asia, MENA Region, and Sub-Sahara Africa. NTESS provided technical expertise in developing design requirements to build networking capability for radiation detection systems. NTESS

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National Technology and Engineering Solutions of Sandia, LLC

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developed radiation safeguard technology for the Cesium Irradiator Replacement Project at hospitals and clinics. NTESS successfully modified the Gamma Detector Response and Analysis Software and Interspec software applications to assist mission partner countries in identifying high-risk smuggling environments. NTESS led the evaluation of green border security equipment to assess the sustainment of operational detection measures. In addition, NTESS deployed a software application to remotely assess the health of security systems in partner countries to ensure proper operation and function.

Despite the COVID-19 global health pandemic restrictions, NTESS effectively supported two Department of Defense (DoD) Global Positioning System (GPS) satellite launches by leading the integration of operational payloads onto the satellites. NTESS achieved multiple accomplishments supporting nuclear safeguards R&D. Several examples include: test and evaluation of a new tamper-indicating coating; development of a new resonator alloy for use in a passive Magnetic Smart Tag; and development of a prototype code for anomaly detection using Distributed Ledger Technology.

NTESS provided vital arms control modeling capabilities to DOE and interagency partners in support of nonproliferation verification operations. To advance seismic detection of low-yield underground nuclear explosions, NTESS successfully developed and delivered a state-of-the-art Low Yield Nuclear Monitoring denoising neural network algorithm to improve signal filtering of seismic waveforms. NTESS provided technical analysis for dual-use licenses, enabling the NNSA Export Control Review/Interdiction Team to exceed its Office of Management and Budget Fiscal Year (FY) 2021 goal.

NTESS provided critical technical support to the Surplus Plutonium Disposition Program. For example, NTESS achieved substantial progress on the Waste Isolation Pilot Plant (WIPP) post-closure criticality analyses. NTESS also improved the Remote-Monitored Sealing Array design, demonstrating improved transportation security for routine WIPP waste shipments.

NTESS successfully executed the Capability Forward Initiative by developing and validating new response equipment, training facilities, and training aids. NTESS participated in over 70 domestic and international training events and one international exercise. NTESS executed experiments in support of high-priority nuclear materials characterization efforts. NTESS released critical new versions of COSMOS and TurboFRMAC response software and published the Assessment Working Group-approved Federal Radiological Monitoring and Assessment Center Assessment Manual (Volume 2). NTESS provided vital operational readiness training and preventative radiological/nuclear detection support to world events, such as: the United States Presidential Inauguration; Radiological Material Identification in Oklahoma and New Mexico; and multiple national-level exercises for emergency response preparedness.

To safeguard and secure nuclear material under regulatory control, NTESS provided critical support for the planning and implementation of safeguards bilateral physical protection assessment visits. NTESS focused on the International Atomic Energy Agency state-level concept to strengthen the effectiveness and efficiency of its safeguards program. NTESS also conducted a study to prioritize opportunities and challenges of emerging technologies for international safeguards.

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~~Source Selection Information - See Federal Acquisition Regulation (FAR) 2.101, 3.104 and 42.1503~~



Issue:

NTESS incurred cost overruns due to challenges in producing the next hyper temporal focal plane array, increasing schedule risk and costs for the Global Burst Detector IIIF program.

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

NTESS Amount of At-Risk Fee Allocation: \$0.00

Under this goal, NTESS earned a rating of Excellent with a percentage of 100 percent. NTESS achieved many accomplishments that significantly outweigh performance issues. NTESS generally met performance expectations within expected cost and with no significant issues. Both the DOE and SPP work sustained and strengthened unique capabilities, facilities, and essential skills that support the DOE/NNSA mission.

Accomplishments:

NTESS delivered innovative and transformative scientific and technological solutions that directly support DOE missions for energy, science, nuclear, economic, and environmental stewardship programs. NTESS proved to be an effective contributor to the Nation's COVID-19 global health pandemic response, providing crucial support to the DOE National Virtual Biotechnology Laboratory to help counter and respond to challenges related to the pandemic. Major contributions included development of reagents for vaccines and integrated virus monitoring, modeling, and analysis capability to track COVID-19 pandemic propagation, which helped to inform decisions associated with detection and diagnostics. NTESS successfully developed and demonstrated high-temperature solar-thermal power generation and storage capabilities using falling particle receiver technology. As a result of this accomplishment, DOE selected NTESS as the lead laboratory to design, build, and develop the next generation particle receiver pilot plant at the National Solar Thermal Test Facility (NSTTF). DOE leadership commended NTESS for its geoscience expertise and delivery of analytical oil sampling and geotechnical characterization of the Strategic Petroleum Reserves cavern integrity, supporting the DOE Exchange for Storage Short-Storage Operations program. In addition to numerous advances in support of the DOE-sponsored Quantum Systems Accelerator program, the Center for Integrated Nanotechnologies achieved a major scientific breakthrough by fabricating and demonstrating a revolutionary tunable superconducting qubit to advance quantum computing research.

NTESS completed critical work for a broad range of SPP sponsors, enhancing NNSA core competencies and capabilities, while addressing strategic national security needs of the Nation and its allies. NTESS effectively managed SPP resources across the laboratories to continue work on many of the most challenging national security projects, receiving recognition from many

interagency sponsors for its dedication, resourcefulness, and professionalism exhibited during the COVID-19 global health pandemic.

NTESS applied several of its core capabilities to SPP work and effectively developed new solutions and advanced DOE/NNSA technologies. NTESS led the construction of a hypersonic glide body while facilitating the transfer of technology to DoD industry partners, enabling the partners to develop the skill sets necessary for future hypersonic glide body production. NTESS overcame international travel and shipping challenges in responding to urgent requests to complete P-19 upgrades necessary for enhancing DoD nuclear weapons security. NTESS successfully supported several high-visibility launch operations for the DoD by launching a larger rocket motor from the Kauai Test Facility (KTF) using a new mobile remote launch operation system. These efforts enabled NTESS to advance its technical skills in flight software, navigation, guidance and controls, modeling and simulation, and safety analysis. NTESS demonstrated the chemistry and form factor of a bulk detoxification capability for chemical warfare agents that can support the counterproliferation/counterterrorism mission by neutralizing both surrogate and live agents. NTESS applied its cybersecurity and industrial controls system capabilities to produce a novel cyber-physical security system, allowing warfighters to monitor for cyber anomalies and protect critical subsystems. NTESS completed a unique demonstration of a powered-on Arming, Fuzing Assembly for the Mk21 program during a System Generated Electromagnetic Pulse test, displaying key performance objectives and advanced engineering capabilities to support national security requirements. NTESS successfully supported the Department of Homeland Security Cybersecurity and Infrastructure Security Agency (CISA) response to a high-consequence cybersecurity incident through its Analytical Hunt and Incident Response Team. NTESS contributions included network forensics expertise to help inform the CISA defense and response to the overall incident.

**Goal 4: Mission Execution: Science, Technology, and Engineering (ST&E):**

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

NTESS Amount of At-Risk Fee Allocation: \$0.00

Under this goal, NTESS earned a rating of Excellent with a percentage of 100 percent. NTESS achieved many accomplishments that significantly outweigh performance issues. NTESS met performance expectations within expected cost and with no significant issues.

**Accomplishments:**

NTESS developed notable new capabilities that enabled technology deployments and technology transitions through its mission-inspired strategic research investments and sustainment of core research foundations. NTESS effectively maintained a robust and resilient science, technology, and engineering base in a state of readiness to provide rapid response to world events of national security importance. With its collective contributions to help counter and respond to emerging

threats, such as the ongoing COVID-19 global health pandemic, NTESS demonstrated its sustainment of numerous technical areas of excellence, which are staffed by some of the Nation's most innovative scientists, researchers, and engineers.

Through its research strategy and discipline-based research foundations, NTESS enabled R&D projects that yielded transformational advances in science and engineering, significantly enhancing critical mission capabilities. The discretionary Laboratory Directed Research and Development (LDRD) portfolio included a wide breadth of projects, each with the purpose of building toward future capabilities, developing potential applications, and advancing nascent research in support of our enduring national security missions. Every project in the portfolio was well aligned with the DOE/NNSA mission priorities, with each project having measurable goals, high technical challenges, long-term strategies, and leading-edge science.

NTESS achieved many ST&E accomplishments that were transformative, high-quality advances in the frontiers of science and engineering. For example, NTESS successfully developed remote sensing capabilities for Pu proliferation detection using laser-induced technologies, resulting in the first published optical emission spectrum attributed to Pu oxides. Through the Lithium Battery LDRD Grand Challenge project, NTESS successfully achieved a better understanding of battery degradation and failure mechanisms. NTESS successfully demonstrated the integration of atomic precision advanced manufacturing and complementary metal-oxide semiconductor devices on one microchip in the FAIR DEAL LDRD Grand Challenge project. In addition, NTESS researchers successfully built the world's smallest acoustic amplifier that processes radio signals with miniaturized wireless technology using sound waves instead of electrons.

Despite working under limited operations during the COVID-19 global health pandemic, NTESS maintained a healthy research environment that enhanced technical workforce competencies and research capabilities. NTESS leveraged university partnerships with leading-edge capabilities to develop and strengthen competencies, including development of discipline-based workforce pipelines. The NTESS research environment remained strong and conducive to innovation and discovery. For example, cross-cutting research teams developed new enabling capabilities for various national security applications, such as radio frequency-microelectromechanical systems and piezoelectric devices using lithium niobate. To gain a better understanding of hypersonic environment conditions, NTESS designed and engineered a high temperature shock tube capability that generated an experimental wave traveling at nearly Mach 20.

NTESS received numerous awards and accolades for excellence and leadership in Partnerships and Technology Transfer programs, including national recognition by the Federal Laboratory Consortium for Excellence in Technology Transfer and Outstanding Technology Transfer Professional Award.

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

NTESS Amount of At-Risk Fee Allocation: \$2,570,975

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

Accomplishments:

NTESS created a new Environmental Safety & Health (ES&H) Governance Board, led by the Deputy Laboratories Director, which provides an effective forum for senior leaders to share lessons learned, monitor performance, and hold organizations accountable for executing the ES&H Improvement Plan.

In coordination with the Kirtland Air Force Base (KAFB) Fire and Emergency Services, NTESS developed an integrated Emergency Action Zone system for the notification and issuance of protective actions across KAFB and SNL, standardizing and expanding the issuance of protective actions for members of the KAFB/SNL workforces.

NTESS expanded its use of data analytics and machine learning to help strengthen and enhance internal controls. For example, NTESS used data analytics to assess labor charging, resulting in over 6,000 hours/\$550K of labor corrections. By using machine learning to assess expense report and corporate credit card expenses, NTESS created an exponentially more efficient process to identify expense deficiencies compared to the existing random sampling process.

NTESS improved its payroll separations process to reduce processing time and errors. With more than 1,200 separations per year, these improvements resulted in a 77 percent reduction of manual entries, 76 percent reduction of processing time, and an overall paycheck accuracy of 99.99 percent.

NTESS exceeded its overall Small Business goal as well as goals in all five categories (Small Disadvantaged Business, Woman Owned Small Business, Historically Underutilized Business Zone, Veteran-Owned Small Business, and Service-Disabled Veteran-Owned Small Business).<sup>1</sup>

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<sup>1</sup> This information was not considered for the Award Fee for this goal because the Contract has a separate Small Business Incentive Fee.

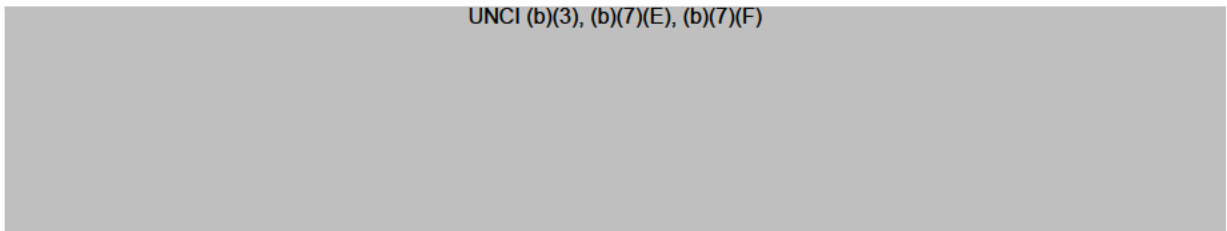
NTESS achieved 226 percent of its strategic cost savings goal, representing 36 percent of the NNSA total cost savings, which significantly contributed to NNSA exceeding its goal.

NTESS earned an Outstanding rating on its first No-Notice Command Cyber Readiness Inspection, demonstrating its robust capability to protect classified networks and systems. NTESS successfully achieved full operational status for the Microsoft Office 365 cloud-based application, exceeding the NNSA email-only requirement.

Issues:

NTESS experienced multiple issues associated with project cost estimating, planning, and execution. In project estimating, NTESS did not consistently estimate costs accurately, requiring additional funding requests and major scope changes. Several examples include: Explosive Manufacturing Science and Technology Facility; Microsystems Engineering Science and Applications Facility B858N SiFab Bulk Chemical Distribution System Upgrade; SNL/CA Limited Area Multi-Purpose Secure Office Building; and Radiation Calibration Facility. In project planning, NTESS continued to experience issues impacting execution related to environmental and safety requirements, such as lack of quality planning before project initiation, lack of adequate site owner coordination, and lack of long-term planning with KAFB. Several examples include: 5Kv Feeder Line Project; NSTTF new tower/array; KTF Administration Building; and Gen 3 Particle Pilot Plant. In project execution, NTESS did not consistently evaluate quality and safety elements of project performance, impacting its ability to effectively prioritize and resolve issues during project execution. Several examples include the Tech Area IV Chilled Water Loop and Building 892. Though NTESS has taken steps to address the cost estimation, planning, and execution issues, improvements have yet to be realized.

UNCI (b)(3), (b)(7)(E), (b)(7)(F)



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NTESS improperly shipped devices containing Plutonium, resulting in several shipping violations. In collaboration with NNSA, NTESS completed notifications, an extent of condition review, causal analyses, and corrective actions.

NTESS continued to experience issues with its subcontractor evaluation process, increasing legal risk related to subcontractor evaluation and selection as well as impacting its ability to minimize acquisition lead time.

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

NTESS Amount of At-Risk Fee Allocation: \$1,713,983

Under this goal, NTESS earned a rating of Very Good with a percentage of 83 percent. NTESS achieved many accomplishments that greatly outweigh performance issues. NTESS generally met performance expectations within expected cost and with no significant issues.

Accomplishments:

NTESS displayed outstanding leadership in support of the NSE and the overall national response to the global health pandemic. Well in advance of vaccine availability, NTESS worked in partnership with the New Mexico Department of Health (NMDOH) to gain approval as a COVID-19 Vaccine Provider to dispense the vaccine. NTESS also launched an outreach program to share knowledge and assist other NNSA sites with developing Provider plans and reciprocity agreements. Using a phased approach, NTESS administered vaccines in accordance with NMDOH criteria, beginning with vaccinating medical, first responder, and emergency management personnel. NTESS delivered 10,718 vaccinations to SNL and DOE/NNSA members of the workforce, achieving an 83 percent vaccination rate for the SNL population.

Recognized as having a model Nuclear Criticality Safety Program, NTESS provided procedures, processes, charters, and other documents to help strengthen programs across the NSE. NTESS also led nuclear criticality safety reviews for other NSE sites, including the LANL Triennial Assessment and the Babcock and Wilcox Technologies, Incorporated Lynchburg facility for the Naval Nuclear Propulsion Program.

NTESS led several enterprise business initiatives. For example, NTESS led a team comprised of members from other labs, DOE, and NNSA to create new DOE procedures to identify uncollectible receivables, outline a dispute resolution process, and provide a receivables cancelation process when dispute resolution fails. NTESS also led a working group comprised of members from several NNSA sites to develop a single General Terms and Conditions/Government-Invoicing (G-Invoicing) Milestone Implementation Plan for submission to NNSA. Since the level of readiness to implement G-Invoicing varied greatly across the sites, NTESS shared its knowledge and assisted the sites in preparing to implement G-Invoicing in accordance with the federally mandated launch date.

NTESS earned multiple DOE Secretary's Honor Awards for its service and contributions as a member of the NSE Recruitment Strategy Group, NSE Supplier Quality Working Group, Flight

Experiment 2 Design and Test Team, and the Source Physics Experiment Phase II, Dry Alluvium Geology Team.

NTESS earned multiple awards and recognition for its exceptional work environment. Forbes magazine recognized NTESS as one of 500 Best Large Employers for 2021, being the only DOE/NNSA laboratory and the only New Mexico-based employer to make the list. The Profiles in Diversity Journal recognized NTESS as one of only 16 National 2021 Diversity Team Award winners. NTESS received recognition as a Platinum Level (Distinguished Leader) recipient of a 2021 New Mexico Family Friendly Business Award for its ongoing commitment to family friendly principles.

Issues:

NTESS did not consistently manage the escalation of programmatic and resource issues to ensure timely resolution of both risks and issues associated with weapon modernization programs [REDACTED]  
[REDACTED] ~~UNCL (b)(3), (b)(7)(E), (b)(7)(F)~~ [REDACTED] hindering its ability to effectively evaluate and resolve issues with the appropriate stakeholder engagement.

NTESS leadership did not consistently implement safeguards and security requirements in work activities across the divisions, increasing risk in the protection of classified matter.

NTESS continued to experience issues in multiple functional areas with issues management and corrective actions. Several examples include: ineffective predicting or preventing recurrence of similar issues at multiple locations (e.g., hoisting/rigging at Tech Area IV and V); not properly categorizing issues by risk and priority (e.g., light fixture electrical incident); lack of integration, accountability, and participation by key organizations in extent of condition reviews, fact-finding, and causal analysis (e.g., 5Kv Feeder Line Project, Building 892); incomplete and/or ineffective corrective actions to address the issues and prevent issue recurrence (e.g., Annular Core Research Reactor hoisting/rigging, TA-IV Chilled Water Loop project, 5kV Feeder Line Project, Building 905); and lack of transparency during the causal analysis and corrective action process (e.g., 5Kv Feeder Line Project, Non-Potable Water Building 6585).

NTESS leadership did not timely communicate and resolve an issue with a team member's acquisition of a lower tier subcontractor supplier of spin rocket motors, requiring involvement from senior leadership within NNSA and the Laboratory, resulting in added risk to the B61-12 production program.