



Department of Energy
National Nuclear Security Administration
 Washington DC 20585

November 22, 2017

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR STEVEN J. LAWRENCE
 MANAGER
 NEVADA FIELD OFFICE

FROM: WILLIAM I. WHITE
 ASSOCIATE PRINCIPAL DEPUTY ADMINISTRATOR

SUBJECT: National Security Technologies, LLC (NSTec), DE-AC52-06NA25946
 Fiscal Year 2017 Award Fee Determination

The National Nuclear Security Administration (NNSA) has completed its assessment of NSTec's performance of the contract requirements for the period of October 1, 2016 through September 30, 2017, 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:

	<u>At Risk %</u>	<u>Available</u>	<u>Final</u>	<u>Percent</u>
PO 1: Manage the Nuclear Weapons Mission	30%	\$ 8,306,400	\$ 7,558,824	91%
PO 2: Reduce Global Security Threats Mission	15%	\$ 4,153,200	\$ 3,945,540	95%
PO 3: DOE & Strategic Partnership Project Mission Objectives	6%	\$ 1,661,280	\$ 1,578,216	95%
PO 4: Science, Technology & Engineering (ST&E)	4%	\$ 1,107,520	\$ 1,107,520	100%
PO 5: Operations & Infrastructure	30%	\$ 8,306,400	\$ 7,558,824	91%
PO 6: Leadership	15%	\$ 4,153,200	\$ 4,153,200	100%
Total		\$27,688,000	\$25,902,124	93.6%

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

Fixed Fee	\$ -0-	\$ -0-
SPP (Fixed Fee)	\$ 5,054,271	\$ 5,054,271
Total Fixed Fee	\$ 5,054,271	\$ 5,054,271
Total Summary	\$32,742,271	\$30,956,395





National Nuclear Security
Administration

National Security
Technologies, LLC

Performance Evaluation
Report (PER)

NNSA Nevada Field Office

Evaluation Period:
October 1, 2016-September 30,
2017

November 20, 2017

Executive Summary

This Performance Evaluation Report (PER) provides the National Nuclear Security Administration (NNSA) assessment of National Security Technologies, LLC (NSTec), performance of the contract requirements for the period of October 1, 2016 through September 30, 2017, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP). The NNSA took into consideration all input provided (e.g. Contractor Assurance System (CAS), Program Reviews, etc.) from NNSA Program and Functional Offices both at Headquarters and in the field.

Overall, FY2017 was an excellent year for NSTec. NSTec made significant contributions to the enterprise by effectively performing across all of their mission lines while continuing their management focus on operational excellence which resulted in significant cultural changes. NSTec safely and securely achieved mission results at an increased tempo; significantly improved operational excellence; successfully kept the leadership team together and focused through the contract transition; successfully piloted the first Governance Peer Review; increased engagement with the Nevada Enterprise (NvE), corporate parents and employees; and made lasting personnel and infrastructure investments in the NNSS. Performance against the Goals is summarized below.

Goal 1: Manage the Nuclear Weapons Mission

EXCELLENT

NSTec exceeded most of the Defense Program objectives and Key Outcomes earning a rating of Excellent and 91% of the award fee allocated to this goal. It is important to note that all of these activities were achieved during a period of uncertainty due to the impending contract transition. NSTec conducts or supports integral experiments for the NNSA program of record across the complex. These experiments and the suite of next-generation, transformational diagnostics developed by NSTec enable linkages between past underground nuclear tests, full-scale hydrodynamic experiments and subcritical experiments (SCEs) for nuclear weapons predictive modeling and assessment of performance.

In FY2017, NSTec completed an unprecedented three+ nuclear startups leading to nuclear operations authorization in support of the Defense Programs mission to include: Coring at the Device Assembly Facility (DAF), Full Scale Compatibility Test (FSCT) at DAF, and the Linac upgrade at DAF. In addition, the U1A Hazard Categorization upgrade was nearly completed with all of the readiness reviews and pre-start findings closures successfully completed in FY2017. In addition, while operating in an extended continuing resolution, and at a flat budget, NSTec maintained momentum on multiple simultaneous efforts to include: receiving Critical Decision (CD) 1 approval for the U1a Complex Enhancement Project (UCEP) line item, successfully partnering with the NNSA national security laboratories in defining the resource requirements to increase the SCE throughput at U1a to two experiments per year, executing 18 experiments at Joint Actinide Shock Physics Experimental Research (JASPER) facility and two campaigns of static and dynamic experiments at the Dense Plasma Focus Facility (DPFF), performing safety basis processes evaluations on non-standard device designs to establish a bounding safety analysis, conducting the "Getting the Job Done List" Eurydice confirmatory U1a experiment, and successfully executing the readiness plan for transitioning U1a from a Hazard Category (HC) 3 to HC 2 Nuclear Facility.

NSTec also maintained the schedule to execute the next SCE before the end of calendar year 2017 and drove detailed scope negotiations with the laboratories and NNSA HQ to accomplish the Stockpile Stewardship mission, defer scope elsewhere and/or fund the needed scope to accomplish important milestones. Given the nuclear safety compliance environment, funding constraints and the range of integration required, NSTec was extremely successful in overcoming these significant challenges, conducting outstanding integrated experiments with an increased data recovery pace, and developing cutting edge, transformational diagnostics, all while working with their NNSA partners to plan for the subcritical experiment program of the future. In addition, NSTec's support to the Stockpile Management Program increased significantly this FY with the startup of the FSCT and Coring programs at the DAF.

Goal 2: Reduce Nuclear Security Threats

EXCELLENT

Overall, NSTec exceeded the objectives in support of NNSA in meeting the Goal 2 mission objectives, earning a rating of Excellent and 95% of the award fee allocated to this goal. NSTec successfully executed the Defense Nuclear Nonproliferation (DNN) and Counterterrorism and Counterproliferation (CTCP) work and exceeded the objectives and key outcomes related to the mission work conducted both at the NNSS and other locations, both CONUS and OCONUS. NSTec efforts demonstrated far reaching national and international implications in reducing global nuclear security threats and improved science, technology, and expertise in areas including the Global Material Support (GMS) program, the Comprehensive Test Ban Treaty Organization (CTBTO), underground nuclear explosion detection, radioactive material detection, foreign nuclear weapons programs, and the national response to nuclear incidents.

To support the GMS program, NSTec provided support to the Republic of Belarus by designing and implementing the first full three-year cycle Sustainability Warranty and Maintenance Program for security enhancements at six facilities and awarded the first remove contract in Belarus. For DNN, NSTec demonstrated effective leadership of a multi-laboratory team advancing U.S. capabilities to discriminate and characterize low yield nuclear tests; contributing both scientific expertise and experimental test bed capabilities for Source Physics Experiment-6 (SPE-6), that resulted in 100% data recovery that exceeded performance expectations for the underground test signatures community.

For the Counterterrorism and Counterproliferation program, NSTec provided excellent response in support of real world national security events, such as the Presidential Inauguration, the Joint Session of Congress, and the Super Bowl. In addition, NSTec's Aviation Program continued to go above and beyond earning DOE and GSA aviation awards for Best Aviation Program and DOE awards for Best Aviation Safety Professional and Best Aviation Operations/Support Professional. NSTec also successfully prepared the OPSIS II experimental test bed (Tumbleweed Test Range) and work authorization, including VIP tours with foreign nationals. Accolades were received by the interagency community for OPSIS II as a successful joint NNSA venture supporting the national and international render safe community.

Goal 3: DOE and Strategic Partnership Projects Mission Objectives EXCELLENT

NSTec exceeded the objectives and key outcomes related to the successful execution of the mission objectives of the Strategic Partnership Projects (SPP), Strategic Intelligence Partnership Projects (SIPP), and DOE Environmental Management Program earning a rating of Excellent and 95% of the allocated award fee for the goal. The NSTec SPP/SIPP work demonstrated an integration of activities/operations to leverage and sustain NNSS' unique science and engineering capabilities for the NNSA. As such, NSTec provided excellent support to many SPP/SIPP customers with products of far reaching national security impacts. NSTec provided excellent support for mixed waste and low level waste management at the Radioactive Waste Management Complex and also successfully supported completion of a multiyear effort to receive and dispose of the Consolidated Edison Uranium Solidification Program (CEUSP) waste stream from Oak Ridge saving the Department ~\$600M while completing the project ~nine months early.

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

NSTec exceeded the objectives and key outcomes related to the management of Site Directed Research and Development (SDRD) and Technology Transfer programs to advance national security missions and the frontiers of ST&E, earning a rating of Excellent and 100% of award fee allocated to this goal. The SDRD program continued its history of breakthroughs in key mission technologies, cooperative research and development accomplishments, as well as patent actions for magnetic flux generation, compressed imaging, and silicon-strip high energy particle detection. These patent pending technologies have created safer, more efficient and cost effective techniques for stockpile certification and global security threat reduction. NSTec also had success in recruiting and hiring early career technical staff. NSTec significantly increased work with universities to create opportunities for next generation employees to fill skills gaps in the National Security Mission workforce. Additionally, NSTec continued to grow technology transfer and partnerships that enhance national security missions.

NSTec continued its emphasis on high-quality and high-impact publications, lending credence to ST&E performance and enhancing credibility in the national security sciences. X-ray Doppler Velocimetry work, which supports leading edge defense programs diagnostic efforts relevant to inertial confinement fusion, was featured prominently in a high-energy density physics journal. Two SDRD supported post-docs were featured in a 2017 NNSA Stewardship Science Academic Programs report, and the Geometrically Enhanced Photocathode effort was selected as a 2017 R&D 100 award recipient for its breakthrough in vastly increasing the quantum efficiency in X-ray detectors. This new photocathode will be useful in probing states of matter, molecular dynamics, high-speed streak imaging, and medical applications. New results in dynamic materials are allowing enhanced computational accuracy through better informed physics models, and work in neutron sources has identified a new class of laser-generated "micro-scale" fusion important to nuclear physics applications for stockpile certification. These results were submitted for publication in top tier journals.

Goal 5: Operations and Infrastructure**EXCELLENT**

NSTec's Operations and Infrastructure performance exceeded most of the Objective and Key Outcomes by ensuring safe, secure and effective execution of program and site operations, as well as infrastructure sustainment and improvements while maintaining an NNSA enterprise-wide focus, earning a rating of Excellent and 91% of award fee allocated for this goal. NSTec successfully completed an unprecedented three+ nuclear startups in FY2017. NSTec continued to successfully advance capital projects, demonstrate progress on arresting the declining site infrastructure, further the plan to shrink the infrastructure footprint, implement NNSA infrastructure management system improvements, and met or exceeded their assigned Infrastructure Level 2 national milestones. NSTec focused on maintaining and improving mission critical infrastructure, support systems and equipment, personnel, and facilities, including IT, utilities and emergency management. The DAF Argus Perimeter Protect project construction exceeded expectations and is currently \$2M under budget and on schedule for completion in May of FY 2018. Realizing that safety and risk management are a key piece of mission success, NSTec focused on making safety, security, and risk management a part of the workforce culture. NSTec was also considered best in class, for example, for creating and maintaining G2 baselines and performance reporting, resulting in receipt of several NA-50 Excellence Awards. NSTec continued to exceed expectations in delivering service in the functional areas of business, legal, HR, energy efficiency, safety, security, quality assurance, infrastructure, construction, maintenance, IT, and emergency management.

Goal 6: Leadership**EXCELLENT**

NSTec's Leadership exceeded expectations by demonstrating a management team commitment to safe and secure enterprise mission execution, earning a rating of Excellent and 100% of award fee allocated for this goal. Overall, NSTec's performance significantly exceeded expectations in meeting the DOE/NNSA mission by effectively managing programmatic/enterprise mission and site risk while safely and securely executing mission and site operations. NSTec achieved mission results at an increased tempo; significantly improved operational excellence; successfully kept the leadership team together and focused through the contract transition; successfully piloted the first Governance Peer Review; increased engagement with the Nevada Enterprise (NvE), corporate parents and employees; and made lasting personnel and infrastructure investments in the NNSS. NSTec made institutional investments and process changes that will sustain the NNSS for the long term.