

## Nevada Site Office – FY2012 Performance Evaluation Report

### FY2012 PERFORMANCE EVALUATION REPORT OCTOBER 1, 2011 THROUGH SEPTEMBER 30, 2012 CONTRACT NUMBER DE-AC52-06NA25946 NATIONAL SECURITY TECHNOLOGIES, LLC

#### I. EXECUTIVE SUMMARY

This Award Fee Report includes an assessment of National Security Technologies, LLC's (NSTec) overall performance, responsiveness, senior management involvement, partnerships and teamwork in support of the National Nuclear Security Administration (NNSA) Nevada Site Office (NSO) Strategic Initiatives and site priorities identified in the Fiscal Year 2012 (FY2012) Performance Evaluation Plan (PEP). The PEP was a combination of base, stretch and multi-site performance measures with breakout values as follows.

- Base Fee = 60% (All Performance Objectives)
- Stretch Fee = 30% (All Performance Objectives)
- Multi-Site Fee = 10% (All Performance-Based Incentives)

Fee under this PEP is earned commensurate with performance as measured by the aggregate percentage of success in achieving the base performance targets as a category and then the stretch performance targets as a category. In order to be eligible to earn any of the stretch pool fee at risk, the base performance must be at least Very Good (76% or better) in each performance category (Program, Operations, Management), irrespective of performance against the stretch performance measures.

NSTec's overall performance during FY2012 was deemed "Excellent" as NSTec:

- Met all Level 2 assigned national milestones.
- Successfully completed their Environmental Management requirements while meeting overall cost and schedule criteria.
- Exceeded almost all baseline metrics in the Sustained Performance Areas to include Stockpile Support, Nonproliferation Test & Evaluation, Emergency, Environmental Protection, Facilities & Infrastructure, LL/MLL Waste Receipt, Projection Execution, Safety & Health, Security, Counterintelligence and Business Operations.
- Demonstrated they have effectively implemented CAS through the NNSA Affirmation Review.
- Continued to improve the CAS Dashboard and associated metrics allowing for increased transparency and federal oversight utilization.

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- Had no significant safety or security incidents impacting mission outcomes or operations

While NSTec met their mission goals and performance was excellent in many areas, other areas still require additional work to satisfy NNSA/NSO's expectations. Areas that have continued to be of concern from previous rating periods were addressed as part of the Institutional Management performance measure, with a significant amount of assigned fee, that highlighted areas needing improvement and the expectation of NSTec's Senior Management to enhance enterprise integration between mission and operational functions as a key component of this measure. Also, it is important to note that in the development of this measure, it was recognized that the efforts undertaken by NSTec will span a multi-year period in order to ensure that the institutionalization of the changes occur and can be fully validated as to their effectiveness.

NSTec did make significant progress in Institutional Management during this performance period. Key to this progress were the following facts:

- Upon his arrival, the new NSTec President conducted a thorough assessment of the entire NSTec organization to include obtaining inputs from external customers to determine what areas in his organization required enhancement to meet the expectation of full integration between mission and operations
- Based on his assessment, clear actions were established to move the organization forward including:
  - “Integrated Challenge Themes” were established, with associated actions plans and metrics to measure improvement progress;
  - A management realignment was enacted to drive more effective integration and communication up, down, and across the organization;
  - Enhancements were implemented to the company dashboard and associated metrics to better identify risk and elevate concerns to management in a timely manner;
  - The NSTec President personally enhanced communication protocols with NSTec employees and with the senior Federal team as a transparency initiative; and
  - In addition, under the President's leadership, NSTec provided the most candid and transparent self-assessment ever presented. The self-assessment was comprehensive, yet balanced, providing an accurate assessment of achievements and areas needing improvement and actions taken to address those improvement areas.

One area of emphasis within the Institutional Management performance measure was project planning and execution. One project which is receiving significant HQ attention is the Argus project. While this project has significant issues, it is important to understand that NSTec was one of four contractor entities responsible for the planning and execution of this project and was only responsible for \$2.25M of the original \$8.87M project value. In January of 2012, it became clear that the project was not executable as planned, for a multitude of reasons including Davis-

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Bacon jurisdiction between the NNSA/NSO Security Contractor (WSI) and NSTec employees which severely impacted costs. At this point NSO, in conjunction with NA-70, put the project on pause and provided contracting officer direction to NSTec that they would be responsible for integrating and executing the entire set of construction activities associated with the project. Based on NSTec's response to this direction, we deemed that NSTec effectively took over leadership of the project and developed a credible path forward for execution. At the end of the performance period, NSTec was awaiting direction from NA-70, through NSO, on when they could re-initiate the project.

## II. PERFORMANCE OBJECTIVES

### 1.0 FY2012 OBJECTIVES (Essential)

#### 1.1 Campaigns/Directed Stockpile Work – Milestone Reporting Tool Milestones – High Hazard Integral Experiments at Nevada National Security Site (NNSS)

##### Introduction

NSTec provided excellent support to the Stockpile Stewardship Program in the execution of key experiments supplying critical data crucial to understanding material performance under various temperature and pressure regimes. NSTec met all Level 2 assigned national milestones.

##### Achievements

NSTec's diagnostics systems employed on both the Castor subcritical surrogate, Joint Actinide Shock Physics Experimental Research (JASPER) shot 100, and Site 300 Phoenix experiments provided outstanding data to the Laboratories for use in increasing their understanding of material performance. The Multiplexed Photonic Doppler Velocimeter (MPDV) deployed on Castor provided an unprecedented number of data channels and validated its data-gathering capability for the Pollux subcritical experiment to be conducted in early FY2013. The radiometry data from JASPER shot 100 exceeded expectations and will require the Physicists to reevaluate their understanding of material performance and conduct additional shots to validate the information. In addition, NSTec completed six Pu experiments at JASPER and fabricated new Time-of-Arrival probes for the Phoenix experiments to record new data.

NSTec faced and successfully addressed several challenges in executing Castor surrogate experiment. Noteworthy was the procurement of the experimental vessel as there was no American Society of Mechanical Engineers (ASME) standard for the required impulse loaded vessel. In addition the small vessel diameter required extensive coordination between the design agency and manufacturer to obtain a satisfactory product. The vessel passed all post-manufacturing tests.

##### Areas Requiring Improvement

None reported

### 1.2 Campaigns/Directed Stockpile Work – Other Experimental Activities

#### Introduction

NSTec provided excellent support to the Stockpile Stewardship Program through the development and employment of new and advanced diagnostics furthering the understanding of performance of materials of interest to the program. NSTec met or exceeded all Level 2 assigned national milestones.

#### Achievements

A noteworthy achievement for NSTec in the diagnostic area was the receipt of an R&D 100 award for the MPDV, a key part of the diagnostic for the Gemini Subcritical Experiment (SCE) series. This was a significant achievement and multiplexing data channels resulted in millions of dollars in cost savings (instead of one digitizer per data channel, multiple channels could be recorded simultaneously on a single digitizer). NSTec also designed and fielded the “fisheye” optical cavity diagnostic, which was selected as the preferred Gemini diagnostic after a series of performance tests. This diagnostic was coupled to the MPDV resulting in the capture of an unprecedented amount of data during the experiment.

NSTec also advanced diagnostics in the areas of:

- Radiographic & Neutron Source Development: completed refurbishment of Cygnus sources to decrease spot size and increase dose and developed a variety of diode configurations to move toward the development of a 7.5MeV source.
- Shockwave: designed and implement high temperature radiometry diagnostic on High Explosives Application Facility (HEAF) and completed 4 experimental campaigns with new configurations of diagnostics on the Boombox at STL.
- High Energy Density Physics: developed a detailed implementation plan for X-ray calibration capability to replace the National Synchrotron Light Source (NSLS) beamlines X8a and U3c to be decommissioned in May 2014.
- Detectors & Instrumentation: developed, fabricated and successfully completed testing of N-LP-155 Isolators and wavelength division multipoint Photon Doppler Velocimetry (PDV) receiver chassis and receivers.
- SSP Data Analysis: performed Reaction History, Pinhole Experiment (PINEX), and Neutron Experiment (NUEX) event analysis of ~12 different underground test (UGT) events using new techniques such as: optical flux monitor data reducing uncertainty analysis. Delivered advanced holographic analysis code to read 12-bit data and process image data from blue light reconstruction bend. Improved the optics to acquire 2.5 micron structures, improved particle segmentation, volume extraction, & discrimination.

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NSTec was faced with a \$10M budget shortfall part way into the FY impacting most of the experimental and diagnostic activities in this measure and requiring significant discussions and negotiations with the Laboratories to reprioritize the work. This was accomplished in a highly effective and collaborative effort that maintained the key activities and minimized overall impact to the program

### Areas Requiring Improvement

None reported

## 1.3 National Center for Nuclear Security

### Introduction

NSTec exceeded the significant award fee criteria in the continued development of the National Center for Nuclear Security (NCNS) and executing the approved experimental program per the NNSA/NA-22 Nonproliferation Research and Development program guidance. NSTec met overall cost, schedule, and technical performance requirements as defined by the approved life cycle plans as well as the detailed task plans and the appropriate project management. They substantially exceeded expectations in several critical areas and were engaged to ensure customer requirements were achieved.

### Achievements

- The NCNS proliferation detection test bed was completed on time and under budget and performed well in its first three operational scenarios. The outcomes of this test bed are integral to two NNSA Strategic Plan Select Initiatives (2015 and 2016).
- The NCNS Source Physics Experiment (SPE) test bed is considered a significant activity in regards to seismic signature research. The SPE test bed and associated research supports a predictive capability for increasing confidence in detection and yield estimates with decreasing yield. This capability is linked with the out-years exascale computing capability being developed in NNSA Defense Programs and Office of Science and will greatly impact test monitoring capability. These outcomes will support assessments of the verifiability of a Comprehensive Test Ban Treaty (CTBT). The latest experiment, using a nominal 2200 pound TNT equivalent explosion, was executed on July 24, 2012. NSTec seismic data collected from SPE during this fiscal year has been utilized throughout the U.S. nonproliferation community. NSTec's integration capabilities greatly enhanced the success of SPE.
- The Noble Gas Migration and Inspection technologies test bed began its first full collection campaigns and has demonstrated world-class capabilities to narrow the field of search and establish "smoking gun" assessments under a test monitoring inspection regime.
- The NCNS nuclear forensics effort was established and had impressive results in its first two quarters. Four major threads, including nuclear physics, radionuclide, debris collection and analysis, and prompt diagnostics, were organized and began experimentation in close coordination with Defense Threat Reduction Agency and interagency nuclear forensics

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efforts and is expected to provide a one-of-a-kind test bed for exploring Grand Challenge problems in technical nuclear forensics.

- The NCNS Chain-of-Custody test bed was established within seven months and demonstrated completion of its first phase of capability with the completion of an exercise on September 12, 2012. The impressive accomplishment in this short time attracted tremendous interest and support from the interagency and establishes a basis for developing continuity of knowledge and transparency in arms reduction, from warhead measurement to dismantlement. The results of this test bed are integral to satisfying the End-to-End Chain-of-Custody NNSA Strategic Plan Select Initiative (2016).
- The NCNS High Explosives Testing test bed successfully demonstrated signatures and observables capability to detect and characterize foreign weaponization efforts. The production of two field tests within one week (May 19 and May 22) was a major accomplishment and showed the strength of partnership between Defense Programs and Defense Nuclear Nonproliferation capabilities within NSTec.

### Areas Requiring Improvement

None reported

## 1.4 Environmental Management - Federal Facility Agreement and Consent Order Milestones

### Introduction

The contractor provided exceptional support in the ongoing cleanup of the environmental legacy of nuclear testing. Milestones were met with quality deliverables and within milestone dates. Work was performed in compliance with Environmental Safety & Health requirements and risk was appropriately managed. In addition, a cost effective approach was fully utilized, with several opportunities identified and successfully implemented, particularly for post closure monitoring and drilling operations. As a result of implementing these opportunities, the contractor significantly exceeded expectations by completing more work scope than was originally funded.

Though preliminary FY2012 cost and schedule metrics indicate a Cost Performance Index and Schedule Performance Index slightly above the established fee threshold values, these numbers do not indicate the adjustment necessary to remove cost and schedule variances outside of NSTec's control. FY2012 Environmental Restoration (ER) Program scope was completed safely, compliantly and successfully with excellent overall cost and schedule metrics.

### Achievements

- Corrective Action Unit (CAU) 547 was completed in FY2012. A number of technical challenges were overcome to successfully complete this activity including obtaining designation as a less than hazard-category 3 facility, constructing an engineered cover down a crater slope, and finding an onsite alternative to purchasing custom casings.

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- Underground Test Area (UGTA) completed construction of three wells in FY2012 ahead of schedule and under budget. Significant technical challenges were overcome at ER-5-5 to successfully complete this well. Cost and schedule saving opportunities were identified and implemented at ER-11-2 and ER-20-11 that eliminated the impacts from ER-5-5. In addition, these savings allowed construction of the FY2013 well to be started earlier than planned.

### Areas Requiring Improvement:

None reported

## 1.5 National Emergency Response Program Readiness and Effectiveness

### Introduction

NSTec significantly exceeded the established objectives of this performance measure thereby ensuring the readiness and effectiveness of the National Emergency Response Program to include: Aerial Measuring System (AMS), Consequence Management Response Team (CMRT), Search Response Team (SRT), Radiological Assistance Program (RAP) for RAP 0 and RAP 7 Team 3, the NA-45 Disposition Program, Emergency Communication Network (ECN), and Nuclear / Radiological Advisory Team (NRAT).

### Achievements

The contractor provided exceptional support and results to the National Emergency Response Mission. They exceeded expectations in critical areas both in mission execution and mission readiness related to National Emergency Response. Specific achievements above and beyond simply accomplishing the objectives include:

- Completed 22 FY2012 actions (4 ahead of schedule) assigned to NSTec from the After Action Report of the Japan emergency response. Actions required establishing new positions within the Consequence Management Home Team, developing position descriptions, conducting associated training, qualification and drills to measure the progress of personnel filling these positions, and recording the progress in Aerial Radiological Measuring System (ARMS).
- Remote Sensing Laboratory (RSL)-Andrews successfully designed, constructed, and operated a new Maritime Training facility for training NRAT personnel at RSL-Andrews and RSL-Nellis, allowing personnel to complete some of their required training on shore rather than at sea. The efficiencies gained by simplifying the logistics and time for this training resulted in cost savings.
- RSL-Andrews completed the full accreditation for their Sensitive Compartmented Facility (SCIF) and activated that facility.

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- RSL-Andrews NRAT–East successfully supported both the Republican and Democratic National Conventions providing Nuclear/Radiological scientists at the venues to interface with local and regional personnel and conducting Preventative Radiological Nuclear Detection activities.
- The AMS and Aviation support for NA-40 emergency response work was completed within cost and schedule despite a funding shortfall for labor in both AMS and Aviation. The contractor was able to cover these shortfalls through the achievement of a number of efficiencies within these programs.
- NSTec successfully completed the planning and conduct of all three phases of the National Level Federal Radiological Monitoring and Assessment Center (FRMAC) exercise held in Kansas City, MO between June and September 2012.
- The NSTec aviation organization also completed the International Standards for Business Aircraft Operations (IS BAO) audit and received the certification for a Stage 1 registration with the International Business Aviation Council (IBAC). This milestone represented over 18 months of transformational work and preparation to achieve this noteworthy certification. By achieving this recognized Global standard, NSTec demonstrated through an independent and robust audit process that our aviation standards, meets or exceeds a code of internationally accepted best practices in the business aviation industry.

NSTec successfully completed the first full scale Disposition Forensics Evidence Analysis Team (DFEAT) Marble Challenge exercise at various NNSS facilities. Leading up to the exercise, NSTec made all of the programmatically required modifications to facilities in Areas 6, 12, and 27. Additionally, NSTec moved the tunnel-related Disposition activities to another underground facility on the NNSS, thereby avoiding significant programmatic delays and expense of performing infrastructure and safety upgrades deemed necessary at the previous tunnel facility

### Areas Requiring Improvement

None reported

## 1.6 Cyber Security

### Introduction

The contractor met some of the award fee criteria in support of the cyber security program. The contractor successfully preserved the confidentiality, integrity, and availability of information and information systems.

### Achievements

The contractor successfully ensured the security of classified and unclassified information systems. The contractor recognized that the cyber security program was not meeting technical and programmatic expectations, and brought in corporate experts to rebuild a compliant Cyber Security Program. The contractor took immediate action to develop a path forward for: security



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strategy; roles and responsibilities; personnel; and risk management. This included bringing a new Cyber Security Management to establish priorities, realign existing staff, and integrate the existing Cyber Security Program with the Information Technology organization.

### Areas Requiring Improvement

While the security of the network was maintained, the effectiveness and efficiency of the cyber security program has not yet been achieved. Additional effort is still required to return the Cyber Security Program to a fully effective program.

### 1.7 Device Assembly Facility (DAF) Lead-In Piping Project CANCELLED

### 1.8 Material Control and Accountability (MC&A) Program

#### Introduction

The contractor provided exceptional support and results to the National Security Program. They substantially exceeded expectations in several critical areas and were engaged to ensure customer requirements were achieved.

The contractor significantly exceeded expectations for this project by exceeding the planned work level. This was accomplished on schedule and under budget.

#### Achievements

The MC&A personnel maintained 100% qualifications for the functions assigned. Accuracy of location and identity for tamper indicating devices were performance-tested and also verified during physical and random inventories. One error was found during the fiscal year resulting in a 99.9% for accuracy of location, still exceeding the 99% requirement. Proper application remains at 100%, which exceeds the 95% requirement.

#### Areas Requiring Improvement

None reported

### 1.9 Governance - Requirements Improvements

#### Introduction

NSTec exceeded almost all of the significant award fee criteria by successfully incorporating NNSA/NSO's findings into the NSTec issues screening process, converting NNSA/NSO Emergency Response Organization (ERO) positions to contractor staffing, and administering execution of the extensive Joint Assessment Schedule (JAS)/Master Assessment Schedule (MAS). The contractor provided a well-coordinated transition plan and made sensible quarterly proposals for other NNSA/NSO activity transitions and NSTec capably implemented them within budget and on schedule.

#### Achievements

NSTec improved transparency and eliminated duplicative paperwork by combining the separate NNSA/NSO and NSTec issues management systems into a single issues management system (caWeb) resulting in more efficiency system requiring less resources. NSTec enhanced search

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capabilities by multi-coding NSNA/NSO issues in the NSTec issues management system upon entry that allows for better trending and analysis. NSTec also provided federal staff with caWeb training as part of the issues management transition.

With the stand up of the newly formed Issues Screening Team, new challenges were identified. There was a steep learning curve for IST members relative to the evaluation of Findings and Opportunities for Improvement. This caused a significant number of issues to sit dormant for 30 days or more before Facility Manager (or Responsible Manager as defined by the caWeb process) took action to develop the necessary corrective actions for the issues identified in the assessment. NSTec addressed this issue in a timely manner towards the end of the fiscal year resulting in improved processing times.

NSTec met aggressive scheduling to transition responsibility of eliminating duplicate federal positions for the ERO. This resulted in the federal staffing consolidation of the Emergency Operations Center (EOC) into one solid entity, and improved response time.

NSTec continued to work with NNSA/NSO to administer the federal assessment schedule. NSTec now manages and maintains the approved federal master assessment schedule into a consolidated system Joint Assessment Schedule thus eliminating duplicative database tracking systems. NSTec developed a searchable and transparent federal library on the NSTec dashboard allowing for single point access for previous assessment results. Prior to this approach, the NNSA/NSO assessments were not centrally located or easily searchable.

### Areas Requiring Improvement

None reported.

## 1.10 Supply Chain Management Goals and Objectives

### Introduction

NSTec's support to the FY2012 Supply Chain Management Goals and Objectives was Excellent. The contractor substantially exceeded or exceeded all of the NNSA Supply Chain Management Center (SCMC) Performance Goals for FY2012.

### Achievements

The contractor exceeded the Target of eSourcing 20% of its Total Purchase Order (P.O.) Commitments Spend for the FY through the use of the eSourcing tool. As of the end of FY2012, the contractor had completed \$41.2M in eSourcing events against a Goal of \$30M. With 141.2M in Total P.O. Commitments Spend as of the end of FY2012, the \$41.2M also equated to an eSourcing tool utilization rate of 29.2%.

The contractor significantly exceeded the NNSA SCMC Performance Goal for FY2012 with regard to Auction/Bid Rank events, with 88 events being completed against a Goal of 25.

The contractor's robust use of the NNSA eSourcing tool has driven substantial savings for the enterprise. The contractor's gross savings achievement for eSourcing events as of the end of FY2012 was \$3.942M (of the \$41.2M), which represented a savings of 9.6%.

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The contractor significantly exceeded the NNSA SCMC Performance Goal for FY2012 for the “# of eStore catalog orders to suppliers,” with 1,338 orders having been completed against a Goal of 900.

The contractor actively participated on all of the SCMC commodity teams.

The contractor actively employed a majority of the existing SCMC agreements as a means to drive supply chain cost savings.

### Areas Requiring Improvement

None reported

## 2.0 FY2012 OBJECTIVES (Stretch)

### 2.1 BEEF Timing and Firing Systems and ATLAS

#### Introduction

The contractor completed both tasks, upgrading the Big Explosives Experimental Facility (BEEF) timing and firing system and developing an Augmented Test Logistics Assembly System (ATLAS) disposition strategy, in an exceptional manner without impacts to the NA-10, -20, and -40 programs.

#### Achievements

NSTec addressed the key metrics of the Global Positioning System (Symmetricom) Timing and Firing system to show dramatic improvement over the old method of timing and firing techniques as well as provided the client community with the capability to allow for 100 nanosecond timing and higher quality data capture. The system was finished several months ahead of schedule and approximately \$100K under budget. It was used with excellent results on Forseti One and Two in May 2012. The new GPS Timing and Firing system will provide customers and clients with a more accurate method of acquiring data from shots that will in turn lead to better experimental capability for the NNS.

The development of a strategy for ATLAS disposition required more detail and was more in depth than anticipated. The Continuous Improvement Plan (CIP) provided a first detailed look at a facility that has been in cold standby since June 1, 2006. It also included a thorough review of potential use of the facility by others. NSTec’s approach to the CIP provided analysis of the facility’s current condition and looked at innovative and efficient ways to dispose of large quantities of dielectric oil and equipment. The CIP provided a rough order of magnitude (ROM) estimate that included a scope statement, assumptions, and a schedule for the disposition plan. NSTec formed an integrated team from across the organization comprised of the Readiness and Technical Base Facilities OR Readiness in Technical Base and Facilities (RTBF) project manager, cost analyst, facility manager and other SMEs to walk down the facility. The proposed Disposition Plan and recommendations are thorough and the ROM and its associated documents, including a cost benefit analysis, were over and above the requirement to develop the CIP and will be a significant benefit to assist in the decision process.

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### Areas Requiring Improvement

None reported

## 2.2 Advanced JASPER Diagnostics

### Introduction

The contractor successfully designed, fabricated, tested, installed and operated radiometry, an advanced diagnostic in the JASPER facility that has provided exceptional data in support of the Stockpile Stewardship Program.

### Achievements

JASPER has been providing critical material performance data to the Stockpile Stewardship Program since the first plutonium shot in FY2003. Radiometry is a key addition to the existing diagnostic suite and provides the Stockpile Stewardship Program with an entirely new data set, previously unobtainable, that enables the Scientists to further their knowledge of material of interest under various temperature and pressure regimes. Delays in completing the radiometry trailer installation due to design and construction issues caused the execution date to slip requiring the incurrence of overtime. However, once resolved JASPER Shot 100 was the first special nuclear material experiment that employed this diagnostic and the data obtained in this experiment was exceptional and has the potential to change the Scientists' understanding of material behavior that is programmed in computer simulations of weapons performance. The accuracy of the data from JASPER is unprecedented and comes at an extremely affordable cost.

### Areas Requiring Improvement

None reported

## 2.3 Security – Classified Footprint Reduction

### Introduction

The contractor provided exceptional execution in reducing the site security footprint to include reducing unnecessary facilities and surplus material by over 3.76%.

### Achievements

The contractor reduced unnecessary facilities and surplus materials (classified parts, documents, vault type rooms (VTRs), etc) to ensure a “cradle to grave” reduction of classified matter. After a significant security footprint reduction in FY2011 of 10.35%, this performance measure was established as a stretch measure with a 2% reduction goal in order to encourage continued reductions. NNSA/NSO considers a reduction of over 3.76% to be Excellent performance as defined in the FY2012 PEP.

### Areas Requiring Improvement

None reported

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### 3.0 SUSTAINED PERFORMANCE AREAS (Essential)

#### 3.1 Stockpile Stewardship Experimental Program

##### Evaluation Summary

This measure provides the customers' evaluation of NSTec's performance in accomplishing programmatic work supporting the Laboratories activities in areas such as ES&H, Communications, and Teamwork. This area was consistently evaluated highly satisfied or satisfied throughout the year with only five Dissatisfied and no Highly Dissatisfied ratings throughout the year. NSTec promptly addressed all issues identified through the Dissatisfied ratings. The overall evaluations remained in the high 90% range throughout the year demonstrating a high level of customer satisfaction in NSTec's performance.

NSTec sustained the effectiveness of the Stockpile Stewardship Program.

#### 3.2 Nonproliferation Test & Evaluation

##### Evaluation Summary

NSTec sustained the effectiveness of the Nonproliferation Test and Evaluation Program through compliance of NNSA HQ & NNSA/NSO requirements in support of NA-22 strategic planning initiatives. NSTec initiated system-wide improvements to facility and maintenance availability and costs where they intersect with NA-22 equities. They successfully executed the Benso Solids Test in June 2012. Nearly all FY12 tasks were accomplished within budget.

#### 3.3 Safety and Health

##### Evaluation Summary

Throughout FY2012, National Security Technologies (NSTec) has successfully maintained a safe and healthy work environment through sound operations performed in an efficient and effective manner in support of mission objectives.

NSTec achieved Voluntary Protection Program (VPP) Star recertification for the Nevada National Security Site (with Superior Award) and Livermore Operations (with Star of Excellence Award). In addition, NSTec received initial VPP Star certification for Los Alamos Operations.

In FY2012, NSTec achieved a significant reduction in the Total Recordable Case (TRC) Rate and the Days Away from Work, Restriction or Transfer (DART) Case Rate, when compared to the previous Fiscal Year. At the end of FY2012, NSTec average TRC was 0.62, which is approximately 68 % lower than the FY2011 average (1.84). At the end of FY2012, NSTec average DART was 0.05 which is approximately 93% lower than the FY2011 average (0.56).

The NNSA/NSO continually monitored a number of safety and health metrics and performed operational awareness activities, shadow assessments, and formal assessments. As a result of

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these oversight activities, it is clearly evident that NSTec continues to maintain an effective Worker Safety and Health Program.

### 3.4 Environmental Protection

#### Evaluation Summary

NSTec demonstrated excellence in environmental performance by sustaining an effective Environmental Management System (EMS) that continues to meet applicable laws, standards, and regulations through implementation and maintenance of the systems, programs, and processes described in the contractor's approved Integrated Safety Management System (ISMS)/EMS Description documents.

NSTec maintenance of International Organization for Standardization (ISO) 9001 and 14001 certifications was affirmed by their successful performance in two Lloyds Register external surveillances conducted during Fiscal Year .

Performance in this area remained at this satisfactory level throughout performance period.

### 3.5 Emergency Management

#### Evaluation Summary

NSTec sustained their level of performance and received a satisfactory performance rating for Emergency Management in FY2012. The contractor successfully met all the emergency management performance objectives ahead of schedule and exceeded expectations.

The contractor supported and participated in cross-learning/information-sharing activities with external organizations and other DOE/NNSA sites to demonstrate sustainment and continuing program improvement. NSTec participated in the Emergency Management Issues Special Interest Group (EMI/SIG) U.S. Department of Energy (DOE) sponsored conference; planned and conducted four workshops, six emergency management topical presentations, and moderated a facility preparedness program benchmarking session.

NSTec successfully planned and executed three high-hazard facility Full Scale Exercises and three Functional Exercises. The exercises documented and validated met all targets within the exercise metric. The multi-facility Tremor 12 Full-Scale Exercise met HQ's Beyond Design Basis (BDB) requirements. The success was noted by the Defense Nuclear Facilities Safety Board and the LOCAS Affirmation Team who evaluated the BDB requirements. NSTec continued to enhance efficiency by incorporating Continuity of Operations (COOP) activation and response into NNSC exercises.

NSTec successfully implemented the Hazard Assessment Risk Mitigation (HARM) program and the NNSC Initial Response Guide (IRG). The HARM has increased efficiencies in conducting hazards analysis calculations from days to hours, exemplifying program improvements and enhancements. The IRG demonstrated its program usefulness and expedited the event categorization, classification, and protective actions. Under the 'OneNNSA' concept, NSTec collaboratively worked with the Nevada Enterprise (NvE) partners, which consists of

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NNSA/NSO, NSTec, Site Contractors and on-site Laboratories, to accomplish NNSA/NSO related mission activities. Independently, they developed and conducted across the enterprise nine Workplace Violence and Active Shooter Awareness Campaign events in FY2012.

### 3.6 Facilities and Infrastructure

#### Evaluation Summary

NSTec met or exceeded all baseline metrics for this performance objective. Specific to the energy program, targets included meter installation, energy intensity reduction, potable water reduction, petroleum use reduction, and renewable fuel usage increase. Other targets were met for facility management, backlog management, sustainment investment, and work package management.

NSTec provided all key deliverables for energy management to include the Site Sustainability Plan and the Annual Metering Plan. NSTec met the interim targets toward the achievement of the 2015 DOE sustainability goals. Of particular note was NSTec's exemplary management of the Headquarters funded work to install power and British Thermal Unit (BTU) meters which allowed for an additional 12 power meters and 7 BTU meters to be installed.

NNSA HQ identified NSTec as "best in class" in documenting and providing relevant and useful information in Portfolio Manager, to include extensive metering data. With an out-of-the-box and bold approach (the Green Reaper), NSTec continues to use innovative yet effective approaches to encourage the programs at the site to participate and adopt sustainability. General Services Administration (GSA) granted NSTec permission to participate in the GSA's Plug In Electric Vehicle Pilot Program. This program was/is the first of its kind, and no other DOE site was selected to participate.

NSTec's performance for this performance objective exceeded the performance from the previous fiscal year.

### 3.7 Project Execution

#### Evaluation Summary

NSTec's performance remains satisfactory in this functional area. The contractor met the first target objective by executing projects at the Direct Program level within NNSA/NSO approved Baselines cost and schedule performance thresholds. NSTec met the second target objective to maintain compliance of their Earned Value Management System (EVMS) Certification by performing two required management assessments to ensure effective implementation of their EVMS is in compliance with American National Standards Institute/Electronic Institute of America (ANSI/EIA)-748 guidelines.

NSTec continues to face challenges executing small projects (e.g. P300 Water Tank, JASPER radiometry trailer installation, NPTec Tuffshed installation, RITI, and Project 213). The continued lack of execution on small but very important projects is costing the NNSS customer work that could be coming to NNSS but is going other places.

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NSTec is being proactive in trying to make improvements through training and self assessments. NSTec commissioned a Parent Organization Oversight Committee to conduct an external review for the Argus project due to schedule delays and an increase in cost. This demonstrates commitment to continuous improvements by identifying and communicating issues consistently to various levels of NSTec management and NNSA/NSO.

### 3.8 Security Operations SAT

#### Evaluation Summary

The contractor maintained an effective and efficient Safeguards and Security Program throughout the year, managing and operating functions to support successful mission accomplishment. The contractor exceeded many of the expectations for this project including specific objectives and metrics in Material Control and Accountability, Classification Support, Information Security protection and Incident Management. This was accomplished on schedule, under budget and through the integration with other NNS Security Contractors.

Performance in this area was sustained throughout the evaluation period.

### 3.9 Low-Level/Mixed Low-Level (LL/MLL) Waste Receipt Capability

#### Evaluation Summary

NSTec demonstrated consistently strong performance in the operation and management of the Radioactive Waste Management Complex during Fiscal Year 2012. This performance resulted in the safe disposal of over 827,000 cubic feet of low level and mixed low level waste at the Nevada National Security Site. Authorization basis and applicable disposal requirements of the DOE Waste Generators were fully met. Waste consistently complied with waste acceptance criteria. Regulatory and programmatic milestones were fully met and project risk was appropriately managed.

Performance in this area was sustained throughout the evaluation period.

### 3.10 Counterintelligence

#### Evaluation Summary

In FY2012, the contractor provided overall outstanding support and results to the Counterintelligence Directorate (CID). They have exceeded expectations in several critical areas and ensured that CID requirements were achieved.

The contractor supports all DOE/NNSA interests in Nevada under the DOE Counterintelligence (CI), Las Vegas Field Office (LVFO). This performance measure requires the contractor to “Detect, deter, and mitigate foreign intelligence collections and espionage efforts and international terrorist threats against NNSA personnel, classified and other sensitive programs, and information architecture”, and they have exceeded expectations.

LVFO accomplished all Cyber requirements, and provided exceptional support to the Investigations and the Threat Assessments & Analysis Offices. The SCIO and staff open and oversee investigative-related activities and document this activity appropriately. Responses to



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headquarters requests are substantive and timely. A substantial number of analytical products were produced while functioning under a non-optimal Information Technology environment.

During this period of performance, the contractor:

- Provided the following briefings to personnel:
  - 662 briefings and 176 debriefings to individuals traveling outside the country or hosting foreign nationals
  - 15 annual Counterintelligence (CI) awareness briefings to 708 individuals (CBT total 2077)
  - 37 CI/Cyber/Counterterrorism threat briefings to 661 individuals
  - 45 New Hire Orientation briefings to 329 individuals
- Conducted monthly joint briefings with the Nevada Intelligence Center for NNSA/NSO Executive Staff during their Executive Intelligence Briefings.
- Initiated monthly joint briefings with the Remote Sensing Laboratory Filed Intelligence Element providing current relevant threat information for emergency responders.
- Provided NNSS-oriented threat briefing to the Underground Nuclear Weapons Testing Orientation Program class as part of the curriculum.
- Assisted the NSTec Training Department in developing computer-based training covering the annual Security/CI Refresher Briefing in accordance with NNSA/NSO Assistant Manager for Safety and Security (AMSS) tasking. This product was produced on time and has been implemented, resulting in an efficient and reliable form of meeting this briefing requirement
- The LVFO SCIO was requested by CID to present the DOE CI Program Insider Threat briefing to the Human Reliability Program (HRP), annual workshop, held at the NSO in Nov 2011. The workshop was attended by over 126 individuals from throughout the DOE/NNSA complex. The briefing was lauded by those in attendance and personnel thanks for the professional presentation was passed to HQ IN-20 Director.
- The LVFO SCIO was requested to participate in the Security Awareness Special Interest Group annual meeting held in Santa Fe, NM. The LVFO SCIO presented a DOE CI Briefing on the Insider Threat Program for a total of 42 individuals from security entities throughout the DOE complex.
- U.S. Intelligence Community (USIC) and Law Enforcement Liaison
- Co-hosted with the local Federal Bureau of Investigation (FBI) office the annual FBI Area Domain Program symposium held in Las Vegas, Nevada.
- The LVFO SCIO was selected to attend the first DNI Representative Meeting held at the FBI Los Angeles Field Office. This meeting was attended by members of the US Intelligence Community to discuss ways of communicating and sharing information. This is a high priority of the DNI and is established as a quarterly meeting.
- Attended the FBI Region 9 Regional Counterintelligence Working Group hosted by the FBI in Las Vegas, NV and San Diego, CA
- Re-organized, and hosted a Nevada Complex “Insider Threat “ working group, developing a CI related endeavor of interest to the Nevada Complex and meeting requirements from HQ DOE IN-1

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### 3.11 Business Operations

#### Evaluation Summary

NSTec demonstrated consistently strong performance in the areas of budget formulation & execution, business management, financial management, human capital management, legal management, property management, public affairs, records management, and supply chain management. Performance in all of the Business areas was sustained throughout the evaluation period.

All areas except for legal management and public affairs were monitored and evaluated against a set of pre-established metrics. With the exception of a couple of instances, NSTec met or exceeded the baseline metrics for the various performance areas. In those instances where NSTec did not meet the established baseline metric, this did not indicate a degradation in performance from the previous evaluation period, but rather an inability to meet a stretch performance goal or as a result of a situation out of NSTec's control.

NSTec Legal provided continuing comprehensive legal management updates, appropriate coordination and litigation reports to NNSA/NSO, with associated information and documentation, sustaining and at times exceeding the level of NSTec Legal's performance at the beginning of the year in this area.

NSTec Public Affairs provided continual public affairs, intergovernmental, and tour coordination to NNSA/NSO in a sustaining level throughout the performance year. Specific areas that exceeded were: Science Bowl coordination and conduct; establishment of video editing and production; and consolidation of "SiteLines" into "*oNeVoicE*".

### 4.0 GENERAL MANAGEMENT (Essential)

#### 4.1.1 Institutional Management

The Institutional Management performance measure was expanded this year to include on-going areas needing improvement and the expectation of NSTec's Senior Management to improve their enterprise integration between mission and operational functions as a key component of identifying effective changes. This measure was assigned a significant amount of fee. It is important to note that in the development of this measure, it was recognized that the efforts undertaken by NSTec will span a multi-year period in order to ensure that the institutionalization of the changes needed to enhance the contractor's performance can be fully validated as to their effectiveness. The overall performance of NSTec's senior management during this period was deemed Very Good.

The contractor was expected to conduct business using an institutional management approach to meeting contract requirements that focused on proactive issue identification and resolution, demonstrable efficiency gains, and securing new work to support national security needs to sustain the NNSS as a viable national resource. We expected the contractor to operate as an

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integrated organization that makes effective use of resources, demonstrated through key metrics, to effect needed improvements and to achieve cost, scope, and schedule efficiencies across all organizational elements while successfully accomplishing NNSA/NSO mission & operational requirements without compromising quality, safety, and security. Overall, NSTec significantly exceeded many of our expectations by identifying issues, developing paths forward to overcome these issues, and in some cases, demonstrating a number of improvements throughout the year.

During the evaluation period, NSTec pursued continuous improvement with company-wide attention to systemic issues. NSTec further integrated resources throughout the company and other organizations in the NvE and DOE complex to realize cost, schedule, and resource efficiencies. In an effort to generate new work for national security, NSTec began mapping a strategic plan for future years and NSTec leadership and corporate partners invested in leadership development. Specifically:

- Early in calendar year (CY) 2012 after discussions with NNSA/NSO Senior Management, the new NSTec President began to address recurrent issues/concerns that had been identified. A thorough assessment of the entire NSTec organizational operation was conducted to include obtaining inputs from external customers. After careful analysis of the issues identified as a result of this assessment, the NSTec Senior Management Team developed “Integration Challenge Themes” (ICTs) in order to provide an “integrating vehicle” to demonstrate NSTec’s corporate ability to manage itself in a systemic and coherent manner. The ICTs are:
  - Program Management,
  - Corporate Functional Management,
  - DAF Integration,
  - Sustainable Assurance,
  - Strategic Site and Business Development, and
  - High-Hazard Facility Pilot.

NSTec made very good progress in their progress toward institutionalizing needed changes/improvements in various areas.

- NSTec initiated an organizational realignment in order to:
  - more effectively integrate resources,
  - improve integrated planning to optimize mission, operations, safety, and security within operational facilities,
  - improve integration with other NSO contractors and the NSTec staff, and
  - improve communication with other NSO contractors, federal staff, and the NSTec employees.

The organizational realignment phased out the Chief Operating Officer position and established two Vice President (VP) positions – VP for Program Integration and VP for Operations. The VP for Program Integration will ensure program execution is integrated across program directorates through cross-utilization of personnel, leveraging of capabilities and facilities, and coordinated program and business development. The VP for Operations will ensure that all institutional support elements integrate with each other

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and provide integrated support to programs and projects as dictated by mission priorities. Additional management changes to optimize the overall management structure are planned for the future.

- NSTec implemented enhancements to the company dashboard, and associated metrics to better identify risk and elevate concerns to management in a timely manner.
- NSTec provided the most candid and transparent self-assessment ever presented being comprehensive, yet balanced, providing an accurate assessment of achievements and areas needing improvement and actions taken to address those improvement areas.

Other Key highlights for this year included:

- Based on the importance of successful completion of Gemini, NSTec senior management made Gemini the number one priority in the company. With this management focus, NSTec was able to reprioritize a 10 million dollar shortfall and overcome high-risk technical issues while integrating tasks across the company, the NvE, and the laboratories. The Gemini team successfully executed the first confirmatory experiment on August 27, 2012, and acquired data at a level never before seen in the subcritical arena. NSTec also met all of their Program MRT milestones.
- A new diagnostic, a combination of a Multiplexed Photonic Doppler Velocimeter (MPDV), winner of an R&D 100 award, and a “fisheye” optical probe, developed and manufactured by NSTec, were successfully tested and used in the Gemini confirmatory experiment. This diagnostic resulted in the capture of an unprecedented amount of data and represents millions of dollars in savings compared to the previous approach.
- Ten experiments (six involving plutonium) were successfully executed at the Joint Actinide Shock Physics Experimental Research (JASPER) facility. JASPER Shot #100 was executed September 25, 2012. This experiment was the first to employ the new Radiometry diagnostic and the data obtained was exceptional and has the potential to change the scientific understanding of material behavior in the current computer simulations of weapons performance.
- NSTec was instrumental in the design and fielding of two primary National Ignition Facility diagnostics, and integrated resources across the NSTec complex to support the first university-driven planetary sciences experiment.
- NSTec completed two operational cycles at U12u supporting U.S. nonproliferation activities.

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- X-Tunnel was opened and upgraded for chain of custody demonstrations, and all major components were installed to support the laboratories' demonstrations for chain of custody at the Baker Site to support potential future arms control activities..
- The dual Forseti shots at BEEF demonstrated NSTec's program planning and execution integrating multiple agencies and functions.
- NSTec met the challenge to accelerate implementation of the alternative solution to U-233 disposition endorsed by Deputy Secretary Poneman, by coordinating across several organizations to reprioritize the program materials, completed all of the required authorizations, and received, repackaged and staged 126 canisters in 8 months.
- The NSTec Aviation organization was awarded the FAA Aviation Maintenance Technician (AMT) Diamond Award of Excellence.
- The NSTec aviation organization completed the International Standards for Business Aircraft Operations (IS BAO) audit and received the certification for a Stage 1 registration with the International Business Aviation Council (IBAC). This milestone represented over 18 months of transformational work and preparation to achieve this noteworthy certification. By achieving this recognized Global standard, NSTec demonstrated through an independent and robust audit process that our aviation standards meet or exceed a code of internationally accepted best practices in the business aviation industry.
- The Cutthroat Trout portable laboratory concept demonstration for NA-20 was an example of excellence in integration of effort across NSTec organizations, as well as across multiple DOE laboratory organizations.
- CTOS trained more than 13,000 national, state, local, and military responders this year.
- The Integrated Standoff Inspection System test was executed at the Radiological/Nuclear Countermeasures Test and Evaluation Complex (RNCTEC) for the Defense Threat Reduction Agency, providing a new direction for collaboration in Work for Others.
- For the first time, NSTec developed a Device Assembly Facility (DAF) schedule that integrated and provided visibility into DAF operations, DAF missions, and DAF construction elements. This integrated planning supported better DAF resource utilization in mission execution across the NvE and laboratories.
- Met or exceeded all baseline metrics in the Sustained Performance Areas to include Stockpile Support, Nonproliferation Test & Evaluation, Emergency, Environmental

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Protection, Facilities & Infrastructure, LL/MLL Waste Receipt, Projection Execution, Safety & Health, and Security, Counterintelligence and Business Operations.

- The NNSA Affirmation Review that began in March 2012, ended with the issuance of the final report in June 2012, concluding that NSTec had effectively implemented CAS. NSTec successfully prepared for and completed Affirmation in accordance with the requirements of NAP-21 which demonstrated NSTec has increased levels of transparency with NSO through open communications via partnership meetings, expanded metrics and Dashboard usage, and alignment of functional and mission areas for better tracking and trending of issues.
- Significant changes to the NSTec Dashboard were made to improve its content, quality, and usability. Health indicators and alerts were implemented, leading indicators and sustained performance markers were assigned, and a capability was developed to display metrics by functional area.
- NSTec successfully completed the upgrades to the Mercury area electrical power distribution system, along with developing an Integrated Power Infrastructure Mapping System.
- NSTec achieved Voluntary Protection Program (VPP) Star recertification for the Nevada National Security Site (with Superior Award) and Livermore Operations (with Star of Excellence Award). In addition, NSTec received initial VPP Star certification for Los Alamos Operations.
- NSTec maintenance of International Organization for Standardization (ISO) 9001 and 14001 certifications was affirmed by their successful performance in two Lloyds Register external surveillances conducted during Fiscal Year .
- NSTec established the Strategic Development Office (SDO) to institutionalize the principle that Business and program development is a corporate-wide imperative, equally engaging all of NSTec's programs and disciplines. NSTec's business and site development approach will focus on the entire program portfolio to ensure alignment driven by NSTec's Strategic Plan.
- NSTec implemented several major initiatives to consolidate duplicative functions and services being performed by NNSA/NSO and other NvE contractors. This action enabled the initiation of efficiency gains in the operation of the site by using and improving existing contractor processes to perform tasks previously accomplished with federal resources or duplicated by other site contractors.

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- By the end of the FY, NSTec's Excess Property Clean-up Initiative had processed over 1,800 line items (with an acquisition cost of greater than \$22M) of excess property for screening to other agencies for reuse or sale. Over \$511K in revenue from was generated from the sale of excess property in FY 2012.
- In support of Weapons Dismantlement and Disposition, NSTec completed Phase 1 of the Pilot Project to accept legacy classified waste at the NNSA, demonstrating the ability to dispose of classified components without sanitization.

While NSTec demonstrated excellent progress in several areas, one area of emphasis included in the Institutional Management performance measure was project planning and execution. One project which is receiving significant NNSA HQ attention is the Argus project. While this project has significant issues, it is important to understand that NSTec was one of four contractor entities responsible for the planning and execution of this project and was only responsible for \$2.25M of the original \$8.87M project value. In January of 2012, it became clear that the project was not executable as planned, for a multitude of reasons including Davis–Bacon jurisdiction between the NNSA/NSO Security Contractor (WSI) and NSTec employees which severely impacted costs. At this point NNSA/NSO, in conjunction with NA-70, put the project on pause and provided contracting officer direction to NSTec that they would be responsible for integrating and executing the entire set of construction activities associated with the project. Based on NSTec's response to this direction, we deemed that NSTec effectively took over leadership of the project and developed a credible path forward for execution. At the end of the performance period, NSTec was awaiting direction from NA-70, through NNSA/NSO, on when they could re-initiate the project.

### 4.1.2 Formality of Operations

#### Introduction

The Formality of Operations performance objective required the contractor to implement specific improvements in configuration management and conduct of operations. NSTec provided excellent support and high-quality deliverables, exceeding almost all of the significant award fee criteria within overall cost, schedule, and technical performance requirements of the contract and as defined and measured against the criteria in the award-fee plan for the award fee evaluation period. The contractor exceeded expectations associated with configuration management by fundamentally changing behaviors to ensure program requirements were achieved across all nuclear facilities. The contractor essentially met or exceeded all significant performance plan commitments in the subject area of Conduct of Operations.

#### Achievements

NSTec implemented DOE O 422.1 and conducted the Conduct of Operations Safety Management Program management assessments as specified in the Performance Evaluation Plan. NSTec submitted eight Conduct of Operations Applicability Matrices to NNSA/NSO for approval. Due to a process whereby draft forms of the applicability matrices were reviewed by

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NNSA/NSO personnel prior to official submittal, all eight matrices were approved during the initial review cycle with only minimal comments requiring resolution.

All nuclear facilities developed and approved a Configuration Management Implementation Plan, and NSTec developed a site-wide Safety Management Program (SMP) for Configuration Management (CM) using the NSTec procedure CD-ENGR.002. Training was performed at all nuclear facilities with numerous employees to ensure that the concepts and understanding of the CM SMP are well understood and institutionalized at the nuclear facilities. These briefings are mandatory for the training and qualification program for Cognizant System Engineers (CSE), system engineers, and maintenance engineers.

The most significant achievement is what appears to be a dramatic and very quick shift in behavior in understanding and execution of configuration management of safety Structure, System, and Components (SSC) in the NNSS nuclear facilities. The year's activities and demonstrated evidence presented during an independent assessment verified that behaviors enable a more formal process. The assessment team noted consistency in understanding across the enterprise. Interviews were completed and the team concluded that "overwhelming evidence" exists to demonstrate that CM was implemented consistently in the nuclear facilities in accordance with expectations of DOE-STD-1073-2003, "Configuration Management."

### Areas Requiring Improvement

NSTec conducted an assessment of CM for all nuclear facilities to ensure implementation; the objectives developed for this assessment consisted of the five elements of CM. The assessment report passed all five objectives. Safety System Oversight Assessments continue to encounter minor issues with CM based on implementation of surveillance requirements, and the conduct of USQD's (which were not part of the formal NSTec CM assessment).

During FY2012, NNSA/NSO conducted a site-wide assessment of Conduct of Operations under DOE O 422.1. The assessment concluded the following; the overall performance of NSTec meets the majority of the assessment objectives associated with DOE O 422.1 implementation. However, there is needed improvement for Conduct of Operations at a number of the facilities assessed. Many of the issues are a result of inaccuracies associated with the Conduct of Operations Applicability Matrix and the flow-down to facility procedures. Also, it was noted that the contractor's Contractor Assurance System (CAS) is not mature in the Conduct of Operations Safety Management Program Functional Area.

In addition, many of the Findings from the NNSA/NSO site-wide assessment of Conduct of Operations resulted in issues similar to those of last year's (FY2011) assessment in the area of Technical Procedure adherence, Log-keeping, and Lock-Out/Tag-Out sections of DOE O 422.1.

### 4.1.3 Management System

#### Introduction

NSTec significantly exceeded expectations by analyzing weaknesses in its company directives, establishing a new Trending and Analysis Forum (TAF), and initiating a joint Issues Screening Team (ST). NSTec successfully completed all the sub-measures on time or ahead of schedule.



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### **Achievements**

NSTec has demonstrated effective analysis of CAS data through various forums. These forums have enhanced NSTec's ability to analyze trends and take corrective actions. Improvements, especially in dashboard transparency within NSTec, allowed for review of functional/mission area metrics on a routine basis. NSTec expanded its trending capabilities by developing a system to multi-code functional areas within its issues management system in line with NNSA/NSO's functional areas, allowing for further transparency between federal and contractor staff and missions.

NSTec was proactive in reviewing the improvement actions listed in the FY2011 Annual Analysis Report (AAR). The improvement opportunities were also incorporated as lessons learned in the FY2012 AAR. NSTec institutionalized work control and planning assessment criteria and guidelines to gauge program performance with Integrated Safety Management Systems, Quality Assurance, and Work Control. NSTec completed a self assessment identifying areas for improvement during FY2013.

NSTec developed criteria and conducted management assessments on Specific Administrative Controls throughout the fiscal year. The assessments followed the approved joint assessment schedule and were routinely shadowed by federal staff. The results of the assessments demonstrated a comprehensive look at nuclear grade systems and operations.

### **Areas Requiring Improvement**

While the AAR included analysis by functional area, it did not include a company-wide cross-cutting trending and analysis section to determine any potential issues or trends for improvement in the next fiscal year.

#### **4.1.4 DAF Readiness**

##### **Introduction**

The contractor made exceptional improvements in the overall planning to address both short and long-term issues at DAF. For the first time, an integrated contractor approach to resolving deficiencies was developed and implemented.

##### **Achievements**

Through the new DAF Integrated Planning Process, NSTec made significant progress in understanding the issues and is starting the process to prioritize and address the most pressing issues impacting DAF. The DAF integrated planning process developed by NSTec in FY2012 matured through the year as was demonstrated by their submittal of the FY2013 DAF Integrated Plan. Concurrently, NSTec successfully executed an increased level of programmatic work. The process retains the flexibility to deal with long-standing and critical-emerging issues while at the same time reducing the backlog of open items and increasing the operational tempo for improved mission execution. Challenges remain but the framework to address them is in place.

NSTec instituted a "maintenance stand down" – a multi-week block of time coordinated with the user community that enabled maintenance activities to be conducted efficiently without

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impacting programmatic activities. The success of the initial stand down resulted in formal institution of a regular process that is reducing maintenance backlog.

Notable is the approach to replacing the fire lines. NSTec developed different methods to replace the deteriorated pipe depending on the location of the lines and depth of burial. Several of the fire lines are buried 40 or more feet posing various challenges. In this case, NSTec's RTBF organization, in coordination with other NSTec organizations, determined the best approach was to use a combination of drilling a shaft adjacent to the facilities and drilling an opening through the facility wall. The work is set up to address emerging issues with the fire lines so that service to key facilities can be restored if needed

### Areas Requiring Improvement

None reported

#### 4.1.5 Facility Maintenance Performance

##### Introduction

NSTec has exceeded many of the award fee criteria; however, issues remain in the area of Conduct of Operations compliance related to maintenance (reference NSTec Assessment MA-12-G070-001).

##### Achievements

There were four emphasis areas in this PO. NSTec completed three of the emphasis areas [Maintenance Performance, Optimizing DAF Preventative Maintenance (PM) Program for Increased Sustainability, and Maintenance Engineers Training] in a manner that provided a significant benefit to the NNSS. NSTec identified a knowledge gap related to integration of nuclear engineering systems and balance of plant systems. NSTec was able to ensure full qualification was met for the added resources to fill the gap.

The preventative maintenance completion rates for Mission Dependent, Not Critical and Mission Critical facilities exceeded the goals. NSTec utilized Reliability Centered Maintenance analysis to identify several instances of preventative maintenance tasks at the DAF that could be replaced by predictive maintenance tasks to increase reliability and decrease cost. NSTec completed the fourth target (Improve Conduct of Operations Compliance) by performing a Management Assessment and approving Management Assessment Report MA-12-G070-001.

##### Areas Requiring Improvement

The overall identified rate of procedural noncompliance remained approximately the same as in FY2011, therefore, no improvement was demonstrated during this evaluation period.

The recent MA-12-G070-001 documented the performance regarding Maintenance related Conduct of Operations Compliance during FY2012 as compared to FY2011. Numerous issues regarding maintenance related to Conduct of Operations Compliance were identified by NSTec during FY2012. NSTec was unable to correct the procedural noncompliance during FY2012. NSTec identified this as a systemic problem and identified several corrective actions to address

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the continuous non-compliance issue. However, at this time, corrective actions have not been implemented long enough to be able to demonstrate effective response.

Communication and transparency of the systemic issue and associated corrective actions was not effectively conveyed to federal staff. These weaknesses and corrective actions were not documented.

### 4.1.6 Nuclear Safety Basis Implementation

#### Introduction

The Nuclear Safety performance objective required the contractor to implement improvements in safety basis development and management. In general, the contractor's overall performance was good, based on their demonstrated ability to meet technical performance requirements necessary to support NNS mission expectations.

#### Achievements

The quality associated with final safety basis deliverables was adequate based on NNSA/NSO technical reviews performed in accordance with the processes and requisite approval bases identified in DOE-STD-1104-2009, "Review and Approval of Nuclear Facility Safety Basis and Safety Design Basis Documents."

In accordance with expectations documented in DOE G 424.1-1B, "Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements," all Potential Inadequacies in the Safety Analyses (PISAs) in NSTec operated nuclear facilities were declared in a timely manner (i.e., within hours or days) subsequent to performing a reasonable evaluation of the conditions to confirm that the safety basis may not be bounding or otherwise inadequate. In cases where PISAs were expected, however not declared, NSTec facility management was able to clearly articulate reasonable justification supporting their technical positions.

In most cases, NSTec submitted acceptable Safety Basis Strategy (SBS) documents that described how the contractor would implement a graded approach that would result in cost-effective safety analyses, commensurate level of detail, and appropriate hazard controls to ensure adequate protection of workers, the public, and the environment. Final safety basis deliverables approved by NNSA/NSO typically met or exceeded the commitments documented in the associated SBS.

#### Areas Requiring Improvement

After a sustained period of improved performance (i.e., FY2011), fundamental errors were becoming common, causing more than the expected level of safety basis rework and negative schedule impact. The deficiencies (in most cases) were not self-identified by NSTec's internal quality assurance reviews.

During the evaluation period, NNSA/NSO identified a negative trend in safety basis performance. A contributing factor was NSTec's overhaul of their nuclear safety directives. The latest published directives have significantly weakened many of the important improvement initiatives implemented since the Safety Basis Improvement Initiative (SBII) was completed.

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There were limited cases where NSTec started work prior to receiving NNSA/NSO concurrence on the associated Safety Basis Strategy (SBS). Although schedule drivers may have required rapid turnaround of safety basis documentation, adherence to the agreed-upon SBS process is NNSA/NSO's expectation.

### 4.1.7 Criticality Safety

#### Introduction

NSTec was required to implement and maintain a fully compliant DOE O 420.1B Criticality Safety Program at the Nevada National Security Site (NNSS). NSTec made considerable improvements to the Criticality Safety Program (CSP) and exceeded some of performance expectations. However, the effectiveness of these improvements to ensure the program is maintained has not been evaluated. In addition, the program has not been fully implemented and integrated with all programs and stakeholders.

#### Achievements

NSTec hired a new CSP Manager. Through his leadership, the NSTec CSP and staff were fully integrated into all operations and facilities supporting Stockpile Stewardship and Environmental Management. This included establishing a schedule of walkthroughs and periodic inspections which have increased staff interaction with the facilities. However, the CSP is not fully integrated with the Work-for-Others (WFO) projects.

NSTec completed most of the corrective actions to address the issues identified in the NNSA/NSO FY2011 assessment. These include: establishment of a Criticality Safety Review Committee, revised procedures, and enhancements to training and full qualification of the Criticality Safety Engineers. While these appear to have resulted in considerable improvement to the NSTec CSP, an evaluation of the effectiveness of the corrective actions to implement and maintain a fully compliant program was not completed. In addition, NSTec has not fully implemented a criticality control review (CCR).

The NSTec CSP Manager spent considerable effort coordinating with Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL) to develop a NNSS Integrated Criticality Safety Program Description Document. The purpose of this document is to streamline Criticality Safety Practices for NNSS stakeholders, integrate performance measures, and establish common severity levels for conditions adverse to criticality safety. The document also contains an enhanced CCR process. Despite these efforts, this document was not finalized and approved primarily due to issues identified by LANL. However, at no time did NSTec Senior Management get involved to resolve the issues.

#### Areas Requiring Improvement

In early FY2012, numerous issues arose between LANL and NSTec regarding the implementation of the NSTec CCR process and elevation of controls to the Documented Safety Analysis related to the Godiva Assembly. These issues and the subsequent delay in the assembly of Godiva received significant attention at NNSA HQ and from the Site Office Managers at both Los Alamos Site Office (LASO) and NNSA/NSO. As a result, NSTec, LANL, and LLNL agreed to incorporate an enhanced and integrated CCR process into the NNSS Integrated

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Criticality Safety Program Description Document. Between February and the end of September, the NSTec Criticality Safety Program Manager, working with LANL and LLNL, developed multiple drafts and two final versions of the document and sent them out for review and approval. At no time throughout this entire process did NSTec Senior Management get involved and engage LANL and Joint Laboratory Office Nevada (JLON) Senior Management to resolve the issues. The failure of NSTec Senior Management to get involved contributed to the inability to finalize the document and implement the CCR process. NSTec Senior Management needs to coordinate with LANL and JLON Senior Management to resolve issues and obtain approval of the NNS Integrated Criticality Safety Program Description Document.

NSTec needs to fully integrate the Criticality Safety Program with the WFO Projects.

NSTec needs to evaluate the effectiveness of the corrective actions implemented to address the issues from the NNSA/NSO FY2011 assessment.

### 4.1.8 Quality Assurance

#### Introduction

NSTec exceeded most significant Performance Evaluation Plan commitments. The initiation of an NSTec Procedural Compliance Improvement Team was completed in this FY to define the scope and severity of corporate-wide procedure adherence and non-compliance weaknesses. NSTec has continued to implement and maintain a compliant and effective Quality Management System as indicated in a declining number of procedural violations and maintenance of their ISO certification/federal oversight.

#### Achievements

NSTec responded to this PO by projectizing the needed culture change to improve procedural compliance. A project manager was selected, a Procedural Compliance Improvement Team (PCIT) was formed, a Corrective Action Plan developed, and a Project Execution Plan documented.

Actions were implemented including benchmarking and Extent of Condition Review and Root Cause analysis. Several supervisory/management tools were developed to help supervisors and managers drive this cultural change throughout the workforce. NNSA/NSO Line Organizations report observing NSTec efforts to both improve procedural content and adhere to their processes.

In addition, a careful analysis of issues by NNSA/NSO over the past six quarters indicates a declining number of issues associated with procedural non-compliance.

#### Areas Requiring Improvement

Most corrective action plan deliverables for the PCIT were completed with only a few minor delays. Two corrective actions are overdue. The first is focused on the NSTec enterprise requirement flow-down system that provides traceability from requirements to implementing procedures and the other is a follow up employee survey to compare results against baseline.

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### 4.1.9 Engineering

#### Introduction

NSTec exceeded many of the significant award fee criteria and met the overall objectives of this performance measure. NSTec exceeded expectations to continuously improve their design execution methods. In particular, Engineering established processes to better define the level of effort required for projects and customers. NSTec engineering self assessments have been transparent and self critical.

#### Achievements

Engineering is proceeding with the development of a Nuclear Design Guide combining two of the issues raised by the Parent Organization Oversight Committee reviews conducted on Engineering.

Design Engineering continued to evaluate and reevaluate execution methods to improve performance. This included better definition of Design Engineering's responsibility during review of vendor submittals that have been professionally stamped. Engineering focused on getting the right level of effort through better planning and scope definition. Design Engineering held monthly meetings with customers to solicit feedback on engineering performance.

Nuclear Engineering improved the method of closing gaps and has currently closed 305 configuration management gaps during FY2012. Nuclear Engineering developed a staffing plan to address short-term and long-range resource issues. The plan included qualifications of CSEs to allow flexibility to support peaks of workload requirements amongst different nuclear facilities, which allowed an increased capability of CSE support as mission needs arise. NSTec now has qualified CSEs for all applicable safety systems across the NNSS with qualified back-ups. Nuclear Engineering identified various safety system metrics that relate to system operability, maintainability, and CM allowing NSTec to better identify system issues and take necessary actions to maintain overall system health. Nuclear Engineering implemented a procedure on conducting vital safety system assessments and system health reports. This procedure was implemented for eight (8) vital safety systems across the NNSS.

#### Areas Requiring Improvement

Quality and rework of engineering products continued to be an issue. In addition, engineering responsiveness and cost are also on-going concerns.

NSTec conducted Vital Safety System (VSS) assessments, however, NNSA/NSO continues to identify a significant number of issues not identified by NSTec assessments.

CM is not mature enough at nuclear facilities to demonstrate institutional implementation.

## 5.0 MULTI-YEAR STRATEGIC OBJECTIVES (Stretch)

### 5.1 Governance Improvements

#### Introduction

NSTec exceeded almost all of the significant award fee criteria and met overall cost, schedule, and technical performance requirements to demonstrate cost savings and operational efficiencies; and to report all accomplishments achieved through the governance reform effort. The identified areas included Back Office Implementation & Process Improvements, New Business Development, and Reduction of North Las Vegas Campus Costs.

#### Achievements

The Back Office Consolidation opportunities identified in FY2011 were all successfully implemented. Federal and NvE contractor organizations are now able to utilize shared services provided by NSTec instead of each organization having to provide services separately. This was an intensive effort requiring close coordination with many elements of multiple contractors and NSO. NSTec submitted the annual NvE Governance Report which was accepted by NNSA/NSO.

NSTec successfully established a corporate-wide Strategic Planning Office (SPO) to align proposed and ongoing initiatives with NvE goals. NSTec established the framework and identified several new business lines that are expected to generate new funding opportunities in FY2013.

The North Las Vegas campus cost savings were realized in the amount of \$46,866 for a total of 11,528 square feet. Six buildings were closed out of the seven planned.

NSTec provided a validation summary of cost saving and cost avoidance claimed in the Governance Report for NSTec related items.

#### Areas Requiring Improvement

Integration of the Infrastructure Data Analysis Center (IDAC) into the SPO was poorly coordinated.

The North Las Vegas campus consolidation effort to complete the seventh building (A-12 which represents more than 1/3 of the square footage of the project) remains to be completed.

### 5.2 Requirements Flow-Down System Sustainment

#### Introduction

NSTec significantly exceeded the objectives of this multi-year performance measure. NSTec completed the development and implementation of a sustainment processes for a requirements flow-down system (DOORS) that provides traceability from requirements to implementing procedures.

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### Achievements

NSTec developed and implemented an aggressive plan to accomplish the targets for this performance objective. By the end of the evaluation period, NSTec validated the flow-down of requirements in DOORS through a management assessment. A change management module was implemented into the system to ensure proper configuration management of the data in the system. NSTec successfully closed 96% of the 1662 identified requirements gaps identified in 2011 and have developed corrective action plans to address the remaining gaps. In addition, 872 implementing documents were identified that were not linked to contractual requirements originally populated during the development of the system.

Through the evaluation period, NSTec demonstrated they are successfully using the system to demonstrate how contract requirements are being met. They demonstrated how the system is being relied on to perform assessments of compliance with requirements. The tool was also piloted at JASPER as a method to use an electronic tool to replace the manual paper system for DSA and TSR tracking at the facility. This was successful and an implementation plan was developed to expand this tool to other facilities.

Beyond the requirements in the PEP, NSTec reached out to other NNSA/NSO contractors and offered assistance with the implementation of a similar tool for their use in tracking contract requirements.

### Areas Requiring Improvement

None reported

## 5.3 Advanced Radiographic Source Development

### Introduction

NSTec provided excellent support to this multi-year measure that will contribute to the overall improvement in the development of X-ray diodes through various research and development activities to support planned subcritical and other experiments to support the Stockpile Stewardship Program.

### Achievements

NSTec provided excellent support for Cygnus radiographic diagnostic maintenance and R&D leading to performance enhancements, resulting in unprecedented radiographic images of the Castor confirmatory experiments. The radiographic data quality from Cygnus is providing unanticipated capability for weapon modeling when combined with MPDV data. Some of the data demonstrated the ability to distinguish physics models via their unique signatures in composite velocimetric comparison. Other data bounded the experimental errors within the data set itself by cross-comparison of independent measurements. Another benefit was the results influenced the design of future stockpile hydrotests to include massively parallel velocimetry measurements. This success led HQ to start planning for key activities for FY2013 including a white paper on a “dual-use” radiographic option for U1a experiments that might provide both low energy and high energy (capable of core punch) radiographic capabilities.



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### Areas Requiring Improvement

None reported

<b>ATI-01 Subcritical Experiments</b>	<b>MANDATORY</b>
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#### Introduction

NSTec performed all activities required to accomplish the key Level 2 milestone of executing Castor this FY in an excellent manner, overcoming various obstacles to achieve success.

#### Achievements

Numerous challenges were faced by NSTec, the procurement agency, in obtaining the experimental vessel due to manufacturing and welding issues caused by the special high-strength steel specified for the vessel as well as the small vessel size, which made welding the interior difficult. Through significant effort and coordination with the design agency, LANL, and the vessel manufacturer, the issues were successfully resolved. A new diagnostic, a combination of a MPDV, winner of an R&D 100 award, and a “fisheye” optical probe, developed and manufactured by NSTec, were successfully tested and installed in the U1a complex. The culmination of all these efforts led to the successful execution of Castor, the Gemini confirmatory, on August 29, , at 1801 hours in the U1a Complex. All diagnostic systems worked perfectly and data recovered was unprecedented including a record for channels of velocimetry recorded. All post execution activities were successfully carried out and work is underway to prepare for the subcritical experiment, Pollux, scheduled for execution late in the first quarter FY2013.

### Areas Requiring Improvement

None reported

<b>ATI-02 Line Oversight / Contractor Assurance System (LO/CAS) Affirmation</b>
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#### Introduction

The contractor exceeded expectations in this area by their timely and high quality achievement of the objectives, expectations, and milestones of this Award Term Incentive (ATI). NSTec worked with NNSA/NSO and HQ to achieve a successful LOCAS Affirmation confirmed by the NNSA/NSO Office of Manager with a minimal amount of identified recommendations for corrective action.

#### Achievements

NSTec conducted a joint NNSA/NSO and NSTec LOCAS Self Assessment in preparation for the FY2012 LOCAS Affirmation Review. The results of the assessment indicated NSTec met the requirements in most of the areas identified in the NA Policy (NAP-21) on Transformational Governance and Oversight. The identified recommendations and opportunities for improvement were tracked through closure and management validation. Most were completed and verified by NSTec management prior to the commencement of the LOCAS Affirmation by Headquarters. NSTec prepared and transmitted a Declaration of CAS Readiness for affirmation review on December 15, 2011 based on the Self Assessment results and corrective action status. NSTec continued through the remainder of FY2012 to refine and enhance CAS tools through the use of metrics demonstrating continuous improvement initiatives are working well.

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Based off the pre-planning conducted by NSTec and the follow up corrective action, NSTec was able to successfully prepare for the LOCAS Affirmation. NSTec participated in all aspects of the LOCAS Affirmation Review process over an 8-month period culminating in receipt of a declaration of Affirmation Ready systems by the NNSA/NSO Manager. The outcome of the Affirmation Final Report indicated that only a handful of recommendations were received for NSTec consideration. The majority of the recommendations were addressed and validated prior to the end of FY2012.

### Areas Requiring Improvement

None reported

### ATI-03 Cyber/IT Refurbishment

#### Introduction

The contractor exceeded nearly all the award criteria for developing a standards-based IT Governance Model that balances technical, organizational, and business risk to ensure that the investment choices taken by executive management evaluate the long term consequences for NvE customers. The contractor successfully executed a major project for the upgrade and expansion of the existing network infrastructure. This project was completed on time, on budget, and within scope.

#### Achievements

The contractor implemented a 40 Gigabyte network connection between the North Las Vegas Facility and the NNSC across new and existing fiber. Additionally the contractor upgraded the C-1 Data Center to redundant 10 Gigabyte connectivity, providing the necessary capacity for increased demands. These network upgrades exceeded Nevada Site Office expectations and provided the information technology architecture necessary to support new information technologies to the NNSC customers.

### Areas Requiring Improvement

None reported

### ATI-04 Functional Area Excellence

#### Introduction

The contractor exceeded expectations in this area through their timely and high quality achievement of the objectives, expectations, and milestones, as well as their delivery of additional value-added enhancements that exceeded the pre-defined objectives, expectations, and milestones of this ATI.

#### Achievements

The contractor exceeded expectations through many positive actions that the contractor completed in a high quality fashion, which collectively demonstrated their commitment achieving Functional Area Excellence. This included enhancements in the functionality and transparency of the NSTec Dashboard and the continued use of the NSTec Dashboard and

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related Contractor Assurance System (CAS) data to exhibit performance status and health of mission and functional areas. The Contractor also applied lessons learned and operational experience to enhance their Annual Analysis Report which was leveraged by NNSA/NSO management to ensure transparent understanding of performance in each of the various functional and mission areas.

### Areas Requiring Improvement

None reported

## ATI-05 Quality Grading

### Introduction

NSTec exceeded significant Performance Evaluation Plan commitments in the subject area of Quality Grading. Based on NNSA/NSO monitoring the entire effort throughout the year and reviewing the final revised procedures and forms, the recommendation is a score of “Pass.”

### Achievements

A new strategy for increasing the differential quality rigor between quality grade 1 and 2 was developed by a NSTec team representing key organization elements. The original concept depended upon software modification to the Procurement Data System. However, new direction freezing the Oracle data base for subsequent updates throughout FY2012 caused the team to reconsider the original concept and take a different approach. The team responded in a collaborative fashion resulting in a new strategy. The team implemented the strategy through the subsequent development of an extensive process flow diagram. Individual team representatives then identified needed revisions to NSTec procedures and forms covering the key areas of engineering, procurement, receipt inspection, and safety software. An NNSA/NSO review of this collection of NSTec procedures and forms found processes that effectively implement the planned strategic approach.

### Areas Requiring Improvement

None reported