Department of Energy
National Nuclear Security Administration
Washington DC 20585

OFFICE OF THE ADMINISTRATOR

December 4, 2018

MEMORANDUM FOR STEVEN J. LAWRENCE
MANAGER
NEVADA FIELD OFFI[redacted]

FROM: WILLIAM I. WHITE
ASSOCIATE PRINCIPAL DEPUTY ADMINISTRATOR

SUBJECT: Mission Support & Test Services, LLC (MSTS),
DE-NA0003624 Fiscal Year 2018 Award Fee Determination

The National Nuclear Security Administration (NNSA) has completed its assessment of MSTS performance of the contract requirements for the period of December 1, 2017, through September 30, 2018, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP). Based on assessments provided in the NNSA Performance Evaluation Report, award fee amounts are as follows:

	At Risk %	Available	Final	Percent
Goal-1: Manage the Nuclear Weapons Mission	30%	$ 4,555,100	$4,145,141	91%
Goal-2: Reduce Nuclear Security Threats	15%	$ 2,277,550	$2,072,571	91%
Goal-3: DOE & Strategic Partnership Projects Mission Objectives	6%	$ 911,020	$ 865,469	95%
Goal-4: Science, Technology & Engineering (ST&E)	4%	$ 607,347	$ 576,980	95%
Goal-5: Operations & Infrastructure	30%	$ 4,555,100	$3,871,835	85%
Goal-6: Leadership	15%	$ 2,277,550	$2,072,571	91%
Total	100%	$15,183,667	$13,604,566	89.6%

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

Fixed Fee	$0	$0
SPP (Fixed Fee)	$3,128,834	$3,128,834
Total Fixed Fee	$3,128,834	$3,128,834
Total Summary	**$18,312,501**	**$16,733,400**

National Nuclear Security Administration

Mission Support and Test Services, LLC

Performance Evaluation Report (PER)

NNSA Nevada *Field Office*

Evaluation Period:
December 1, 2017 –
September 30, 2018

December 3, 2018

Executive Summary

This Performance Evaluation Report (PER) provides the National Nuclear Security Administration (NNSA) assessment of Mission Support & Test Services, LLC (MSTS), performance of the contract requirements for the period of December 1, 2017 – September 30, 2018, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP). The NNSA took into consideration all input provided (e.g. CAS, Program Reviews, etc.) from NNSA Program and Functional Offices both at Headquarters and in the field.

Overall, MSTS exceeded expectations on most of Objectives and Key Outcomes with no significant issues or concerns. Excellent ratings were assigned to Goals 1 through 4 and 6, with a rating of Very Good assigned to Goal 5. MSTS made significant contributions to the enterprise by effectively performing across all of their mission lines while building a management focus on operational excellence. MSTS focused on effective contract start-up; safely and securely achieving mission results; improving operational excellence; making investments in infrastructure to support the NNSS mission; and increasing engagement with the Nevada Enterprise (NvE). Performance against the Goals summarized below resulted in an overall rating of Very Good and a score of 89.6% for MSTS.

Goal 1: Manage the Nuclear Weapons Mission EXCELLENT

MSTS exceeded most of the Defense Program objectives and Key Outcomes earning a rating of Excellent and 91% of the award fee allocated to this goal. MSTS completed all assigned science/stockpile and five infrastructure national Level 2 milestones and all MSTS actions on the *FY18 Defense Programs Getting the Job Done List*. MSTS took over all of the milestones on Dec. 1, 2017, making successful mission execution a priority at the NNSS and outlying locations. MSTS successfully executed stockpile stewardship (SS) experiments; continued development, implementation, and expansion of cutting-edge diagnostics; grew collaboration with the National Weapons Laboratories (NWLs); and effectively managed the U1a Complex, Joint Actinide Shock Physics Experimental Research (JASPER) facility, Device Assembly Facility (DAF), and the Dense Plasma Focus (DPF) Facility. These SS experiments and the suite of next-generation, transformational diagnostics developed by MSTS enable linkages between past underground nuclear tests, full-scale hydrodynamic experiments, subcritical experiments (SCEs), and materials property experiments for nuclear weapons predictive modeling and assessment of performance.

MSTS successfully enabled four Subcritical Experiments (SCE) series simultaneously, including engaging corporate partners to address procurement challenges on confinement vessels necessary for sustaining the SCE program. For Lyra, MSTS successfully executed Vega, the first SCE at U1a meeting Hazard Category 2 nuclear facility requirements. At 100% data return with over a million, unprecedented, data points collected, Vega was especially significant given the M&O contract turn-over that occurred in the same time frame as the SCE execution. For Sierra Nevada, MSTS worked through significant diagnostic challenges on Cygnus and still successfully executed Lamarck one month ahead of schedule with 100% data return; successfully assumed some of the traditional NWL roles for experiment preparation to facilitate continuity and efficiency with the return of LLNL to the SCE program; and is completing experiment preparation for the Ediza SCE ahead of schedule. For Red Sage & Nimble, MSTS effectively initiated integrated planning and experiment design incorporating new systems, vessel components, and diagnostics while successfully obtaining exceptional data from the five explosive drive measurement tests at LANL. However, in an effort to support acceleration the SCE schedule, MSTS struggled to maintain schedule fidelity causing unnecessary diversions and inaccurate information flow for the integrated Lamarck team.

MSTS led an integrated user team to develop an operating model at U1a that facilitates multi-user facility concept for increased cadence of SCEs. This model integrates facility maintenance, recapitalization, mining and potential electrical outages with the increased experiment cadence while meeting requirements for Enhanced Capability for Subcritical Experiments (ECSE) and associated line-item construction needs. MSTS provided leadership in technical solutions for the next generation of U1a experiments while also developing a line-item construction project for improving U1a infrastructure. MSTS successfully executed experiments using the DPF pulsed energy source, for use on a Neutron Diagnosed Subcritical Experiment (NDSE) to advance reactivity measurements in SCEs prior to ECSE. MSTS developed a prototype cylindrical gamma detector to support a lower-cost option for future NDSE recording systems.

At JASPER, MSTS successfully conducted 24 experiments (81% increase over FY17), including two SNM experiments, and drove an increase in the pace of experiments surpassing a stretch

goal of executing six experiments in four weeks by executing nine experiments in 10 days.

MSTS cutting edge diagnostic development continues to revolutionize and improve many data collection systems across numerous NNSA sites increasing the requests for additional MSTS diagnostics to be used at the NWL home facilities. For example, MSTS teamed with: Stanford Synchrotron Radiation Lightsource (SSRL) and led the NNSA Metrology Team to develop an NNSA beamline pair at the SSRL facility for experimentation, High-Energy Density (HED) calibrations, and metrology of x-ray components to allow calibration over a broader range of wavelengths and permit continuous and higher quality calibrations at a significantly lower cost; LLNL to construct the first operational megajoule-class DPF machine from components harvested from the Atlas pulsed power machine at NNSS to support neutron radiography, with applicability to nuclear forensics; and LLNL to develop Multi-Wavelength Extinction (MWE) diagnostic, saving approximately one month of experiment time. MSTS delivered cutting edge diagnostics in Broadband Laser Ranging (BLR) with LLNL for Ediza; initiated the design/build of 48 more BLR channels for Site 300 Hydros; and was submitted for a joint LLNL & MSTS R&D 100 award.

MSTS's strong support to the Stockpile Management Program included characterization of fragments from the B61 Crawl Faster experiment and the successful disposition of waste at Area 5; support for the development and execution of W80 weapons training courses; 27 SWAT experiments at Big Explosives Experimental Facility (BEEF); and planning and preparation for three hydrodynamic experiments at the BEEF to enable continuation of the national hydrodynamic schedule while a physical modification to the Dual Axis Radiographic Hydrodynamic Test (DARHT) facility at Los Alamos is completed in FY 2019.

MSTS successfully completed infrastructure planning initiatives to align with NNSA program needs to improve the efficiency and effectiveness of both nuclear and non-nuclear facility and programmatic operations. Significant accomplishments included: completion of Atlas D&D (facility is now available for ECSE Scorpius prep); reinvestment in mining equipment at the U1a Complex to improve safety and the UCEP schedule; completed lightning protection bonding upgrades at DAF enabling expansion of SCE operations; development of a 40-millimeter large bore gun at JASPER for a new class of experiments; and development of a strategy to procure NNSS equipment for SCEs eliminating NWL ownership issues and the need to remove equipment between experiments, saving significant experiment configuration labor.

Goal 2: Reduce Nuclear Security Threats EXCELLENT

MSTS effectively executed the Defense Nuclear Nonproliferation (DNN) and Counterterrorism and Counterproliferation (CTCP) work in support of objectives and key outcomes of Goal 2 and actions on the *FY18 CTCP Make It Happen List* at the NNSS and other locations, earning a rating of Excellent and 91% of the award fee allocated to this goal. MSTS efforts demonstrated far reaching national and international implications in reducing global nuclear security threats and improved science, technology, and expertise in areas including the Global Material Security (GMS) program, underground nuclear explosion detection, radioactive material detection, foreign nuclear weapons programs, and the national response to nuclear incidents. Upon identification of a schedule/funding DNN program issue, MSTS leadership took proactive action to develop a resource loaded baseline for DNN programs such as Dry Alluvium Geology (DAG) and Underground Nuclear Explosion Signatures Experiment (UNESE) to ensure success.

MSTS conducted site sustainability transition training at four Belarus sites, and demonstrated effective leadership of a multi-laboratory team advancing U.S. capabilities to discriminate and characterize low yield nuclear tests; contributing both scientific expertise and experimental test bed capabilities; and exercising underground test readiness capabilities. For DAG, MSTS successfully planned and prepared the downhole operations involving a large diameter (96") experiment hole that had not been exercised in over 15 year years; implemented new regulatory requirements, and executed the first DAG experiment with nearly 100% data return. MSTS also successfully executed the UNESE program by completing preparation of the test bed at P-Tunnel, including drilling an 860 ft. core hole for data collection and reducing experiment costs by self-performing injection, collection, and analysis of tracer gases in a historic nuclear explosive chimney. MSTS also successfully planned, integrated, & enabled the 24/7 operations of a national nonproliferation test bed supporting the interagency community over a 5-week period; it was the most successful and largest exercise for the program to date.

MSTS provided excellent response for real world national security events, including Las Vegas (LV) New Year's Eve (NYE), Super Bowl, State of the Union, Boston Marathon, etc. The 2018 LV NYE response was a significant departure from the normal response due to the DHS SEAR 1 rating (highest level) resulting from the LV October 1, 2017 shootings. MSTS expert technical personnel provided outstanding support for radiological incidences for nuclear power plant ingestion pathway exercises; the Nuclear Incident Policy and Cooperation program; and the Nuclear/Radiological Advisory Team, supporting national and international agencies. The MSTS Aviation program received the Jeff Snow Aviation Program Memorial and the GSA Small Aviation Program Awards for the 3rd and 2nd consecutive respective years. The Emergency Communications Network (ECN) team completed the SWITCH facility lease initiating improvements in system reliability with improved technology at a substantially reduced cost. MSTS also successfully completed all 53 CONUS field site upgrades deploying state-of-the art ECN equipment with ZERO network downtime. MSTS provided outstanding Dawn Star planning support. Both the Radiological Response Data Portal (R2DP) and the ECN system corrective action plans were not adequately completed prior to MSTS' submittal to NNSA HQ. The R2DP system lost authority to operate (ATO) and was shut down for a period of time, affecting asset training and preventive responses. ECN did not lose authority to operate, but problems separating ECN & R2DP issues, created problems for the NNSA ECN program that required significant involvement by MSTS leadership. After MSTS leadership engagement and completion of additional CAP actions, ATO for R2DP was granted.

Goal 3: DOE and Strategic Partnership Projects Mission Objectives EXCELLENT

MSTS exceeded the objectives and key outcomes related to the successful execution of the mission objectives of the DOE Environmental Management Program, Strategic Partnership Projects (SPP) and Strategic Intelligence Partnership Projects (SIPP), earning a rating of Excellent and 95% of the allocated award fee for the goal. The MSTS SPP/SIPP work demonstrated an integration of activities/operations to leverage and sustain NNSS' unique science and engineering capabilities for the NNSA. As such, MSTS provided excellent support to many SPP/SIPP customers with products of far reaching national security impacts. For example, MSTS execution of work in support of Department of Defense (DoD) projects associated with the Joint Improvised-Threat Defeat Organization (JIDO), Department of Homeland Security (DHS), and Defense Threat Reduction Agency (DTRA) provided nearly 100% data recovery for immediate use in the national and international security community. In addition, MSTS provided excellent project management, safety basis implementation, facility, and procurement support to enable LANL to partner with the National Aeronautics and Space Administration (NASA) for the Kilopower Reactor Using Stirling Technology experiment to support deep space exploration missions. For the DHS, MSTS Counter Terrorism Operations Support (CTOS) trained over 7000 first responders and ~1100 students in Countering Weapons of Mass Destruction as part of the Securing the Cities Program. MSTS rebaselined their SPP portfolio to better position for future NNSS long-term vision of national security. However, critical procurements for Other Government Agency (OGA) sponsors continue to be a challenge. MSTS leadership initiated a strong process improvement plan to develop resolutions to this longstanding issue.

MSTS exceeded national security complex and legacy cleanup waste disposal goals and challenges through operation of the Radioactive Waste Management Complex and direct support for environmental characterization activities at the NNSS. MSTS successfully received and disposed of over 1.15 million cubic feet of low level waste/mixed low level waste in 1,340 shipments – including receipt of over 58 Type A/B shipment casks that require additional planning, labor and controls to offload. MSTS completed construction and received State of Nevada approval for operation of a 1.2M cubic feet mixed waste disposal cell, replacing an existing disposal cell that is nearing capacity, completing the project on schedule and under budget by over $250K and completed concurrent construction for an additional low level waste disposal cell. In addition, MSTS performance exceeded expectations by proposing and completing preparations for use of the Area 3 RWMS for disposal of the DOE-EM NV Clean Slate III (CSIII) waste, providing a significant future cost avoidance to Area 5 and reducing project risk to the EM NV Clean Slate III project.

Other notable achievements included demonstrating leadership and outstanding technical responsiveness with NNSA, DOE EM, and the EPS contractor to resolve multiple issues, including the 9979 shipping container concerns and the response to the State of Nevada Department of Environmental Protection (NDEP) for previous contractor RCRA compliance issues; revegetation efforts at closed wastes sites utilizing traditional ecological knowledge and wisdom from tribal members of the Consolidated Group of Tribes and Organizations; and contaminated groundwater characterization activities with all milestones activities completed on or ahead of schedule.

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

MSTS exceeded the objectives and key outcomes related to the management of Site Directed Research and Development (SDRD) and Technology Transfer programs to advance national security missions and the frontiers of ST&E, earning a rating of Excellent and 95% of award fee allocated to this goal. MSTS' continued emphasis on high-quality and high-impact publications is lending credence to ST&E performance and enhancing credibility in the national security sciences. Through SDRD and university investments, MSTS created pipelines for attracting scientists and engineers to support a next generation Science, Technology, Engineering, and Mathematics (STEM) workforce and formed new technology partnerships with universities and industry. MSTS also submitted two technologies developed with LLNL, solid-state muon detectors and BLR, for R&D 100 consideration. The solid-state muon detector submission was selected as an R&D 100 finalist. To continue to improve the SDRD program, MSTS hosted an exchange with the Kansas City National Security Campus to share best practices and leverage expertise. Additionally, MSTS improved their SDRD proposal process by focusing their efforts on research areas such as decoupled nuclear test signatures, material equations of state science, and advanced algorithms for sensor networks and machine learning.

Through SDRD strategic investments, additional capabilities were brought online this year with the addition of the Santa Barbara powder gun which allowed MSTS to put a test bed capability in place in an unclassified environment. This capability, along with the North Las Vegas (NLV) complex small launcher, allowed STEM talent and uncleared researchers to train and contribute to the national level solutions while awaiting security clearances. MSTS SDRD projects/experiments immediately impacted NNSA programs in areas of soft catch capabilities; re-compaction and spall experiments for MPDV diagnostic systems in support of a U1a SCE and hydrodynamic tests at LANL; new BLR testing prior to Lamark fielding; and testing of three new barrels for increased velocities, two in support of JASPER.

During this period, MSTS received five patents and one copyright and applied for an additional seven patents, three copyrights and two new technology abstracts. Software license agreements to use MSTS developed algorithms are increasing due to demand. MSTS also continued to support three Cooperative Research and Development Agreements (CRADA): Global Medical Isotope Systems, LLC.; H3D Gamma, Inc.; and Phaxis Aerospace Concepts, Inc.

MSTS strengthened university collaborations through R&D and as a pipeline to build a next-generation workforce. Long-standing and new collaborations are being developed with the University of Nevada Las Vegas (UNLV) on novel semiconductor materials for radiation detectors, integrated circuit signal amplification and photo-sensitive electronic systems, and trans-impedance amplifier integrated circuit designs. MSTS also continued collaboration with the University of Nevada, Reno (UNR), in fielding new HED physics experiments at the Nevada Terawatt Facility and maintaining data from the NNSS seismic array. MSTS also supported doctoral research at the Colorado School of Mines, University of Arizona, University of Alabama, and Oregon State University and established a relationship with Embry-Riddle Aeronautical University to provide information for science and engineering courses and consultation with the university's new graduate program in Data Science.

Goal 5: Operations and Infrastructure VERY GOOD

MSTS exceeded most of the Objectives and Key Outcomes by ensuring safe, secure and effective execution of program and site operations, as well as infrastructure sustainment and improvements while maintaining an NNSA enterprise-wide focus, earning a rating of Very Good and 85% of award fee allocated for this goal. MSTS effectively maintained and improved mission critical infrastructure, support systems and equipment, personnel, and facilities, including information technology (IT), utilities and emergency management. Linking safety and risk management to enable mission success, MSTS focused on developing and deploying safety, security, and risk management tools and instilling discipline as part of the workforce culture with initiation of Integrated Operations Nevada (ION) and BeyondZero®. MSTS also met or exceeded expectations in delivering service in the functional areas of business, legal management, human resources (HR), energy efficiency, safety, Material Control and Accountability, quality assurance, infrastructure, construction, and maintenance.

MSTS leadership extensively reviewed direct and indirect facility and infrastructure plans focusing on mission critical facilities at Mercury, U1a, DAF, Area 6 and North Las Vegas; improved infrastructure portfolio planning and execution methods adding sub-contracting vehicles and corporate reachback opportunities; and identified an additional set of infrastructure improvements to address risk reduction, workforce safety, and site user services. As a result, MSTS continued the successful execution of infrastructure and Capital Line-Item projects, meeting expectations overall, except Argus Subproject 01 which exceeded expectations by completing CD-4 construction four months ahead of schedule and $5.9M under the contractor's Contract Budget Base. Other examples included: DAF Lead in Line (LiL) projects addressing deficiencies for 8 of the 9 remaining buildings ahead of schedule and under cost; completion of a major Cultural Resources Programmatic Agreement in support of the Mercury Modernization Project enabling future plans for the NNSS recapitalization efforts; achieved CD-1 on the 138-kV Power Transmission System line-item project; successfully repurposed the ATLAS building to support new radiographic capabilities for U1a. Sustainability performance was strong to include completion of the solar demonstration project at Mercury Fire Station No. 1, delivering the first ever NNSA net-zero energy facility.

MSTS provided efficient ESH&Q management and continuously looked to improve for effective mission enablement by improving integration with NWLs on safety basis documents; receiving approval for continued participation in the DOE Voluntary Protection Program; completing the Consolidated Emergency Management Plan including the NvE community and expanding to outlying locations; and initiating an Incident Investigation Review Panel to review incidents/injuries from a systemic perspective. MSTS successfully integrated security planning activities between NNSA/NFO, MSTS and two additional contractors and successfully presented the revised integrated FY 2019 Annual Operating Plans and FY 19-24 Future Year Nuclear Security Program to NA-70. In addition, MSTS submitted a comprehensive security services contract proposal that was accepted by NNSA to transition security services from an NNSA/NFO Prime Contract to MSTS on schedule and without issue.

MSTS' response to three weather originated wildland fires (one in April and two in August) was exceptional. One fire required offsite resources resulting in emergency operation center activation. The MSTS response was well coordinated including forward leaning actions to secure offsite aerial assets to combat fire expansion. These fires resulted in no injuries or

radiological exposures, and no damage to NNSS infrastructure or facilities.

MSTS IT initiatives continued to improve effectiveness and efficiency, supporting modernization for NNSS users. MSTS migrated the NNSS Security contractor to MSTS systems to standardize communication of email and phones; expanded implementation of WiFi to the North Las Vegas (NLV) campus and NNSS areas; designed P-Card module interfaces that leverage PeopleSoft and Oracle Financials that allows screening and approval; upgraded the NNSS IT backbone to an Optical Transport Network improving NNSS data, phone and radio networks; transitioned to a new NTIA P25 compliant Harris radio system; and proactively engaged with the BUILDER/ CMMS project to align program requirements with software capability. MSTS spectrum management also supported the successful execution of the Counter Unmanned Aerial System approval to operate demonstration at LANL.

MSTS received a number of Commendable Practices and an overall Excellent performance rating for efficient and effective financial operations. MSTS exceeded their Small Business Subcontracting goal of 70% by awarding ~85% of subcontracts to small businesses. A review of MSTS Personal Property management policies, procedures, practices, and processes resulting in an Outstanding rating. Automation of HR systems led to cost savings as well as increased accessibility to potential candidates, leading to the hiring of 216 employees.

The comprehensive NNSS security survey conducted by NNSA/NFO identified multiple performance and compliance issues within several key areas of MSTS Program Management Operations and Information Security areas resulting in an overall Marginal rating. In addition, several compliance issues were found in the MSTS Classification Program during an external assessment conducted by the NNSA Office of Personnel and Facility Clearances and Classification.

MSTS made improvements in safety and cultural/environmental programs including Safety Basis development, Air and Ground Operations, Radiological Control, Cultural Resources and Historical Preservation programs. Continued attention to planning; product quality and timeliness is required in the areas of documentation and product submittals, such as EVMS reporting, nuclear safety basis, *National Environmental Policy Act* and permitting documentation, emergency management exercise planning and control; and project management to include program baseline development, cost estimating, and performance as well as programmatic waste planning. Delayed hiring across the program, procurement, construction and engineering portfolios led to slow construction execution resulting in some procurements as well as Mercury Modernization projects and other new recapitalization projects being delayed and moved into FY2019.

MSTS completed 10 of 16 IT Implementation Factors (IF) and 15 of 20 Cybersecurity IFs. Incompletion and lack of progress towards milestones associated with the enterprise eGRC capability is a notable concern. While MSTS' performance in these areas was sluggish at initiation of the contract, performance improved later in the year.

Goal 6: Leadership EXCELLENT

MSTS's leadership performance exceeded expectations in executing the DOE/NNSA mission by effectively managing programmatic/enterprise mission and site risk while safely and securely executing mission and site operations earning a rating of Excellent and 91% of the award fee allocated for this Goal. MSTS leadership was highly responsive to DOE and NNSA emergent, immediate needs. MSTS leadership kept the entire MSTS team focused on effective contract start-up to include leadership teambuilding; increasing engagement with the Nevada Enterprise (NvE); achieving mission results; improving operational excellence; and making investments in infrastructure to support the NNSS mission.

MSTS made successful mission execution a priority and completed all assigned science/ stockpile National Level 2 milestones and all MSTS actions on the *FY18 Defense Programs Getting the Job Done List*.

MSTS leadership launched improvement initiatives from corporate parent programs such as BeyondZero®, an approach to enable worker ownership of a culture of caring and accident free work execution; nuclear safety basis improvements with stakeholder integration, new nuclear safety job descriptions and a draft variable compensation plan to attract and retain top talent; iCIMS recruiting software application, which replaced paper applications with a state of the art talent acquisition system which is already showing a productivity savings of over 4000 total hours across MSTS; implemented the Management Operations Review process at the enterprise and directorate levels to ensure effectiveness of systems, identify & mitigate risks, and foster communication, transparency, accountability and continuous improvement; and implementation of Integrated Operations Nevada (ION) which takes CAS from a compliance culture to one of continuous improvement designed to eliminate waste, streamline processes, and simplify work.

MSTS leadership took strong ownership of the NvE integration role to enhance communications and safe, secure, efficient and effective mission execution. MSTS leadership strengthened operational communication among the NvE community, implemented a Senior Management Review Board (SMRB) for internal executive decision-making, and launched Integrated Project Teams (IPT) to align execution teams with functional organizations.

MSTS successfully used parent company reachback for expertise in safety, design engineering, water distribution, asset management, and mining solving several long standing NNSS issues.

Senior MSTS Managers worked to enhance and strengthen long-standing relationships and establish new collaborations with a number of universities. These collaboration enhance and support of the NNSA mission and serve to build a pipeline for the next-generation workforce.

Although efforts are underway, MSTS leadership needs to continue team building among and between its Key Personnel, mid-level managers, and staff to include increased field-level engagement by Senior Management at the NNSS. MSTS has improved transparency however, up-front information flow & communication related to MSTS decision-making is necessary for continuous improvement.