



## FY2019 Performance Evaluation Summary

**Contractor:** Mission Support and Test Services, LLC (MSTS)

**Contract:** DE-NA0003624

**Evaluation Period:** October 1, 2018 – September 30, 2019

**Basis of Evaluation:** Fiscal Year (FY) 2019 Performance Evaluation and Measurement Plan (PEMP)

The FY 2019 PEMP for this contract is available at:

<https://www.energy.gov/sites/prod/files/2020/01/f70/FY19%20MSTS%20PEMP%2092818%20Signed%20Redacted.pdf>

The Contract is available at: <https://www.energy.gov/nnsa/nevada-national-security-site-contract>

### Award Fee Scorecard

Goal	Rating		At Risk Available	Final
	Adjectival	Percent		
Goal-1: Manage the Nuclear Weapons Mission	Very Good	89%	\$ 5,520,780	\$ 4,913,494
Goal-2: Reduce Nuclear Security Threats	Very Good	90%	\$ 3,680,520	\$ 3,312,468
Goal-3: DOE & Strategic Partnership Projects Mission Objectives	Excellent	95%	\$ -0-	\$ -0-
Goal-4: Science, Technology & Engineering (ST&E)	Excellent	95%	\$ -0-	\$ -0-
Goal-5: Operations & Infrastructure	Very Good	85%	\$ 5,520,780	\$ 4,692,663
Goal-6: Leadership	Very Good	88%	\$ 3,680,520	\$ 3,238,858
<b>Total Award Fee</b>	<b>Very Good</b>	<b>87.8%</b>	<b>\$18,402,600</b>	<b>\$16,157,483</b>

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

	Available	Final
Fixed Fee	\$ -0-	\$ -0-
SPP (Fixed Fee)	\$ 3,139,089	\$ 3,139,089
Total Fixed Fee	\$ 3,139,089	\$ 3,139,089
<b>Total Fee (Award Fee and Fixed Fee)</b>	<b>\$21,541,689</b>	<b>\$19,296,572</b>

MSTS commitments to the National Nuclear Security Administration (NNSA) included increasing operational cadence on experiments, enhancing capabilities to execute an expanded program portfolio, and significantly improving the Nevada National Security Site (NNSS) infrastructure. As a result of these commitments, MSTS workload significantly increased this performance period and was arguably higher than has been witnessed in over 25 years. With the operational tempo and workload increases, MSTS saw increased operational upsets. MSTS leadership took appropriate work pauses to evaluate each upset and develop a path forward, including extent of condition reviews and corrective actions to mitigate a potential repeat of the upset. A commitment to safe and secure enterprise mission execution was also demonstrated through the continued improvement in safety performance and strong overall security performance.

Overall, MSTTS earned a Very Good rating for FY2019, exceeding many of the objectives and key outcomes under the PEMP goals, meeting overall cost, schedule, and technical performance requirements with accomplishments that greatly outweigh issues.

**Accomplishments:**Goal 1

- Supported four Subcritical Experiments (SCE) series simultaneously; successfully completed the Ediza SCE with ~100% data return; and effectively managed the Ediza contamination issue
- Engaged corporate partners, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and the vessel manufacturer to address legacy quality issues on confinement vessels necessary for Ediza and to minimize impacts to the future SCE program
- Executed experiments using the Dense Plasma Focus Facility pulsed energy source to continue full characterization above ground prior to use on a Neutron Diagnosed Subcritical Experiment underground at U1a
- Completed several high explosives aging study tests for B-61
- Supported increased requests for cutting edge diagnostic development activities on several first-time experiments; several first-time-ever data sets were obtained

Goal 2

- Successfully executed Dry Alluvium Geology (DAG)-2, DAG-3, and DAG-4 with ~93% data return on thousands of sensors
- Conducted multiple foreign visits to support the Defense Nuclear Nonproliferation mission area of protecting and removing radioactive material
- Provided excellent response in support of real world national security events which required significant multi-agency pre-planning and extensive coverage before, during, and after each of the events
- Expert personnel supported ingestion pathway exercises at multiple nuclear power plants
- Completed Emergency Communications Network installation at three Department of Defense OCONUS locations for high-importance missions and took actions to improve system reliability, provided substantial savings and improved technologies in an extremely short period of time without impacting mission
- Provided outstanding communications support for NNS site-wide outage & overall support to the “Storm Area 51” event

Goal 3

- Demonstrated the successful integration of activities/operations to leverage and sustain NNS's unique science and engineering contributions to the NNSA
- Provided excellent support to many Strategic Partnership Projects and Strategic Intelligence Partnership Projects customers with products of far-reaching national security impacts
- Trained approximately 15,000 first responders
- Exceeded national security complex and legacy cleanup waste disposal challenges through operation of the Radioactive Waste Management Complex and supported environmental characterization activities at the NNS
- Reopened the Area 3 Radioactive Waste Management Site and began receiving low-level waste from the Tonopah Test Range providing significant cost avoidance to the Clean Slate III project (using existing disposal capacity vs. constructing new capacity)

Goal 4

- Silicon Strip Cosmic Muon Detector, developed through Site Directed Research and Development program, won a prestigious 2018 R&D 100 Award
- Focused on forming new technology partnerships with universities and industry. Strengthened and conducted over 20 university collaborations as a pipeline to build a next generation workforce (> 20 collaborations)
- Continued to add capabilities to the C3 launcher, testing high entropy alloys that hold promise for lightweight materials with very high strength, ductility, corrosion resistance
- Leveraged multiplexed Photon Doppler Velocimetry (PDV) to develop an ultra-high speed PDV that will for the first time diagnose the inside of an inertial confinement fusion shell
- Published three journal articles and received two new patents

Goal 5

- Successfully executed recapitalization projects to include construction of Building 1 for Mercury Modernization, development of the U1a campus strategy, and completion of the 5-year Device Assembly Facility Lead-in-Line project, U1a Classified modular building, dorm cooling & heating asset management project, roofing asset management project
- Mercury solar field delivered power to the first NNSA new construction Net Zero energy building
- Executed an additional \$13M in direct maintenance relative to the prior fiscal year
- Device Assembly Facility Argus Project execution ended the year ahead of schedule and under budget
- Continuously improved safety performance and maintained security performance while executing at an increased operational tempo
- Received Voluntary Protection Program (VPP) certification, VPP Star of Excellence Award, seven NA-50 Excellence Awards, and one Department of Energy Sustainability Award

Goal 6

- Continued to demonstrate strong ownership of the Nevada Enterprise integration role to enhance communications supporting the safe, secure, efficient and effective mission execution through interactions with NNSA Nevada Field Office (NFO), NNSP partners, National Laboratory partners, NNSA HQ Program owners, and Other Government Agency sponsors
- Used parent company reachback for expertise in safety, design engineering, water distribution, asset management, mining and external assessments to improve processes
- Continued the implementation of improvement initiatives from corporate parent programs
- Reduced reportable safety incidents (0.92 to 0.61) and days-away cases (0.26 to 0.17) during the performance period (BeyondZero® Corporate Program)
- Identified unique ways to collaborate with local schools & unions to increase the pool for NNSP's difficult-to-fill trade positions

**Issues:**Goal 1

- Improvements needed in overall integration of U1a operations
- Improvements needed in work planning to help prevent incidents such as the large zoom camera that was dropped in U1a.
- Experienced challenges with planned Joint Actinide Shock Physics Experimental Research (JASPER) maintenance and several operational upsets, however, 23 of 25 planned experiments were successfully conducted

Goal 2

- Experienced DAG-2 schedule delays and additional costs due to conduct of operations issues and lack of an appropriate readiness process for key hazardous operations
- Added attention is needed to delivering quality cost estimates and accurate/timely financial reporting to meet customer demands
- Improved integration of communications between MSTs, NFO, & NNSA Programs is needed to effectively and efficiently execute mission
- Early identification of potential technical resource gaps is needed to avoid mission impacts

Goal 5

- Lacked appropriate, consistent, and DOE Order 413.3B compliant project planning documentation for the U1a Complex Enhancement Project (UCEP). UCEP 010 and 020 subprojects are behind schedule
- Numerous operational issues occurred in several NNS facilities that could have been avoided
- Improved Subject Matter Expert integration into work planning is needed to enhance planning and avoid rework and/or schedule delays
- Struggled with quality and timeliness of documents

Goal 6

- Improved Senior Management communication with NNSA leadership and attention through recovery of operational issues is needed
- Lacked Senior Management engagement in the capital line item and infrastructure projects to ensure successful project execution
- Progress in achieving Earned Value Management System certification was behind schedule
- Failed to replace the Vice President position vacated in March 2019