



---

National Nuclear Security  
Administration

Honeywell FM&T

Fiscal Year 2015  
Performance Evaluation  
Report (PER)

---

NNSA Kansas City Field Office

Performance Period:  
October 2014 – September 2015

---

November 19, 2015

---

## Executive Summary

This Performance Evaluation Report (PER) provides the assessment of Honeywell Federal Manufacturing and Technologies, LLC performance for the period of October 1, 2014 through September 30, 2015, as evaluated against the objectives defined in the Fiscal Year (FY) 2015 Strategic Performance Evaluation Plan (PEP). The National Nuclear Security Administration (NNSA) took into consideration and consolidated all input provided (e.g. CAS, Program Reviews, etc.) from NNSA Program and Functional Offices both at Headquarters and in the field. The Performance Objectives (POs) in the PEP were graded using adjectival ratings as described in the Federal Acquisition Regulation (FAR). The POs were then considered in the aggregate to provide an overall adjectival rating and percentage of fee earned for the contract. Comments on the performance of each Contributing Factor (CF) and Site Specific Outcome (SSO) under each PO identified in the PEP are provided as well.

Honeywell Federal Manufacturing & Technologies (FM&T) submitted a Performance Self-Assessment Report that covered the rating period. FM&T is to be commended for the thoroughness of their report which embraced the expectation of being self-critical as well as highlighting accomplishments. NNSA reviewed the self-assessment report and considered it in conducting our evaluation. In most cases NNSA agreed with the overall assessment of Excellent.

Performance against the POs summarized below, resulted in an overall rating of Excellent for FM&T in FY 2015.

PO-1: Manage the Nuclear Weapons Mission (40% of At-risk fee) was rated as Excellent. Overall, FM&T performed above expectations in managing the Nuclear Weapons Mission. While concurrently delivering large quantity B61-12 LEP and W88 ALT 370 hardware, Honeywell FM&T effectively managed complex NNSA Earned Value Management System (EVMS) requirements, maintained continuity in existing W76-1 non-nuclear production mission, concluded Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) re-qualification, and satisfied weapon stockpile surveillance commitments. During FY 2015, Honeywell delivered more than 70,000 development and production hardware items to support inter-site NNSA, U.S. Air Force, and U.S. Navy, and United Kingdom mission needs. More than 450 KCRIMS re-qualification activities were executed and all components associated with the joint Sandia National Laboratories/National Security Campus External Production Transition Plan were transitioned on or ahead of schedule. FM&T continued driving Additively Manufactured (AM) war reserve component certification and demonstrated significant reductions in material, cost, and cycle time using AM. Additionally, expectations were exceeded in all four categories of weapon quality assurance metrics (Escapes, Scrap, Rework, and Lots Accepted Trouble Free) and over \$7 million in costs were avoided while driving continuous manufacturing improvements. Over 65 parts were delivered for the B61 Joint Test Assembly Modernization (JTAM) First Production Unit, which contributed to subsequent successful flight tests. Design Agency product definition changes were rapidly responded to which enabled execution of multiple system level development program tests. FM&T also continued strong alliances with National Security Enterprise partners on defining and implementing Nuclear Enterprise Assurance (NEA) and took a leadership role for supply chain management. One area of continuous improvement that FM&T is focusing on is to improve communication of technical challenges and schedule impacts within the NNSA in a timelier manner.

PO-2: Reduce Global Nuclear Security Threats Mission (7.5% of at-risk fee) was rated Very Good. FM&T continued strong partnerships with other Nuclear Security Enterprise (NSE) sites and government agencies in this endeavor. FM&T's contributions included providing technical, manufacturing and integrated supply chain management expertise in support of Emergency Operations, Defense Nuclear Nonproliferation, Counterterrorism and Counter Proliferation, Department of Defense, Department of State and other agencies. Specifics of note during the reporting period included accelerated procurement of \$2.5M in equipment for the Emergency Communication Network; completion of FY15 Emergency Response tasking \$600,000 under budget; and execution of over 900 assessments in support of the DOE/NNSA weapons of mass destruction (WMD) interdiction program.

Customer satisfaction associated with FM&T's Global Security enterprise was very positive during the reporting period.

PO-3: DOE and Strategic Partnership Project (SPP) Mission Objectives (5% of At-risk fee) were rated as Excellent. Effective management and planning enabled the successful execution of over 1200 projects within project cost, stabilized labor rates, improved forecasting and planning, and generated project cost savings, all notable accomplishments during the reporting period. Ship performance was 99.0% on 110,000 deliverables equating to \$277 million in mission scope (12% increase over FY14). FM&T achieved full cost recovery of \$106.8 million, which reduced burden rates to Defense Program mission customers.

PO-4: Science, Technology & Engineering (ST&E) and Other DOE Mission Objectives (7.5% of at-risk fee) were rated as Excellent. Overall, FM&T performance was above expectations in its ability to manage the Science, Technology, and Engineering. Work scope funded through discretionary Plant Directed Research & Development (PDRD) and institutionalized Non-Nuclear Readiness (NNR) was efficiently managed to deliver leading edge research and technology maturation aligned with NNSA priorities. The PDRD program budget remained at \$22 million in FY15 or approximately 2.9% of the plant budget. Approximately \$16 million was directly overseen by each of the six Centers of Excellence (COE) leaders and supported 61 new start or continuation projects. Approximately \$6 million in PDRD funding was again reserved for rapid response projects. These projects directly supported technology maturation for requirements on multiple programs.

PO-5: Operations and Infrastructure (30% of At-risk fee) was rated as Excellent. Operations & Infrastructure was rated as Excellent. Overall, FM&T performed above expectations in their ability to meet the DOE/NNSA mission by ensuring Site Operations and Infrastructure were maintained. FM&T has improved the management and execution of maintenance and facility projects within the new operational model at the National Security Campus (NSC). FM&T provided excellent support of the NNSA disposition activities of the Bannister Federal Complex. FM&T provided effective oversight of the decommissioning activities underway and conducted three auctions supporting safe removal of excess personal property reducing overall cost to the government. FM&T safety performance remains better than industry with a CY15 Total Reportable Case (TRC) rate of 0.35 and a Days Away From Work Cases (DAFWC) rate of 0.06 (83% and 99% better respectively). National Secure Manufacturing Center (NSMC) - New Mexico has completed 30 months without a DAFWC case. Regulatory inspections conducted in FY15 included Environmental Protection Agency Resource Conservation and Recovery Act, Missouri Department of Natural Resources (MDNR) Air, MDNR No Exposure, and

Kansas City Missouri wastewater at the NSC resulting in no fines or penalties. FM&T received multiple awards during FY15 including, but not limited to, the National Safety Council 2015 Occupational Excellence Achievement Award, Million Work Hours Award (two million hours worked without a DAFWC), Perfect Record Award (12 consecutive months without incurring a fatality or DAWFC). Cyber Security and IT worked together to further several integrated initiatives that improved the NSC's security posture and both groups provided valuable strategic leadership to the enterprise. Physical security developed several metrics to identify indicators of negative performance and took action that improved performance in several areas.

FM&T's ability to deliver efficient, effective and responsible Business operations and information technology (IT) at the highest levels have been consistent all year. FM&T's visionary approach to problems and opportunities included a strong Business Operating System (HOS) that engaged employees at every level to leverage systems, tools and processes to generate results. HOS is continuing to drive improvement initiatives into the daily execution of mission deliverables. Some examples where demonstrated excellence has covered a wide variety of areas included:

- \$36.4 million in Six Sigma cost avoidances
- Over 10,000 Continuous Improvements submitted
- Exceeding IT deliverables regarding IT governance, OMB mandates, and oneNNSA elements
- Utilizing Honeywell User Experience (HUE) processes, reducing costs associated with offsite training, improving contractor oversight, and touchpoints.
- Completed Earned Value Management System (EVMS) enhancements driving consistency in programs, utilizing Parent company expertise to exchange best practices.
- Developed a change control process leveraging the existing capabilities of PeopleSoft to perform resource base and burden rating, improving the consistency between the financial system and the EVM system.
- Improved visibility into resource needs and manufacturing and supplier capacity
- Achieving the highest ratings in the Financial and Budget Program Areas
- Strong Human Resources and Procurement systems

FM&T has effectively critiqued their own systems providing the required transparency to evaluate results. This facility has become the showcase for modernization as evidenced by the positive feedback from high level customers visiting the plant this past year.

PO-6: Leadership (10% of at-risk fee) was rated as Excellent. Overall, FM&T performed above expectations in effectively providing leadership to support the achievement of NNSA's vision and mission in Kansas City and around the NSE. Effective leadership across the business resulted in strong mission performance and enterprise collaboration. FM&T led impactful enterprise-wide initiatives including the Supply Chain Management Center (SCMC), Enterprise Risk Management, Manufacturing Production Steering Committee, Export Control Implementation, participation in Requirements Modernization and Integration (now called the Defense Programs Business Process System - DPBPS) and technical contributions and residencies to the NSE. DOE-MA, SCMC, and Science have collaborated to implement an eStore platform pilot for Berkeley, Brookhaven, Pacific Northwest and Idaho National Laboratories. The SCMC exceeded cost saving goals for NNSA and EM sites, with SCMC-enabled savings totaled approximately \$193 million (surpassing the FY15 goal of \$108 million). Demonstrating positive performance results of their management assurance systems, FM&T also

realized over \$50 million in cost avoidance in FY15. FM&T has consistently been a leader in export control across the NSE and is working to improve site integration by making FM&T's Master Approved Supplier List (MASL) secure server available to other NSE sites. The MASL will be used to share export control approved suppliers, eliminate multiple supplier reviews, and alert sites of potential concerns with suppliers. FM&T is continuing to significantly enhance several focus areas of Additive Manufacturing, including polymers, direct ink write silicones, and inorganic metals. All of these efforts are in support of and coordination with the NNSA's Roadmap for Additive Manufacturing, which FM&T helped create in partnership with LLNL. FM&T was awarded the 2014 Corporate Recognition Award by the International Microelectronics and Packaging Society (IMAPS), which honors and recognizes a corporation that has made significant technical contributions to the microelectronics industry. In addition, a number of individual FM&T staff members were recognized by third parties, including FM&T's Vice President for Engineering receiving the "Ground Breaker Leadership Award" for her significant achievements in the field of science, technology, engineering, and math (STEM) at the inaugural Kansas City "STEMMY" awards. These examples and others captured throughout this report demonstrate the commitment and focus of leadership to deliver continuous improvements and innovative solutions to the challenges facing the enterprise.

Specific observations for each of the Performance Objectives are provided in the following pages.

## Performance Objective 1: Manage the Nuclear Weapons Mission

### Description

Successfully execute Nuclear Weapons mission work in a safe and secure manner in accordance with DOE/NNSA Priorities, Program Control Document and Deliverables, and Program Implementation Plans, Integrate across the 'site', while maintaining a DOE/NNSA enterprise-wide focus, to achieve greater impact on a focused set of strategic national security priorities. Provide defensible evidence.

Excellent

Manage the Nuclear Weapons Mission (40% of At-risk fee) was rated as Excellent. Overall, Honeywell FM&T performed above expectations for the full year in their ability to manage the Nuclear Weapons Mission. While concurrently delivering large quantity B61-12 LEP and W88 ALT 370 hardware, FM&T effectively managed complex NNSA Earned Value Management System (EVMS) requirements, maintained continuity in existing W76-1 non-nuclear production mission, concluded Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) re-qualification, and satisfied weapon stockpile surveillance commitments. During FY15, Honeywell delivered more than 70,000 development and production hardware items to support inter-site NNSA, U.S. Air Force, and U.S. Navy, and United Kingdom mission needs. FM&T executed more than 450 KCRIMS re-qualification activities were executed and all components associated with the joint Sandia National Laboratories/National Security Campus External Production Transition Plan were transitioned on or ahead of schedule. FM&T continued driving Additively Manufactured (AM) war reserve component certification and demonstrated significant reductions in material, cost, and cycle time using AM. Additionally, FM&T exceeded expectations in all four categories of weapon quality assurance metrics (Escapes, Scrap, Rework, and Lots Accepted Trouble Free) and avoided over \$7 million in costs while driving continuous manufacturing improvements. FM&T delivered over 65 parts for the B61 Joint Test Assembly Modernization (JTAM) First Production Unit that contributed to subsequent successful flight tests. In addition, Honeywell rapidly responded to Design Agency product definition changes that enabled execution of multiple system level development program tests. Honeywell also continued strong alliances with NSE partners on defining and implementing Nuclear Enterprise Assurance (NEA) and took a leadership role for supply chain management. One area of continuous improvement that FM&T focused on is improving the timeliness when communicating technical challenges and schedule impacts within the NNSA.

### CF-1.1

#### Above Expectations

FM&T exceeded expectations during FY15 execution of Stockpile Services programs' scope, cost, and schedule requirements. Most notably, FM&T completed all requalification activities associated with the KCRIMS project on schedule. The KCRIMS requalification work scope encompassed more than 450 product, process, and tester qualifications. The FY15 KCRIMS requalification work scope was executed \$140,000 below the baseline budget and well below what was originally projected. FM&T completed 11 Qualification Engineering Releases (QERs) ahead of schedule. Additionally, the magnitude of KCRIMS requalification activities drove development of an Engineering Evaluation Tracking database that will enable more precise management of requalification activities during normal production operations.

FM&T collaborated with Sandia National Laboratories (SNL) and transitioned all components associated with the Sandia External Production (SEP) mission transfer project plan to the NSC ahead of schedule. The SEP mission transfer of capacitors, magnetics, frequency devices, and power assemblies was part of a joint SNL and NSC vision, defined in a jointly signed FY14 project plan, which is targeted to save NNSA ~\$3 million over the next 10 years. This was a very noteworthy accomplishment that was collaboratively identified and executed by FM&T and SNL. This paved the way for future efficiency opportunities as a result of this outstanding partnership.

Honeywell FM&T committed nearly five times the \$1 million baseline goal of Production Support (PS) funding to recapitalize key production support equipment through better alignment of PS program portfolio and weapon tail number work scope. Honeywell exceeded baseline Model Based Product Realization goals by completing more than 563 Computer Aided Design Intelligence Quotient (CADIQ) geometry validations, 55 derivative model validations, and 83 tolerance analyses against goals of 200 geometry, 40 derivative model, and 20 tolerance analyses, respectively. Additionally, Honeywell identified an approximately \$3.3 million cost avoidance to the Stockpile Services program by developing a qualified material leaching process to restore 160,000 grams of high purity material, avoiding the cost of new material and scrap.

FM&T drove significant efficiencies in the NNSA material re-allocation process, by developing a cycle time database, creating an alternate federal program management authorization method, and updating internal schedule analysis procedures to ensure adequate inventory is available to support both legacy programmatic needs and large quantity development program reuse requirements. Additionally, Honeywell created a 700-page Integrated Programmatic Scheduling (IPSS) Training and Navigation Guide to enhance the user experience of internal scheduling staff members and shared it during on-site training of other NSE site production schedulers.

FM&T overall met expectations by completing 16 FY15 NA-15 Task Agreements. FM&T completed 15 Task Agreements at the Meets Expectations level and completed one (04.01.03.01 Technical Documents Project) at the Above Expectations level. Specifically in this project, FM&T provided document preparations and training support for Advanced Radio Enterprise System (ARES)-related training at both the operation Command's and Training Command (TRACOM). Technical Documents accommodated two unscheduled training events at Fort Chaffee. The first was ARES technician training. The second unscheduled event was documentation development and training for TRACOM controllers. FM&T delivered the documentation and training to support the fall Federal Agent training. Honeywell successfully absorbed both of these events without affecting other scheduled deliverables. Finally, the Technical Documents group assumed responsibility for tracking and posting Apollo unit failures and the remove and replace operations functions.

## **CF-1.2**

### **Above Expectations**

FM&T executed FY15 surveillance activities within the programmatic funding levels and directive requirements providing material, hardware, analysis and test results to support Design Agency annual certification requirements. More specifically, Honeywell performed W80 ALT 369 reacceptance test activities, which included re-establishing test capabilities for production testers previously out of production for ~20 years and providing surveillance data to the Design Agency to support component-aging analyses. FM&T developed Design Agency approved W87 Can Assembly

reprocessing procedures precluding the need for new builds and avoided approximately \$1.7 million cost to the program. Collaboration with the Los Alamos National Laboratories enabled validating the material performance characteristics when adding carbon nano-fiber to RTV, improving manufacturability and increasing product yield from ~60% to ~95%. This new process is also undergoing evaluation to extend material life. Honeywell developed a W76-1 disassembly process that reduced the overall disassembly time from 19 days to 6 days, reduced the chemical processing exposure time on hardware, and minimized vibration during hardware removal to maintain the device integrity during performance testing. Honeywell also established a new capability to compare material properties of additively produced material (direct ink write) against legacy material polymeric properties which supported existing AM certification initiatives and enabled aging characterization. Honeywell delivered 65 parts to support the FY15 B61 Joint Test Assembly Modernization (JTAM) First Product Unit (FPU) leading to three successful FY15 flight tests. FM&T expedited the process development and recalibration of the W87 High Accuracy Separation Package (HASP)/Mock to support the Intercontinental Ballistic Missile (ICBM) Joint Test Assembly (JTA) 4 build schedule. Honeywell expedited fabrication of a custom cable to support a quick turn-around DoD customer request for additional vibration diagnostics during W78 JTA-619 flight testing.

FM&T identified a chromate plating issue, impacting internal inventory and previously shipped product. Although most of the tested product conforms to requirements or is undergoing rework, FM&T did experience internal and external communication challenges regarding the extent of condition and material handling hazards.

### **CF-1.3**

#### **Met Expectations**

Honeywell FM&T delivered more than 33,000 items and supported 100% of directive maintenance requirements within site budget allotment. Although FY 2015 maintenance commitments represent a small percentage of the overall NSC Directed Stockpile Work (DSC) work scope, Honeywell actively managed Program Control Document (PCD) requirements using IPSS to ensure they delivered Getting the Job Done FY15 Gas Transfer System (GTS) limited life components on time.

FM&T executed W87 ALT 360 by completing the Proof of Development (POD) Builds 1 and 2 on time and within budget. Honeywell experienced a two-month delay to the POD 2 baseline schedule due to new tubing acceptance issues and replacement cycle time but they effectively recovered the schedule and delivered assets against baseline commitments. In collaboration with SNL and Pantex, Honeywell identified a reduced cost shorting plug option for the B61 Stockpile Management (SM) Disassembly Life Extension Program (DisLEP) activities and avoided an overall ~\$5M cost avoidance to the B61 program. In lieu of purchasing nine (9) new Coordinated Measurement Machines (CMM), FM&T also identified an opportunity to update existing CMM controllers, which equated to an ~\$2 million programmatic cost avoidance. Additionally, Honeywell identified available Base Spares inventory to support H1616 maintenance requirements that supported timely customer delivery and avoided cost of new procurement actions.

FM&T met expectations within the Weapons Dismantlement and Disposition (WDD) program by completing scheduled disposition activities on time.

### **CF-1.4**

**Above Expectations**

FM&T executed R&D Support Component Manufacturing Development and completed assigned milestone requirements. Honeywell made significant strides in developing manufacturing processes and efficiencies to support product maturation. Some noteworthy examples are: (1) Developed a Flexible Test Platform that expands centrifuge test capabilities across development programs preventing the need for a separate standalone production tester. Implementation of the platform avoided over \$500,000 in costs to NNSA. (2) Enhanced weld fixtures resulting in reduced welding cycle time by ~50% and eliminating connector orientation errors for the Weapon Control Unit (WCU). (3) Developed work instructions and inspection procedures for Direct Ink Write (DIW) pads and cushions, an innovative process never before utilized to build WR product. (4) Continued development of Firing Set encapsulation process to minimize impact on at-risk components. (5) Implemented facility modifications, process improvements, and an Environmental Stress Screen (ESS) to detect adhesion issues at lower radar assembly level and to improve final assembly radar module yields. (6) Created masking tooling that enabled a ~75% reduction in the masking application set-up and introduced uniformity in the masking application process for Firing Set printed wiring assemblies (7) Continued refinement of the automated stronglink un-lock fixtures to improve reliability under various temperature profiles.

**CF-1.5:****Above Expectations**

FM&T met expectations in providing unique science and engineering capabilities. Additively Manufactured (AM) fixtures and tooling provided comparable capability to traditional machined fixtures and tooling, but utilized significantly less material and cycle time from concept to production floor. Utilization of AM tools and fixtures to support development and production has reduced average flow time of traditional machined items by 74%, reduced costs by 84%, and introduced ergonomic improvement to production staff. For example, an AM fixture designed by FM&T, reduced the weight of an original fixture design from 18 pounds to 11 pounds and improved production staff ergonomic experience. Assembly, Tooling, Lifting, Alignment System (ATLAS), a production tool developed by Honeywell FM&T, has eliminated more than 1200 NSC hoisting operations, increased production capacity by 450% and is currently used to support B61-12 Type 3E and 3C Trainer manufacturing operations. FM&T used newly developed fiber optic sensors to collect internal temperature measurements during laser welding of the B61 Actuator Pulse Battery Assembly. FM&T will use internal temperature measurements to update production simulation models.

**CF-1.6****Above Expectations**

For the B61-12 LEP, FM&T exceeded expectations in providing production technical support for 29 Component Baseline Design Reviews (BDRs). FM&T scheduled the remaining BDRs to complete by November 2015 in time to support System BDR in January 2016. Honeywell has been very responsive to Design Agency requests for drawing changes and meeting schedule commitments. FM&T has requested several life of program buys (LOPBs), is executing LOPB procurements on the Gas Transfer System (GTS), and has requested authorizations to proceed with Process Prove-In (PPI) for a handful of components. FM&T delivered their portion of the joint DA/PA Long Lead/Life-of-Program Buy (LL/LOPB) Procurement Plan to NNSA on time, although continued focus needs to be applied to execute qualification activities associated with the LOPBs. FM&T continued

work on the NEA aspects of this program. Honeywell has done a good job working component manufacturing and yield issues to ensure development hardware is available for System Testing. Continued focus needs to be on developing an acceptable process to share information as well as updating the Program Protection Plan (PPP) prior to System BDR in January 2016. FM&T developed the draft IPSS Bill of Materials (BOM), but needs to complete the IPSS BOM for the WR, JTA, and TYPE trainers for NNSA approval prior to Phase 6.4 entry in 2016. Finally, FM&T provided informative Site Reviews at the NSC in October, January, April, and September in conjunction with design agencies for Non-Nuclear Components.

FM&T coordinated closely with SNL through the product realization teams (PRTs) to ensure timely product development on the W88 ALT 370. Their close coordination on component PRTs ensured design for manufacturability and cost savings. Honeywell reported status to the Alteration Management Team (AMT) and design reviews as required for the program.

FM&T exceeded expectations this year by performing those additional activities identified in the AMT-approved IMS. DASO-26 was initially delayed due to integration issues with the Radar Module (RM) and Missile Interface and Control Module (MICM), due to the Firing Subsystem (FSS) discharge. The start was delayed while those units were modified to better handle the output. There was no Pathlink Module (PLM) in the Electrical Compatibility Test (ECT)-3A test, where the MICM/RM issues were detected. Later in the build, the first unit was functionally tested at SNL and the PLM was damaged. FM&T removed the damaged PLM and returned it to SNL for failure analysis. The build was again put on hold while the PLM failure analysis took place. Once complete, it was determined to cut the input/output lines to the FSS (done at SNL), so the PLM could function during flight (no FSS functionality). Once it was returned, FM&T completed the remainder of the Arming, Fuzing, and Firing (AF&F) assembly units ahead of schedule (Completed 10 weeks of work in 5 weeks). After units were completed, an issue with the Thermal Battery Assembly (TBA) was discovered that required rework. The units were returned to FM&T to have the TBAs removed. This process was proved-in using a development unit instrumented to make sure no damage was incurred during the machining operation. Honeywell FM&T shipped the removed TBA assemblies to Sandia External Production (SEP). In parallel, the TBA PRT worked to an expedited schedule to deliver new TBAs to the AF&F that were delivered a week ahead of AF&F need. A strong, coordinated effort, involving the AF&F and TBA PRTs and Program Management (PM), allowed the team to disassemble and reassemble both units on an expedited schedule. Honeywell FM&T completed 12 weeks of work in 4 weeks.

FM&T coordinated closely with Los Alamos National Laboratory (LANL) to establish PRTs for Conventional High Explosives (CHE) Refresh and has been instrumental in incorporating CHE Refresh scope into the W88 ALT 370 program. Honeywell redirected resources to develop component schedules and define work scope and integration into a highly aggressive schedule.

Additional details on FM&T execution of B61-12 LEP and W88 ALT 370 product realization activities are captured in SSO 1.4, below.

FM&T executed W76-1 LEP requirements in support of the Getting the Job Done requirement to deliver W76-1 LEP War Reserve (WR) warheads to the Department of the Navy in accordance with the FY15 delivery schedule and ensuring production program completion by FY19. FM&T delivered

all MC4700 AF&Fs and warhead components to Pantex as defined by the W76-1 PCD FY15 schedule. Beyond the MC4700 AF&F, FM&T shipped more than 20,000 W76-1 items. FM&T continued its long-term relationship with the US Navy, Strategic Systems Programs (SSP) in producing Arming & Fuzing components and Preset Cables in support of the W76-1 LEP. By the 4<sup>th</sup> quarter, all Navy components had successfully completed KCRIMS requalification activities on schedule and had resumed rate production quantities. During the latest semi-annual funding review with the Navy, the SSP customer expressed high praise and appreciation for the successful execution of the KCRIMS transition and the management of the Mk4A Navy program. Utilizing the baseline change management process, FM&T negotiated with the NNSA and the Navy to extend the production window for the MC4709 Terminal Protection Device due to the SA3319-3 Diode production issue at the supplier. FM&T worked closely with the supplier to improve their yield and delivery forecasts, thereby avoiding schedule impacts to the AF&F. FM&T collaborated with SNL to evaluate and resolve the MC4710 Intent Stronglink E-clip Seating issue that resulted in no adverse impact to technical performance. FM&T continues to collaborate with SNL on resolution of MC4713 Launch Accelerometer Contact Resistance measurement failure and with LANL on successful execution of the APO-BMI requalification for Aft Support production to prevent adverse impacts to W76-1 LEP production. The causes for increased program risk associated with APO-BMI requalification are due to the production of the material with a new facility layout, material production processes and new equipment configurations. LANL and FM&T are working to assemble a recovery schedule that implements additional prove-in batches of material to ensure requalified material meets its design and performance requirements for requalification by early May 2016. In addition, process modifications were performed to minimize surface imperfections even though there has not been a performance issue resulting from the imperfections.

Collaborations with the Design Agency and NNSA are continuing on the Nuclear Enterprise Assurance (NEA) to develop implementation plans and update Program Protection Plans.

FM&T initiated work scope on the W80-4 LEP in mid-June and included excellent support of meetings and FY16 Tech Mat planning with NNSA and the Design Agencies and providing financial reports as required.

For the W80-4, Interoperable Weapon 1 (IW1), and Joint Technology Demonstrator (JTD), early engagement in design concepts and selection decisions are helping to ensure producibility, and quality, and minimize cost.

### **SSO-1.1**

#### **Above Expectations**

FM&T exceeded expectations for execution of the Quality Performance Index (QPI) by achieving above 4 out of 4 stretch goals established for measuring weapon quality. FM&T site-specific QPI metrics consisted of Escapes, Scrap, Rework, and supplier Lots Accepted Trouble Free (LATF). These metrics provide visibility of weapon product manufacturing and procurement quality performance on a daily basis and the goals drive Contractor continuous improvement. The cumulative FY15 performance for each metric is as follows:

- Escapes: goal of 22 or less with a year-end total of 21
- Scrap: goal of 3.18% or less with a year-end scrap rate of 3.03%

- Rework: goal of 2.21% or less with a year-end rework rate of 0.50%
- LATF: goal of 88% or greater with 89.35% at year-end

## **SSO-1.2**

### **Above Expectations**

Overall, FM&T executed an effective Weapon Quality Assurance Program, exceeding requirements of NAP-24. The following quality initiatives were implemented demonstrating commitment to continuous improvement:

FM&T continued implementation and maturation of the process, Data Driven Defect Continuous Improvement (D3CI). The process queries and categorizes nonconformances across manufacturing identifying repetitive issues. Project teams are implementing solutions that have significantly reduced defects identified at final inspection.

FM&T made significant strides in implementation of new mechanical inspection technologies through the Quality Engineering Improved Mechanical Inspection Technologies (IMIT) initiative. FM&T significantly streamlined human touch hours by utilizing 2-D and 3-D measurement technology along with improved inspection consistency. This has resulted in an 85% reduction in inspection time for parts that apply this technology. IMIT Cost Savings in FY15 to date exceed \$155,000. FM&T also initiated and successfully began expanding application of this technology beyond the NSC to the supply base to improve consistency in Supplier inspection processes and reduce purchased product cost.

FM&T developed a 2015 Supplier Quality Improvement Strategy including establishing and filling a management position to lead this initiative. The strategy includes a process to identify candidates for supplier development on a quarterly basis as determined through a filter/set of criteria. In addition, suppliers' performance is now reviewed quarterly by the responsible Vendor Contact Field Representative (VCFR). As part of the Supplier Quality Improvement Strategy, FM&T developed a balanced scorecard for suppliers that includes cross-functional metrics (e.g., availability, delivery, and nonconformance) and established a Material Review Board (MRB) to evaluate weekly supplier performance and product disposition to identify issues and prevention opportunities. Results of the MRB review are fed back into the Supplier Development Process.

FM&T institutionalized First Article Inspection processes and they are the basis for 45 plus inspections completed in the supply base as a direct improvement to detecting Non-Conformance at the source. FM&T weapon quality has been directly involved from the beginning of Sandia External Production (SEP) transition activities and follow on interface with SNL to ensure product definitions, acceptance techniques and tester requirements were realized and executable. The SEP supply base was actively evaluated and visited for transition actions with Supplier Development overview to address changes in business process requirements. These activities have resulted in a smooth transition of selected SEP product from SNL to NSC procurement.

FM&T modified the approach to Supplier audits by incorporating additional product specific requirement assessment activities to enhance opportunities for early detection of Supplier product quality issues.

FM&T weapon quality has completed the conversion of QC-1 to NAP-24 Training curriculum for the NSC with propagation in FY15.

FM&T weapon quality took the lead across the complex in working with the local NNSA field office and HQ (NA-121.3) to identify the appropriate flow down of NAP-24 requirements to the supply chain for weapon product, including a graded approach for different suppliers depending upon the complexity of the procured part/assembly and the extent to which requirements flow down (2<sup>nd</sup>, 3<sup>rd</sup> tier suppliers). A comprehensive gap analysis was completed comparing NAP-24 requirements and FM&T purchasing quality requirement levels in support of this effort. FM&T documented this gap analysis in a revision of the FM&T Quality Manual, approved by KCFO and provided to NA-121.3.

FM&T conducted approximately 70 First Article Inspections (design/mfr drawing, specifications and instruction reviews) that directly resulted in the prevention of three quality escapes.

There was direct influence by FM&T on Nuclear Safety sampling requirements /S/ for new weapon program designs including release of SS3A6707, which addresses sampling plan requirements for proposed external CMM, Lab testing, and visual mechanical on /S/ products.

FM&T applied statistical process control (SPC) limits on select W76 MC critical process parameters through the pilot program of automated test software (TDM-Test Data Monitoring). Quality and Test Equipment engineering teamed to establish process limits, conduct reviews and validate results. The natural product teams now receive notifications of process limits failure or unnatural variations. FM&T is integrating Lessons Learned in application of SPC into new product.

FM&T developed and implemented a new “Test Equipment Focus Group” process by applying more consistency and rigor to the test equipment validation process. The new process will improve the launch quality of testers.

FM&T supported the Savannah River Tritium Enterprise (SRTE) with an onsite quality engineer residency. The support included the Tritium Quality, Continuous Improvement, and Business Excellence organization in the Tritium Product Acceptance Group and the W76, W80, W87, W88, B61 and B83 programs at SRTE.

### **SSO-1.3**

#### **Met Expectations**

FM&T made good progress implementing the tailored FPM Earned Value Management System (EVMS) on the B61-12 and W88 ALT 370 programs, while in parallel driving towards a consistent NA-18 EVMS standard that will satisfy existing weapon specific EVMS requirements and future NNSA NA-19 major modernization programs. Some noteworthy EVMS and project controls accomplishments included: (1) Rapidly increased project controls staff and provided training on EVMS requirements, (2) Hired an independent assessment organization to evaluate core EVMS processes, (3) Defined core EVMS business processes (organization, planning and budgeting), (4) deployed schedule risk analysis software to enable better cost estimation, and (5) revamped enterprise risk management process to ensure internal functional business areas (Program Management, Engineering, Procurement, and others) adequately identify, categorize and communicate risks.

For the B61-12 LEP, FM&T exceeded expectations in completing the Integrated Baseline Review (IBR) of their site project controls system and providing a formal response to IBR recommendations. The response included detailed plans for addressing each IBR issue and a schedule for implementation, including schedule improvements. While FM&T completed the NNSA Burn-Down Plan to refine site contributions to the NNSA Integrated Master Schedule (NIMS) by 3/30/15, recently several PRTs have discovered disconnects between engineering handoffs between the Design Agency (DA) and the Production Agency (PA), resulting in potential schedule delays and incorrect logic flowing into the NNSA IMS. The disconnects have been resolved but it requires continued effort by Honeywell and the DAs to ensure all handoffs are captured, corrected and briefed in the site schedules and correctly flows logic into the NNSA IMS. FM&T has developed new tools and shown excellent commitment to correcting schedule handoffs and NIMS contributions. FM&T is piloting process for updating EVMS performance from Enterprise Resource Planning (ERP) data and expects to have systems implemented for all components prior to compiling data for the December Baseline Cost Report delivery.

FM&T identified and managed risks in accordance with the B61-12 LEP Risk & Opportunity Management Plan. FM&T also supported cost management boards for the B61-12 LEP in October 2014 and April 2015 and have initiated unit cost tracking with PRTs at component reviews. FM&T did an excellent job submitting monthly site reports, site EVMS reports, change request details, and site schedule updates in the requested format to the B61 LEP Federal Program Manager.

For the W88 ALT 370 program, FM&T provided monthly EVMS reports IAW the intent of the newly released Project Controls Administrative Procedures (PCAPs). The Contract Performance Report (CPR-1) by Control Account (CA) Work Breakdown Structure (WBS) met requirements, but reflected a portion of schedule variance that FM&T considered "planning errors." FM&T actively engaged with NNSA and the Navy to communicate resolution of issues with their EVMS revealed during the February 2015 Integrated Baseline Review (IBR). The one outstanding issue is related to tracking of EVMS using the Manufacturing Requirements Planning (MRP) system. They are currently performing a pilot study using the Navy Fuze Simulator and are expected to achieve success. Additionally, FM&T has been actively engaging with NNSA to integrate EVMS on the CHE Refresh scope of work.

#### **SSO-1.4**

##### **Above Expectations**

FM&T delivered more than 51,000 B61-12 and W88 ALT 370 material and hardware items as part of FY15 production readiness activities in accordance with NNSA requirements. This included working on provisioning to ensure adequate inventory was available for hardware deliveries, managing a large magnitude of inter-site development contract orders, and managing development workload with existing planned enterprise production planning system workload to ensure both existing production hardware deliverables like the W76-1 AF&F and development requirements were met. FM&T responded very quickly to DA definition requirements and changes to baseline design requirements on multiple components were incorporated. FM&T provided timely delivery and rapidly incorporated quick turnaround design changes needed for system level testing on both development programs. FM&T implemented strategies and closed procurement gaps on a number of Commercial Off The Shelf (COTS) components. A What if (WIF) planning analysis was completed,

which enabled early identification of environmental capacity needs and development of mitigation strategies.

Specific FM&T contributions to product realization activities are: (1) Participated in 29 B61-12 Baseline Design Reviews (BDR) providing development hardware build status and production strategy information on manufacturability, procurement, testing, and other factors required to mature product. (2) Collaborated with the Design Agency to resolve B61-12 Firing Control Unit (FCU) pre-mature fire anomalies by implementing design and process changes to reduce encapsulation cracks prior to the next development build. (3) Continued Design Agency collaboration to resolve Fusilli development challenges. (4) Implemented process and reconfigured equipment to address Low Temperature Co-Fire Ceramic (LTCC) shrinkage and adhesion challenges and is continuing efforts to improve overall product quality and yield. (5) Continuing Design Agency collaboration to improve producibility on W88 ALT 370 Firing Subsystem due to mechanical dimensions on housing. (6) Analyzed enhanced and DA additional environmental test needs, equipment capability, and capacity. (7) Collaborated with the DA to characterize Electrostatic Sensitive Device (ESD) production environment to address W88 ALT 370 device sensitivity concerns and planning of FY16 component level validation testing. (8) Developed new weld fixture to eliminate B61-12 WCU connector orientation errors. (9) Designed and additively manufactured new fixtures to support WCU PWA selective soldering process that reduces part to part and within part variability. (10) Improved B61-12 ISL/W88 ECSL environmental fixtures that mitigates vibration resonance, provides additional thermal insulation, and adds axis test flexibility. (11) Reduced the number of production fixtures needed for B61-12 ISL and W88 ALT 370 ECSL welding from 30 to 6, resulting in an ~\$112,800 cost avoidance to the programs.

FM&T exceeded expectations in supporting the B61-12 LEP by executing production readiness activities in accordance with the NNSA Integrated Master Schedule. This has included working on provisioning to ensure parts are available to support hardware deliveries for testing. FM&T has been very responsive in incorporating changes from the DAs on multiple components. FM&T was timely in delivering the large quantity of hardware to support PRT analysis, system testing, and the s1v1 Type 5B prototype trainer. Two areas that still need improvement are the procurement timelines which have been coming in longer than anticipated, as well as the WIF analysis, which has been delayed several times prior to delivery. Both of these items are critical to ensure NNSA B61-12 LEP commitment dates are met.

While it is early in this program for production readiness and production activities, Honeywell FM&T is currently supporting the design agencies for the W88 ALT 370 and CHE Refresh activities to ensure design for manufacturability and cost savings. Honeywell FM&T is on track for Life of Program Buy purchases as the SNL Design Agency releases Advance Engineering Releases. Honeywell FM&T effectively coordinated with SNL to negotiate the Engineering Release Matrix that is the cornerstone for critical Design Agency and Production Agency schedule handoffs. Honeywell FM&T is currently working with LANL to align critical schedule handoffs for the CHE Refresh scope of work.

## Performance Objective 2: Reduce Global Nuclear Security Threats Mission

### Description

Successfully execute authorized global nuclear security mission work in a safe and secure manner to include the Non-Proliferation, Emergency Operations and Counterterrorism missions. Integrate across the contractor, while maintaining an NNSA enterprise-wide focus, to achieve greater impact on a focused set of strategic national security priorities. Provide defensible objective evidence.

Very Good

During the reporting period, Honeywell FM&T completed all, and exceeded some, of the assigned scope associated with Performance Objective 2 providing very good support and value to the NNSA's national and international security missions. FM&T continued strong partnerships with other Nuclear Security Enterprise (NSE) sites and government agencies in this endeavor. FM&T contributions included providing technical, manufacturing and integrated supply chain management expertise in support of Emergency Operations, Defense Nuclear Nonproliferation, Counterterrorism and Counter Proliferation, Department of Defense, Department of State and other agencies. Specifics of note during the reporting period included accelerated procurement of \$2.5M in equipment for the Emergency Communication Network; completion of FY15 Emergency Response tasking \$600K under budget; and execution of over 900 assessments in support of the DOE/NNSA weapons of mass destruction (WMD) interdiction program.

Customer satisfaction associated with FM&T's Global Security (GS) enterprise was very positive during the reporting period.

### CF 2.1

#### Above Expectations

FM&T completed all and exceeded most of the performance criteria regarding efforts to remove, eliminate and minimize the use of proliferation-sensitive materials. Activities completed during the reporting period included: excellent performance as plant lead for International Nonproliferation Export Control Program (INECP) in Hong Kong, Macau, Singapore, and Taiwan; excellent technical and project management support for engagements designed to build partner country capacity in the detection and prevention of illicit trafficking in strategic commodities; and in centralized logistics support for all INECP training materials used in engagements. This tasking was consolidated from multiple sites in FY15 with \$102,000 in cost savings.

### CF 2.2

FM&T is not currently funded to support this contributing factor.

### CF 2.3

#### Above Expectations

FM&T exceeded expectations in most areas of Export Control Review and Compliance (ECRC)/Interdiction including noteworthy export-control technical reviews in support of Department of Commerce export license applications and excellent technical support of WMD interdiction activities. FM&T continued to maintain expertise in machine tools, industrial processes and standards in support of the complex mission and export control review activities.

**CF 2.4****Above Expectations**

Recognized as a NSE leader in Additive Manufacturing, and its potential applications, FM&T exceeded expectations in expeditiously allocating resources to present and participate in a panel discussion on Additive Manufacturing at the 2015 Summer JASON Study on Alternative Pathways in Nuclear Technology seminar, although not initially funded to support this CF.

**CF 2.5****Above Expectations**

FM&T provided very good technical/policy solutions and developed programs to reduce nuclear/radiological dangers. Specifics of note included: participated in the third quarter Defense Nuclear Nonproliferation Lab Council that focused on the development of strategic planning guidance for the organization and the delivery of 150 of the 9977 shipping containers and Heat Dissipation Sleeves two weeks ahead of schedule.

**CF 2.6****Above Expectations**

FM&T's performance was very good in support of the NNSA's Emergency Response Mission. Specifics of note included: completion of all FY15 scope \$600,000 under budget; procurement of \$2.5 million in communication hardware and equipment for the Emergency Communication Network in an accelerated time frame; demonstrated exceptional capability and expediency with regard to export control compliance resulting in the designation as the sole facility from which all export control items are processed for the international stabilization program; and exceeded expectations by supporting the Stabilization Program implementation at US City # 9, as well as, maintaining the readiness of the Level V tool in the cities providing training and excellent technical support. FM&T continues to meet expectations in support of the Render Safe Program by supporting major exercises and communication initiatives. FM&T met expectations for National Technical Nuclear Forensics/Post - Det Program by maintaining operational readiness for the DOE Forensic Operations Team (DFO).

**CF 2.7****Above Expectations**

FM&T exceeded expectations in most areas. FM&T proactively contributed to and participated in the Nuclear Counter-Terrorism relevant working groups, which guide research and development support efforts for specific render safe missions, including the Render Safe Working Group. FM&T provided strong leadership in coordinating strategic discussions for secure communications platforms in support of render safe missions. In addition, FM&T shipped over 1,000 parts designed and fabricated in support of an on-going nuclear counter proliferation project at a cost that was 20% below budget.

**SSO 2.1****Above expectation**

FM&T provided noteworthy national and international support of NNSA's mission related to emergency management, incident response, nuclear forensics and Emergency Operations. Collaboration with the design labs on new technologies and capabilities in support of the NA-40

Mission was excellent. Specifics of note during the reporting period included: completed FY15 scope \$600,000 under budget; led the development of the FY16 NA-42 Strategic Plan; procured \$2.5 million in communication hardware and equipment for the Emergency Communication Network in an accelerated time frame. Overall FM& T met expectations for the following activities: supported emergency operations, managed and maintained readiness for deployable response teams; provided training to emergency responders nationally and internationally; delivered equipment and technologies on time and effectively supported NA-40's emergency response missions; and participated with HQ during the planning and execution of emergency response exercises and drills.

## **SSO 2.2**

### **Above expectations**

FM&T exceeded expectations in most criteria associated with the completion of Global Initiatives for Proliferation Prevention (GIPP) projects. FM&T closed out all GIPP projects six months ahead of the end of calendar year 2015 goal with continued outstanding collaboration on R&D projects with Former Soviet Union (FSU) Weapons of Mass Destruction (WMD) experts. Throughout the history of the program, FM&T has consistently worked to facilitate ongoing relationships between FSU partners and U.S. industry to support the sustainability of partnerships built through the GIPP program.

## **SSO 2.3**

### **Above expectations**

FM&T continued support of selected disablement efforts and diagnostic tool development. Special recognition for active support of and participation in the planning for Campaign 2 of the Tier Threat Modeling Archive-Validation experimental suite activities in the ongoing effort to predictively model disablement actions. FM&T provided notable teamwork with LANL in the transition for production of the MC-15 diagnostic tool.

## Performance Objective 3: DOE and Strategic Partnership Project Mission Objective

### Description

Successfully execute high-impact work for DOE and Strategic Partnership Project (SPP) Mission Objectives safely and securely. Provide objective evidence that demonstrates the value of the work in addressing the strategic national security needs of the U.S. Government.

**Excellent**

Overall FM&T completed all, and exceeded almost all, assigned scope and expectations associated with this performance objective. FM&T's diverse resources and technologies supported an expanding customer base each with unique threats, missions and requirements. Primarily focused on strategic national security needs, FM&T delivered both innovative thinking and viable solutions to SPP customers' requests and problems through performance of associated high impact work on time, to scope and on (or below) project cost.

Specific objective evidence in support of the above performance objective is detailed in the following Contributing Factors (CFs):

#### CF 3.1

##### Above expectations

FM&T met all, and exceeded almost all, plans, initiatives and expectations in aggressive pursuit of high impact work that leverages, sustains and strengthens its current core competencies in science and engineering, facilities and essential skills. Noteworthy in this reporting period were: partnership with three Air Force (AF) major commands engaged in remotely piloted aircraft doubling the scope of the previous year and on target to become an AF program of record in FY17; engagement with AF resulting in a test method change that saved \$50K in project costs on jet engine cables; administration of the Trusted Access Program Office (TAPO) that provides microelectronics to meet national security needs. In FY15, TAPO realized its largest funds in orders to-date at \$17.3M, a 47% increase over FY14.

NSC has done well in all categories of its established performance measures pertaining to its interagency intelligence work. The accessibility of NSC's Field Intelligence Element leadership, principal investigators, and SIPP coordinator for addressing SIPP issues is impressive, and demonstrates a dedication that they are mission focused, and highly prioritize its customer's needs. FIE Operations at the NSC have exceeded expectations. DOE-IN very much appreciates the FIE Director's input and advice on the future business structures for in the Intelligence Enterprise. NSC does well in strategic planning and program vision of its DOE CI program. NSC serves as DOE IN's Technical Analysis Translation Service (TATS) Program Coordinator. Through the support of NSC, over 600 DOE scientists and engineers have been effectively utilized to meet the Intelligence Community's (IC) technical needs in the area of foreign language translation. Further, NSC has been instrumental in developing and maintaining advance technologies (such as Human Translation Learning Machines) and instructional courses relevant to the IC's mission needs. In FY15, NSC updated the Missile and Enrichment Technology Orientation Courses, and initiated new curriculums for emerging technologies.

NSC supported IN in DOE National Laboratory Science and Technology capabilities briefings to multiple IC Agencies.

### **CF 3.2**

#### **Above expectations**

FM&T met all, and exceeded almost all, plans, initiatives and expectations to leverage, sustain and strengthen unique science and engineering capabilities, facilities and essential skills in support of future national security mission requirements. Noteworthy in this reporting period were: strengthening its ability to support the Cyber Security mission by gaining additional expertise in embedded system domain knowledge and digital forensic capabilities; led a partnership with the University Affiliated Research Center at the University of Nebraska to support future mission capabilities resulting in a successful first endeavor where the university fabricated and delivered a variety of low frequency magnetic field sensors; employed the Honeywell User Experience (HUE) to discern both current and future mission needs of a diverse group of invited customers.

### **CF 3.3**

#### **Above expectations**

FM&T executed at a high performance level during the reporting period. Effective management and planning enabled the successful execution of 1,200 projects within project cost and without quality escapes. Ship performance was 99.0% on 110,000 deliverables equating to \$277 million in mission scope (12% increase over FY14). FM&T achieved full cost recovery of \$106.8 million, which reduced burden rates to Defense Program mission customers, stabilized labor rates, improved forecasting and planning, and generated project cost savings; all noteworthy accomplishments during the reporting period.

## Performance Objective 4: Science, Technology, and Engineering (ST&E)

### Description

Successfully advance national security missions and advance the frontiers of the ST&E in accordance with budget profile, scope, cost, schedule and risk while achieving the expected level of quality, safety and security. Effectively manage Laboratory/Plant Directed Research and Development (L/PDRD) and Technology Transfer programs to advance the frontiers of ST&E. Provide defensible objective evidence.

**Excellent**

FM&T is making significant strides in seeking business excellence for technology portfolio management. Groups of similar technologies, Centers of Excellence (COE), with a common goal are being managed in six technology focus areas. Selection criteria value is given to emerging technologies, workforce development and business strategies that align with the goals of the NNSA. The COEs now report to the newly created Chief Technology Officer (CTO) of Engineering. This reorganization continues to drive the identification and implementation of new “value added” technologies and increased technical oversight and accountability.

### CF 4.1

#### Above expectations

The COE strategy is documented in Technology Roadmaps, which are used in identifying and prioritizing Plant Directed Research and Development (PDRD) projects, early Technical Readiness Level (TRL)/Manufacturing Readiness Level (MRL) Non-Nuclear Readiness projects, capital equipment, and needed skills to close skill gaps. The foundation of this managed approach includes possessing the “Right Technology at the Right Time” to execute the mission for both Defense Programs (DP) and Global Security (GS). In order to create this strategy, COEs collaborate with Systems Engineering and Program Management to identify technologies desired by DP and GS customers. FM&T also researches new technologies that provide productivity as well as efficient and effective solutions to NSC internal business processes. In addition, FM&T has developed focus areas within the COEs and the associated engineering staff. These focus areas are regularly evaluated to ensure that the research being pursued is relevant, appropriate and effective.

FM&T has implemented a research strategy and communication plan that clearly aligns discretionary investments, specifically PDRD, to support DOE/NNSA priorities. In order to be more responsive to emerging development needs that occur throughout the year, an Emerging Projects PDRD process has been established, documented and communicated with the engineering staff. Of the \$21 million FY15 PDRD total budget, \$6 million was set aside for Emerging PDRD. Process guidelines have been established, documented, and communicated with the engineering staff for Quick Response PDRD projects. These are short term (< 3 month), low cost (<\$25,000) projects to explore very low TRL feasibility of ideas as an early gate to either a larger and more complete PDRD proposal for the following year; or deciding that further investments should not be made. Quick Response proposals are reviewed weekly by the COEs and can be vetted and turned on within two weeks of submission. Quick Response PDRD Projects are an excellent mechanism for engaging the engineering staff as new ideas come up throughout the year that do not align with the annual PDRD call for proposals. This structure for managing technology development was shared with PDRD

managers from Y-12 and Pantex and the COE philosophy and similar structures has been adopted at their sites.

A new Trust Focus Area within the Electrical Products Center of Excellence was established to mitigate threats to NSC supply chains through long-term technology and resource planning. The NSC has multiple technology development and implementation efforts around Trust and FM&T is now strategically coordinating to mature necessary capabilities for current and future needs.

FM&T is engaging with design agency partners early in product development for the W80-4 and Joint Technology Demonstrator (JTD), as well as looking at future opportunities for IW1. They are attempting to combine the revolutionary new process ideas with complementary new architectures with the goal of dramatically reducing the cost, and time to develop and produce a system by 30% to 50%.

The Additive Manufacturing Focus Area was split into a Metals AM Focus Area and a Polymer AM Focus Area. This will accelerate the advancements of each and highlight the difference in strategies required to make them both successful.

## **CF 4.2**

### **Above expectations**

Regular communication of NSC technology roadmaps, implementation plans, and research & development projects with the Kansas City Field Office (KCFO) and periodic visits of COE leaders to NNSA-Headquarters in Washington, D.C. provide ongoing visibility of active research pursuits and benefits. NSC teams partner with the NSE Laboratories on research and process development activities to ensure results have multi-site benefits. These benefits include cost savings, technology insertion, process alignments and efficiencies.

Test Equipment Engineering recently delivered the latest iteration of the B61 Space Hats to SNL to support assembled system tests. This latest design translated the Space Hats onto a horizontal plane for testing a functional weapon system radar. Significant redesign efforts were incorporated for new mounting fixtures, infrared alignment, and to secure the test assembly cart to a B61 mounted in a horizontal holding fixture.

FM&T scientists met with Los Alamos National Laboratories (LANL) and Lawrence Livermore National Laboratories (LLNL) representatives to discuss new silicone formulations for Direct Ink Write (DIW) applications. The group generated a list of ideal properties the next silicone formulation would ideally possess, including being softer than the current COTS material. There is a strong desire to collaborate across the NSE to create and test silicone formulations that meet enterprise needs, rather than each site developing boutique formulations for site specific application.

FM&T successfully completed first production of classified parts via DIW and delivered 241 DIW Pads A and B in support of development lot 1 for the W88 Alt 370 Armed, Fusing & Firing. All pads were fabricated in less than one month and shipped four days ahead of schedule.

The centrifuge tester team has been working with Sandia to implement Ultrasonic Probe test capabilities for MC5008 L A. The probe emits a sound pulse, which reflects off of internal surfaces of the LA, before being sensed by the probe itself. By analyzing the data from the probe, the position of the internal piston mass can be determined throughout testing.

Several metal AM parts have been created for 3X and 2P Mass Mocks. Printing an initial set of 3X and 2P Mass Mocks saved \$19,000. Three subsequent development trials have been completed creating acceptable parts with a total cost savings of \$456,000.

The Common Tester Architecture (CTA), developed on previous PDRD & CMD projects, has led to significant cost savings for the B61-LEP and W88-Alt programs. A survey of 15 new W88-Alt testers identified \$6 million in savings, about 25% of tester costs is expected to be realized. Combined savings on the B61-LEP and W88-Alt programs was initially estimated to be \$13 million, (18%) with \$2.5 million already realized towards that goal.

A new Fortus 900 FDM Additive Manufacturing 3D printer system from Stratasys will soon be available to provide prototyping, development, and production support for test equipment fixturing and other Honeywell FM&T departments. The new system will also be capable of producing parts faster and more than 3 times larger than the previous Dimensions 3D printer system.

The AM-Mechanism PDRD team procured mechanism parts that are traditionally manufactured using Numerical Control (NC) machines made on a Concept Laser MLab machine. By using Additive Manufacturing the lead time was reduced by 90% for a small lot of parts.

The header PDRD team identified possible process improvements through the use of metals Additive Manufacturing (AM). The capabilities of AM allow for unique designs that are not otherwise manufacturable. The FM&T header team successfully sealed the first set of glass ceramic headers. The fixtures used were additive manufactured 304 steel with graphite button inserts. The benefits of the fixtures include: Reduced cycle time for manufacturing fixtures, lightened design to reduce thermal mass, and reduced manufacturing cost.

In the area of acquisition and procurement, NSC is working with DOE IN to develop new policies for supporting wider needs. During this period, NSC has been the vanguard for DOE IN in this area, and is serving as the test case for future use across the IC.

### **CF 4.3**

#### **Above expectations**

FM&T met with NA-123 Technology Maturation to discuss Digital Manufacturing and necessary infrastructure and technology investments to develop a Digital Manufacturing process that will reduce component development cycle time and cost.

Ensuring that research is advancing the frontiers of engineering, FM&T submitted 21 invention disclosures, filed three patent applications, and earned four patents.

FM&T developed five unique potting shells using Additive Manufacturing for a specialty Radar Cable. The shells are made from glass-filled Nylon 12 and were delivered in less than two weeks,

representing labor savings of approximately 60 hours and a flow time reduction of nine weeks when compared to traditional hard tooling fabrication time and part molding time. Tooling savings is estimated at \$13,000.

FM&T developed new tooling resulting in a more accurate and controlled method for hand soldering. The new tooling improved manufacturability by removing operator variability. Prototype tooling has been created to validate the concept.

Benchmarking of applied technology is another mechanism used to gage progress and support key technology areas. An example includes FM&T benchmarking the Honeywell Aerospace's electrical component counterfeit detection process at Sandia, the capability at NAVSEA Crane, and also at the National Security Agency (NSA). The collaboration works to assure that the technology and processes used at the NSC are the best, perform as anticipated, and that new ideas are developed to evolve the detection and prevention process as new advancements in technology are being evolved in commercial industry. It also improves its awareness of trends by industry and potential adversaries.

#### **CF 4.4**

##### **Meets expectations**

The NSC provides a multi-faceted approach to maintaining an environment that enhances the technical workforce. Critical technical skills needed to enable the national security mission are identified and assessed by COE leaders and technical managers. Gaps in critical skills are mitigated by a variety of research and training opportunities such as the Technical Fellowship Program, quick response and emerging technology PDRD projects, bite sized seminars and conference travel.

COE leaders have deployed a Technical Readiness Review (TRR) and shared with internal engineering technical managers. Critical skills have been identified in each COE Focus Area. Each staff member is rated based on the skills required, and the result is an ongoing indicator of skill gaps and potential single point failures. To ensure that skill sets are evolving with the technology, the COEs are very engaged in the process. The system also incorporates an action item list to ensure that action is being completed to fill gaps or prevent potential single point failures.

The Advance Engineering Simulation and Analysis (AESAs) simulation group hosted an annual open-house to kick-off the latest in simulation platforms, the computer system "JARVIS". The open house was successful in helping staff to understand the simulation opportunities and engaged in simulation activities as a first step under the Simulation First initiative to reduce costly design iterations.

Three FM&T associates were selected to participate in the on-going Technical Fellowship program. This program provides opportunities for associates to further their education by obtaining advanced degrees that will benefit advancing competencies and capabilities tied to the FM&T Technology Roadmaps.

#### **CF 4.5**

##### **Above expectations**

Early engagement with the Design Agencies regarding future technologies is one of the most important ways that FM&T gains understanding of future weapon advanced technology needs. This early engagement has allowed the FM&T to anticipate and develop appropriate project and program ideas, which ultimately lead to the selection and funding of projects and programs that accomplish the mission. FM&T continues to conduct a significant amount of technology development in support of future weapon programs including the B61-12, W88 ALT 370, W87 ALT 353, and the Long-Range Stand-Off (LRSO).

Examples of technologies developed for support of future weapon programs are:

- Additive Manufacturing (AM) parts for Mass Mocks with a projected total cost savings of \$456,000.
- Direct Ink Write (DIW) Silicone compression pads that promise reduced cost and flow time along with a smaller factory footprint.
- Provision of DIW parts to SNL in support of aging studies. This will assist in down-select decisions needed to incorporate this technology into the stockpile.
- The W76 Lightning Arrestor Connector (LAC) cable bending fixture was identified as a metal AM improvement opportunity. The tool is used to create bends in flat flex cables. The legacy tool, made from a stereolithography polymer, was fragile, experienced breaking after a few uses due to the forces involved when bending a cable. A stainless steel version was created using a recently installed Renishaw AM250 additive metal machine.
- FM&T is transitioning Additive Manufacturing (AM) towards production certification and recently installed an AM machine to train production staff on AM capabilities, processes, and inspection.

#### **SSO 4.1**

##### **Meets expectations**

FM&T engages and participates in collaborations with external agencies to communicate and stay abreast with leading edge technologies. These interactions and relationships create innovation and creativity that consistently lead to improved processes and systems that support the NSC mission. The COE leaders and engineering staff hold leadership positions in professional societies and university boards. FM&T COE leaders and engineering staff are involved in technical exchanges and tours with the NNSA, military, Other Government Agencies and civilian organizations.

An FM&T Engineer is one of 21 Advisors for RAPID, a worldwide, preeminent event for 3D printing, scanning, and Additive Manufacturing. The engineer was invited to become a RAPID Advisor because of recognized leadership for more than two decades in Additive Manufacturing technology.

Missouri University of Science & Technology and FM&T signed a Master Collaboration Agreement (MCA) that will facilitate increased collaboration between the NSC and the university, and serve as a pilot for partnerships with other universities. The purpose of the program is to identify strategic technology areas for joint research and development of new technologies to meet national security needs. The exchange is intended to be mutually beneficial to both the NSC and nonprofit/university partner. The agreement also pre-negotiates the terms of all paid project work between the institutions so that as opportunities arise, contracts can be placed quickly and efficiently. This will ensure that opportunities are not missed due to lengthy up front negotiations of sensitive areas such as ownership of intellectual property.

FM&T hosted an Atomic Weapons Establishment (AWE) associate for the month of June. The host was part of an exchange focused on developing stronger relationships between the two parties, and specifically, working relationships within the simulation technologies. This focus exchange is part of a 'swap', where NSC relocated an analyst over to AWE for the same duration and similar subject/work content.

## Performance Objective 5: Operations and Infrastructure

### Description

Effectively and efficiently manage the safe and secure operations of the 'site' while maintaining an NNSA enterprise-wide focus; demonstrate accountability for mission performance and management controls; assure mission commitments are met with high-quality products and services; and maintain excellence as a 21st century government-owned, contractor-operated facility.

**Excellent**

### CF 5.1

#### Above expectations

FM&T has managed its Environmental Safety and Health (ES&H) Program to the FY15 HS&E Management System Description and Worker Safety & Health Program Plan. FM&T maintained certification to ISO 14001 and OHSAS 18001 pursuant to the first integrated ISO 9001, ISO 14001, and OHSAS 18001 certification audit completed in March 2015. Consolidating the separate audits into one integrated annual audit covering both KC & NM resulted in about \$40,000 per year cost savings. All non-conformances identified during the audit were corrected, hence the issuance of recertification. HS&E performance remains better than industry with a CY15 TRC rate of 0.35 and a DAFWC rate of 0.06 (83% and 99% better respectively). NM has completed 30 months without a DAFWC case.

Regulatory inspections conducted in FY15 included EPA RCRA, MDNR Air, MDNR No Exposure, and KCMO wastewater at NSC-KC resulting in no fines or penalties. An Albuquerque Fire Marshall inspection of Craddock A, B, and C resulted in no findings. FM&T/KC hosted various regulatory officials for an overview of the LEED GOLD facility operations. Other oversight included a Pressure Safety Program assessment by experts from the Oak Ridge National Laboratory (ORNL). Also, NNSA NA-50 and KCFO audited the FM&T Radiation Protection Program and reviewed the Fire Protection Program.

FM&T received multiple awards during FY15 including, but not limited to National Safety Council 2015 Occupational Excellence Achievement Award (KC); Million Work Hours Award (two million hours worked without a DAFWC) (KC), Perfect Record Award (12 consecutive months without incurring a fatality or DAWFC). Honeywell Aerospace received the National Safety Council Robert W. Campbell Award.

Individual programs continue to be actively managed to assure compliance with changing requirements and organizational changes. Baseline data collection for NSC for noise and sustainability started in FY15. The radiation program reviewed information related to a historic Ni-68 operation and supported the NIOSH review of several records. Caution signs were posted for plant operations. Improvements were completed for Building 6 to install communication intercoms. Multiple environmental improvements were accomplished including tracking databases for air emission. FM&T participated in numerous wellness activities such as providing 700 Flu Shots and participating in the DOE Active for Life Initiative. FM&T provided support for a Savannah River Site Emergency Management Program Assessment.

A comprehensive Fire Hazard Assessment and the first Emergency Planning Hazards Assessment were completed for NSC-KC. The first Active Shooter exercises were completed. FM&T is pursuing a Computer Aided Dispatch (CAD) interface to support quicker first response from the fire department, benefiting the greater community.

## **CF 5.2**

There are no capital improvement projects at the NSC.

## **CF 5.3**

### **Meets expectations**

FM&T met expectations (was very good) in their ability to execute and deliver an effective, efficient, and responsive security program. FM&T has made continuous improvements to underperforming programs from the previous year. FM&T stood up a dedicated performance assurance team that will focus on requirements management, self-assessments, and program performance. FM&T has self-identified and is correcting several issues, and responds quickly to issues that arise at the site. FM&T has made progress in transitioning to an electronic requirements management system intended to address requirements management issues.

The Office of Enterprise Assessments conducted a review of the Safeguards and Security Program at the NSC in March 2015. The inspection identified several strengths that included Protective Force (PF), Performance Assurance, and Physical Security Systems (PSS). Although there were some concerns noted, the majority of the inspection identified a sound Safeguards and Security program at the NSC.

FM&T continues to implement technical integrated security enhancements at the Site. This year they replaced the iClass badges with PIV-C badges, bringing the Site closer to being PIMM Level 5 compliant. They also implemented systems/processes that detect & alert for mismatches in physical access control & logical access sessions, which has resulted in the ability to reduce the facility's susceptibility to insider threat by pre-identification & notification of suspicious or anomalous behavior. In May, Sigma 15 verification & access for Sandia employees became automated at the NSC; another first within the NSE. This automation saves countless man-hours in person-to-person verifications & mistake-proofs the system.

Improvements were made to site performance metrics, resulting in more meaningful, and timely information pertaining to the health of the security program. Management has developed effective processes to understand and respond to the information proactively when negative trends emerge. Security Management has collaborated with numerous other Security departments and agencies to help resolve complex issues and to share and leverage best practices to enhance program effectiveness.

## **CF 5.4**

### **Above expectations**

FM&T has improved the management and execution of maintenance and facility projects within the new operational model at the NSC. FM&T implemented a project management, budget, and prioritization process that integrates Integrated Supply Chain, Facilities, Engineering, Security, Quality, and Program Management functions into the project approval and execution process.

FM&T provided timely and thorough information consistent with the NNSA Infrastructure Program Management Plan guidance and proactively communicated issues to HQ, especially those related to Roof Asset Management Program (RAMP) and DSW support items. Additionally, FM&T accelerated the White Space Expansion project to meet Defense Program (B-61 LEP) requirements.

FM&T is recognized for effective management of the RAMP. FM&T stood up a new contractor in FY15 to execute the reassessment, design and construction activities in a very compressed time frame. As a result, the RAMP program was able to effectively respond to a significant increase in funding and scope in FY15 despite this complicated transition.

On balance, FM&T is assessed as “Good” for FY 2015 sustainability performance. FM&T has maintained focus on sustainability metrics at the Bannister Federal Complex (BFC) with limited recapitalization funding and exhibited long term sustainability leadership through the on-going deactivation and stabilization of the BFC. The chilled water system was shut-down during the heating season and the decision was made to not restart the system for this cooling system resulting in energy savings and the removal of the chilled water meters from the meter reporting. Operations have since transitioned from BFC to leased facilities. The leased facilities at the NSC - Kansas City are a new campus that achieved LEED GOLD certification.

FM&T completed the removal and shipment of PCB contaminated equipment and material from the Bannister Federal Complex (BFC) on June 15, ahead of schedule, meeting the TOSCA regulatory requirement associated with decommissioning PCB areas at that location.

FM&T provided excellent support of the NNSA disposition activities of the BFC. FM&T provided effective oversight of the decommissioning activities underway and conducted three auctions supporting safe removal of excess personal property, reducing the overall cost to the government.

The NNSA Personal Property Branch performed a validation in September based on FM&T’s approved FY 2015 Protocol Document. The Personal Property Branch performed reviews of four on-site validation reviews, which obtained a rating of “Excellent.”

## **CF 5.5**

### **Above expectations**

Key strategic deliverables were targeted and progressed in a positive direction. A continuation of the Honeywell Operating System (HOS) is driving continuous improvement initiatives into daily execution of mission deliverables. Transparency is continuing such that the Field Office is engaged and participating in GEMBA and Lean Expert practices. FM&T utilizes KCFO’s involvement to help drive the elimination of waste from key processes and improve performance. Other efforts to deliver efficient and effective business operations include integrating physical and cyber security measures, efforts to align with the NNSA Strategic Plan, ‘myPortal’ upgrades, Six Sigma cost savings, SCMC Tool replacement, Productive Maintenance Program improving up-time availability, and earned value system enhancements. FM&T's active engagement demonstrates their willingness to ensure that performance is strong and their commitment to excellence is consistently high.

FM&T is enhancing development and production planning operations to provide better forecasting, earlier notification and resolution regarding material, equipment, technical, and deliverable needs.

Regarding achievement of site-specific Supply Chain Management Center goals, FM&T exceeded targets by completing a total of 485 eSourcing events, an 87% improvement over FY14. These eSourcing events totaled \$103.4 million worth of spend which is a 53% growth over FY14 as well. FM&T drove \$6.3 million worth of commodity agreement spend, which is an annual improvement of 99%, realizing 15% savings. They also completed 5,053 eStores transactions, a year over year improvement of 207%. This level of tool usage by the NSC yields \$7.3 million of strategic tool enabled savings to date. The NSC is also reporting strategic site savings of \$4.6 million for a total Strategic Savings of \$11.9 million (4.4% Strategic Savings rate & 6% of overall program total) against a total invoice spend of \$254 million.

FM&T has exceeded expectations with its overall annual Information Technology (IT) performance. Although Service Delivery 2.0 has taken longer to yield better performance, all IT Annual Operating Plan elements were met; overall Balanced Source Card was at least Satisfactory in all four areas. In addition, \$500,000 software and hardware costs were reduced by cancelling unneeded support. FM&T is leading all of DOE in their Multi-Factor Authentication (MFA) work required by the Federal Chief Information Officer because of the Office of Personnel Management (OPM) breach. Lastly FM&T IT staff continue to provide leadership on NNSA and DOE working groups, in the area of MFA, consolidated classified eMail, and consolidated eLearning systems.

### **Meets expectations**

FM&T Human Resources (HR) performance is meeting expectations. HR provided necessary input on the Compensation Increase Plan in a timely manner and was helpful in addressing questions regarding its submission. HR also effectively supported a Compensation Review conducted by NA-APM-13. FM&T conducted an employee relations survey and a HR Voice of the Customer survey. Both indicated an increase in overall favorability from 2014 results. HR has provided all information requested and continues to provide reasonable compensation and benefits to employees.

FM&T Purchasing met Objectives Matrix goals. An Office of Inspector General report on subcontract administration pointed out the need to improve sole-source justifications. FM&T has initiated corrective actions. KCFO is in the process of validating those actions.

FM&T IT met expectations, from the NNSA OCIO's FY 2015 Information Technology (IT) Guidance. OMB Mandated Implementation Factors 6 through 13 and all 2NV Strategy Implementation Factors 14, 15 and 16 listed in the "NNSA Information Technology Goals, Objectives and Implementation Factors (IFs) for FY 2015" are Satisfactory at this time. Leadership provided to the NSE addressing IF8 Implementation of IPv6, IF14 Lync Federation, IF12 CNSS requirements, and IF15 OneNNSA network, is rated as Excellent.

### **CF 5.6**

#### **Above expectations**

FM&T provided critical support to a surplus personal property auction, Nuclear Enterprise Assurance (NEA) process development, and export control process reform. FM&T spearheaded utilization of the most comprehensive supplier review of any NSE site and is driving the adoption of consistent processes for export approval of suppliers across NSE. It provided 100% early or on time delivery of Energy Employees Occupational Illness Compensation Program Act program Document

Acquisition Requests and successfully recovered an amount owed by a former employee and defeated a meritless lawsuit for minimal cost.

## **CF 5.7**

### **Above expectations**

Cyber Security has exceeded expectations in delivering effective, efficient, and responsive cyber security. They have met or exceeded all Annual Operating Plan (AOP) metrics and deliverables while continuing to support the NSC mission and the Office of the Chief Information Officer (OCIO) objectives. FM&T cyber security advanced security protections delivering on several key areas to include projects for PIV card utilization, DNS Security (DNSSEC) implementation, Advanced Packet Capture Analysis (SSL intercept), Network Access Control (NAC), and advancing wireless and mobility expansion. Additionally, FM&T hosted the Command Cyber Readiness Inspection team for a re-inspection of NNSA Secret Network (NSN), which resulted in a 100% score, the first ever within the DOE. FM&T continues to support and lead efforts within the NSE to advance technology and enhance protection measures. For example: hosting the NSM Cyber Technical Summit, enterprise support for NSC developed Windows Logging Service (WLS), teaming with JC3 to provide enhanced indicator data to cyber responders, partnering with PNNL for implementation of the Cyber Analytics Services Access (CASA) for review of CPP data, and development of HashBadger project started with LLNL, which provides the capability to see if cyber concerns (DLL/execution) have been seen at other sites. Lastly, FM&T cyber security worked collaboratively with crosscutting working groups to identify instances where utilization of specific technology may compromise the confidentiality of sensitive information and to identify acceptable modified configurations. This resulted in no loss or compromise of sensitive information.

## **SSO 5.1**

### **Above Expectations**

The FM&T team supporting the KCFO effort to dispose of the excess Real Property at the Bannister Federal Complex (BFC) performed above expectations in FY15. This effort has resulted in the disposal of a significant quantity of Personal Property, the sale/removal of contaminated equipment, and oversight of day-to-day operations being conducted by NNSA's planning partner.

Other Federal agencies and public/non-profit organizations received in excess of \$7 million in surplus from the BFC. A single donation was directed to the KC Engineering Zone, which is a Science, Technology, Engineering and Math (STEM) program targeting urban youth. Additionally, public sale/auction of remaining Personal Property has resulted in a net recovery of approximately \$2 million.

Removal of PCB-contaminated equipment required by regulation was completed as scheduled. A reduction in the quantity of Beryllium-contaminated equipment by reevaluating disposal/reuse requirements has resulted in a cost reduction to dispose of approximately \$1 million.

FM&T support to the KCFO during due diligence site work being conducted by a third party has been outstanding. A considerable number of schedule and logistical challenges have been coordinated expertly without reportable ES&H or operational impacts. The NSC organization, which includes representatives from FM&T Facilities, EH&S, waste management, transportation, and its Facilities subcontractor, are noted for their significant contribution to this effort.

**SSO 5.2****Meets expectations**

FM&T achieved an Office of Field Financial Management (OFFM) rating of Good (highest rating available). Finance received positive feedback for the A123 documentation and testing. They received approval for CAS Disclosure Statements 15.1 and 15.2, and have submitted 16.0, supported the finance contract transition activities, the SPP B&R recast, and several NSE Cost Improvement Initiative and other cost estimation teams. Timely submissions were received for the Entity Assessment Tool, Financial Management Assessment Tool, Internal Controls Assurance Memo, and Management Representation Letter, financial certifications, various budgetary requests, and key personnel changes. Finance held its annual Functional Finance Review and completed all internal audits. It completed multiple continuous improvement initiatives including continuing to support Earned Value development, cycle time reductions for forecast/rate process, reductions in cost transfers as a % of total cost, updated desk instructions, and training procurement and new hires on financial matters.

**SSO 5.3****Above expectations**

FM&T instigated the development and coordinated regulatory approval of the Baseline Risk Assessment and PCB Fate and Transport Study for the BFC. These documents are integral to defining the potential remaining environmental risks related to the remediation of the BFC. FM&T is also coordinating with NNSA's planning partner to close self-identified data gaps from the Description of Current Conditions Report (DCCR). FM&T's long and positive relationship with Missouri's Department of Natural Resources (MDNR) and the Environmental Protection Agency has been beneficial to facilitate regulator buy in to the process.

FM&T conducted a survey and remediation of legacy uranium management areas. FM&T has provided reports, other information, sampling oversight surveys, tours and meetings to MDNR and DOE's planning partner to address potential concerns on this issue.

FM&T has coordinated the removal of PCB contaminated equipment and has made significant progress on the replacement of the groundwater treatment system. FM&T has submitted a Revised Site wide Institutional Controls plan based on regulatory comments.

As part of a reroute of electrical power and a fiber optic line placement project to Building 2306/2312, FM&T coordinated regulatory-required excavated soil management requests for BFC projects managed by the General Services Administration.

**SSO 5.4****Meets expectations**

Honeywell has met expectations in improving contractor oversight processes to ensure comprehensive and accurate reporting, timely identification and correction of issues, including metrics that provide accurate, meaningful, and timely information concerning the health of the security program. FM&T has made progress toward transitioning to the Government Risk and Compliance Application, Modulo, and has stood up a performance assurance team to accomplish the objective of this SSO. FM&T implemented several new performance metrics, resulting in more meaningful and timely information pertaining to the health of the security program. Management

has developed effective processes to understand and respond to the information proactively when negative trends emerge.

**SSO 5.5****Meets expectations**

FM&T has met expectations in ensuring applicable NSC business processes, operating procedures, and systems (including security and safety) are utilized in performing Strategic Partnership Project work. FM&T operated to applicable NSC business processes, operating procedures, and systems as applicable to security and safety during the reporting period. FM&T took positive steps to better align its Purchasing procedures with SPP purchasing practices. An opportunity for improvement was identified related to the timely closeout of SPP contracts and the deobligation of remaining funds.

**SSO 5.6****Meets expectations**

FM&T successfully completed scheduled requalification activities as part of the KCRIMS requalification efforts and is now complete. The NSC has been restarted to a fully operational status. Facility modifications to exhaust systems and test and balance activities continue, but have not impacted production deliverables.

FM&T has made good schedule progress in the development of a plant model and configuration management system for the NSC. However, this project has experienced significant cost growth. FM&T completed the consolidation and pilot phase on schedule. Full implementation for the balance of the plant is expected to be complete by April 2017.

**Performance Objective 6: Leadership**

**Description**

Successfully demonstrate leadership in supporting the direction of the overall DOE/NNSA mission, improving safety culture, the responsiveness of the 'site' leadership team to issues and opportunities for continuous improvement internally and across the Enterprise, and parent company involvement/commitment to the overall success of the 'site' and the Enterprise.

**Excellent**

Overall, FM&T performed above expectations in effectively providing leadership to support the achievement of NNSA's vision and mission at the National Security Campus (NSC) and around the Nuclear Security Enterprise (NSE). FM&T continues to lead impactful site-wide initiatives that include the Supply Chain Management Center, Enterprise Risk Management, Manufacturing Production Steering Committee, Export Control Implementation, participation in Requirements Modernization and Integration (now called the Defense Programs Business Process System - DPBPS) as well as traditional technical contributions & residencies to the NSE. In addition, the Honeywell Operating System, Standard Transition Process for plant transitions, and Honeywell Performance & Development processes all represent successful infusion of commercial best practices into government contracting. Additional detail is provided below.

**CF 6.1**

**Above expectations**

FM&T completed the internal L1 X-matrix for Strategy Deployment in November. This document identifies FM&T's main three priorities for the next several years, under the categories of 1) Growing the Business, 2) Delivering the Value, and 3) Developing our People.

Through detailed planning, FM&T helped contribute toward a smooth transition to the new contractor at the Pantex Plant, where operations have now been fully transferred to the awardee.

FM&T is continuing to significantly enhance several focus areas of Additive Manufacturing, including polymers, direct ink write silicones, and inorganic metals. All of these efforts are in support of and coordination with the NNSA's Roadmap for Additive Manufacturing, which FM&T helped create in partnership with LLNL. In addition, FM&T initiated an effort related to "Digital Manufacturing" and is serving as a lead for the NSE, including United Kingdom participation, in a variety of advancing technologies.

FM&T has ensured alignment with the NNSA strategic vision in its community outreach and partnerships and has demonstrated enterprise leadership and effective collaboration across the enterprise. This year, FM&T engaged in several endeavors to partner with community organizations. Engagement activities that demonstrate FM&T's commitment to community partnerships include; participation in the KC STEM (science, technology, engineering, and math) Alliance, acting in support of the Big Brothers, Big Sisters "Bowl for Kids' Sake", contribution to multiple science and engineering related youth engagement activities, and sponsorship of a Rebuilding Together campaign.

**Meets expectations**

The transition to a new Roof Asset Management Program (RAMP) contractor has been very successful. Roof assessments across the complex are on schedule. Site funded construction at LANL and Y-12 is underway. FM&T successfully implemented the Time and Material contract at Y-12 for roof repairs, and work is underway. Collection of field data and design work to support FY16 construction is on schedule.

**CF 6.2****Meets expectations**

FM&T continued focus on identifying risks with divisional directors identifying 44 new risks for the NSC, while 26 previously-identified risks have been reduced or fully mitigated. FM&T made progress on development of an integrated risk management program. This program leverages Honeywell User Experience (HUE) tools and employs a consistent risk management approach across all divisions and levels of risk.

Internal assessments are performed by the Quality Assessments and Internal Audit organizations, while third party assessments are performed by Honeywell Corporate, ISO 9001, ISO 14001 and OHSAS 18001 auditors. NSC Quality Surveys and Assessments identified 157 continuous improvement opportunities through completion of 89 independent assessments through Q4.

FM&T also conducted the first integrated audit of ISO 9001, ISO 14001, OHSAS 18001 at Kansas City in March, resulting in only minor non-conformances. An audit by the local City Fire Marshall revealed no issues.

FM&T also conducted two assessments of human resources activities. The FM&T Positive Employee Relations survey was launched in April; the results yielded an overall score of 84.74%, an increase of 2.2% over 2014. The Honeywell HR Voice of the Customer Survey indicated an overall favorability rating of 93%, an increase of 5% over 2014.

FM&T conducted its annual Finance Functional Review (FFR) in August. This Honeywell corporate process has been integrated into the FM&T operating system, and consists of two components: (1) a detailed balance sheet walk-through, and (2) an overview of financial operations. This internal assessment helps ensure transparency and includes stakeholders from across FM&T and NNSA.

**CF 6.3****Above expectations**

In Q1, FM&T mapped the corporate Honeywell HOS Gold criteria against the Baldrige Performance Excellence Criteria to ensure they are complementary. This helps the actions taken to meet HOS Gold standards strengthen and enhance the Baldrige base of NSC's business.

Demonstrating positive performance results of their management assurance systems, FM&T realized over \$50 million in cost avoidance. Through organizational continuous improvement and six sigma certification efforts, 161 discrete continuous improvements were completed and over 100 candidates have been trained and certified.

**Meets expectations**

FM&T continues to use a variety of metrics and indices to monitor and drive performance results. Examples include Purchasing Objectives Matrix, HR Objectives Matrix, Total Recordable Cases, Days Away From Work Cases, Honeywell Health, Safety & Environment Performance Index, Ship Performance, etc. These systems produce data that are transparent to KCFO and NNSA and the results are tracked regularly.

Currently the Honeywell User Experience (HUE) has over 50 active projects to improve the experience associated with NSC services. Projects are selected by functional departments with solutions deployed enterprise-wide. FM&T initiated a HUE project with members of the KCFO that focused on performing contractor oversight. During the session, the group was able to highlight two important elements of the oversight process: 1) the aspects of the process most important to performing oversight well, and 2) identification of areas where improvements/efficiencies could be made.

NSC-KC and NM continue to use the Honeywell Operating System (HOS) to drive continuous improvement initiatives into the daily execution of mission deliverables. Some examples of HOS improvements include:

- During FY15 FM&T's workforce has submitted more than 11,000 continuous improvements (CIs); surpassing the 5,520 CIs submitted in all of FY14 and exceeding the FY13 total of 1,860 CIs submitted by over 590%.
- The number of Quality Escapes is down 40% when comparing FY15 with the last four years of historic data.
- Continued safety performance success with an updated Self-Assessment Tool (SAT) score of 88 at NSC KC and 83 at NSC NM.

#### **CF 6.4**

##### **Above expectations**

FM&T Quality provided demonstrations of Supply Chain Risk Management (SCRM) to the Nuclear Enterprise Assurance (NEA) community and has received requests for training from LANL, LLNL, and SNL. SCRM training has continued for NSC personnel and the NSC SCRM POC completed training at SNL supporting the NSE initiative for maturation of NEA processes

The Supply Chain Management Center (SCMC) continues its outreach efforts with Office of Science. DOE-MA, SCMC and Science have collaborated to implement an eStore platform pilot for Berkeley, Brookhaven, Pacific Northwest and Idaho National Laboratories. Three of those four laboratories now have the capability to place electronic catalog orders via the SCMC. The SCMC was also chosen by NA-50 to assist with its Asset Management Program for multiple sites. Other outreach discussions continue with NA-20, NA-70, and NA-APM (Contractor HR initiatives).

The SCMC exceeded cost saving goals for NNSA and EM sites. SCMC-enabled savings totaled approximately \$193 million (surpassing the FY15 goal of \$108 million). In addition, to demonstrate FM&T's commitment to support small business initiatives, of all the subcontract agreements placed using SCMC processes, 54.7% of those were awarded to small businesses. The percentage is even higher, 67.6%, when agreements are removed that can only be practically awarded to large businesses, such as major airline and hotel agreements.

Approval of suppliers for export-controlled items was previously identified as an NSE-wide risk. FM&T has consistently been a leader in export control across the NSE and is working to improve site integration by making FM&T's Master Approved Supplier List (MASL) secure server available to other NSE sites. The MASL will be used to share export control approved suppliers, eliminate multiple supplier reviews, and alert sites of potential concerns with suppliers.

FM&T is providing DOE and NNSA with strong technical support through the use of residency assignments. Examples include an FM&T Engineer serving as a member of the 2015 NNSA Defense Programs Science Council, a Quality Engineer assigned to Savannah River Tritium Enterprise (SRTE) supporting Tritium Quality, a Sr. Chemical Engineer serving the Deputy Assistant Secretary of Defense for Nuclear Matters, and a Technical Manager serving the NNSA Office of Materials Management and Technical Maturation.

FM&T supported the MOX site at Savannah River by sending two Cyber Security analysts to help with the installation and enhancement of Cyber Security controls. The Chief Technology Officer at MOX Services cited NSC Cyber analysts for being "instrumental in getting (their) challenged project back on track."

FM&T is maintaining its leadership role in Enterprise Risk Management (ERM) across the NSE and continues to hold ERM workshops & forums along with site visits to assist in cost efficient program development and maturation. FM&T successfully led the NSE ERM Team through an on-time delivery of HQ-level grading criteria for use on a NA-00/50 Infrastructure pilot to integrate risk based decisions on project/budget selections.

FM&T collaborated with SNL and transitioned the production mission for capacitors, magnetics, frequency devices and power assemblies from SNL to NSC; a strategy that is targeted to save NNSA ~\$3M over the next 10 years.

FM&T rapidly responded to B61-12 and W88 ALT 370 design changes and incorporated component modifications to support critical system level test requirements. Demonstrating joint commitment and accountability to core mission success, FM&T and Sandia National Laboratories jointly communicated significant accomplishments and challenges associated with major modernization programs' non-nuclear work scope to NNSA stakeholders and began assigning senior level management and due dates to issue resolution.

### **Meets expectations**

FM&T Quality responded to a request from SRTE and performed a NAP-24 operations assessment.

Additionally, FM&T in coordination with KCFO and NA-121.3 completed a gap analysis and documented flow down of NAP 24 requirements to Suppliers that can be utilized as a template by other NSE sites.

In Q1, the SCMC was actively involved in a DOE working group researching data reporting possibilities related to cost and socioeconomic achievements. In Q2, FM&T Purchasing was chosen as the NNSA pilot M&O site for implementation of the new M&O Subcontract Reporting Capability.

**CF 6.5****Above expectation**

In October, FM&T was awarded the 2014 Corporate Recognition Award by the International Microelectronics and Packaging Society (IMAPS), which honors and recognizes a corporation that has made significant technical contributions to the microelectronics industry while demonstrating support of IMAPS through organizational participation.

FM&T's proactive, strategic approach to communicating to employees, stakeholders and the public the integral steps involved in the transition from the Bannister Federal Complex to the NSC, as well as rebranding the facility with a new name to showcase the expanded scope of work performed, resulted in four prestigious awards for the FM&T communications group: two from the Public Relations Society of America, including Team of the Year; and two from the International Association of Business Communicators, including a regional award.

FM&T successfully organized more than 75 tours of the facility throughout the year and successfully showcased the NSC as a flagship model of transition for the NNSA. Those tours included VIPs from the Department of Defense (Undersecretary of Defense), DOE (Deputy Secretary of Energy) and NNSA (NA-1 and NA-2), Whiteman Air Force Base (General Tibbets), the PBS news station, and other military, civilian and private organizations.

During the inaugural Kansas City Central Exchange's STEMMY Gala and Awards Celebration in late September, FM&T's Vice President for Engineering received the "Ground Breaker Leadership Award" for her significant achievements in the field of science, technology, engineering, and math (STEM).

A FM&T Senior Technical Manager was selected by Ingram's Business Magazine's as part of the 2015 "40 Under Forty" class, a group honored for being the "most influential and accomplished leaders of business, government and community in Kansas City."

A FM&T Cyber Security Analyst received the DOE Office of the Chief Information Officer (OCIO) 2014 Innovative Technical Achievement Award in Cyber Security in April.

FM&T's Classification Officer was awarded the 2015 Classification Award of Excellence at the 50th Annual Classification Officers Technical Program Review Meeting in May. This award recognized his dedication through his significant contributions and improvements to the DOE classification program at both the local and national levels.

**Meets expectations**

FM&T was recognized with the Impact Award by the Kansas City Business Journal, an award that recognizes companies who are making innovative use of technology in Kansas City.

A FM&T Cyber Security Manager was interviewed by Ingram's Magazine for an article entitled "A Never-ending Vigil", on how small businesses can work to protect their IT systems.

The NSC's work on Additive Manufacturing was recently featured in an article in the Nuclear Security & Defense Monitor. The article highlighted how FM&T is working to qualify the first

additively manufactured component to be used in a nuclear weapon, a major milestone in the usage of the high-potential manufacturing method. The NSC joined the "America Makes" [formerly the National Additive Manufacturing Innovation Institute (NAMII)] "3D Printing Consortium in December.

FM&T Quality is enhancing new leaders through attendance of the Military Liaison Office (MLO) weapons program training program. All upcoming leaders are charted for completion through this program offered at no cost by the MLO.