



National Nuclear Security
Administration

Savannah River Nuclear
Solutions, LLC

Performance Evaluation
Report (PER)

NNSA Savannah River Field
Office

Evaluation Period:
October 1, 2018 -
September 30, 2019

December 12, 2019

Executive Summary

This Performance Evaluation Report (PER) provides the National Nuclear Security Administration (NNSA) assessment of Savannah River Nuclear Solutions, LLC (SRNS), performance of the contract requirements for the period of October 1, 2018-September 30, 2019, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP). The NNSA took into consideration all input provided (e.g. Contractor Assurance System (CAS), Program Reviews, etc.) from NNSA Program and Functional Offices both at Headquarters and in the field.

The work performed for NNSA programs at the Savannah River Site (SRS) is conducted by SRNS under a Management and Operating (M&O) Contract for Fiscal Year 2019. This is a Department of Energy (DOE) Office of Environmental Management (EM) contract under which NNSA-funded and directed work is performed.

*Note: SRNS's performance for Fiscal Year (FY) 19 on NNSA efforts is measured against two separate PEMP's, the NNSA Corporate PEMP and a separate Office of Environmental Management PEMP for the Savannah River National Laboratory (SRNL). The NNSA Corporate PEMP consists of six (6) Performance Goals supplemented with Objectives and Key Outcomes (KOs) for each Goal. Fee is distributed among the six (6) Goals as specified in the PEMP. For SRNS, Goals 3 and 4 are not applicable and therefore have no associated fee. The work measured against the NNSA Corporate PEMP is discussed under Goals 1 through 6 below. The work measured against the EM PEMP for SRNL is discussed under SRNL Performance Goals 1.07 and 1.08 below.

Performance against the Goals summarized below resulted in an overall rating of Very Good for SRNS. Specific observations for each Goal are provided in the following pages.

Goal 1: Mission Execution: Nuclear Weapons (\$5,644,988 At-Risk Available)

Under this goal, SRNS earned a rating of Very Good and 90% of the award fee allocated to this goal. SRNS exceeded many of the Objectives, and is generally meeting the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. No significant issues in performance exist. SRNS has continued to be successful in its performance under this contract with accomplishments that greatly outweigh issues as described below.

SRNS met all stockpile surveillance activities ensuring completion of stockpile assessment and Limited Life Component Exchange (LLCE) requirements. SRNS staff was very effective in completing their annual B61, B83 and W80 stockpile system workload. SRNS was proactive and supportive of the new IWET Directive Tool designed to replace a manual system.

SRNS met expectations for each of the stockpile weapons systems' maintenance and LLCE deliverables. SRNS met all production and delivery requirements for the B61, W76, B83, W78, W80, W87 and W88 Gas Transfer System (GTS) units. SRNS met the W87 ALT360 First Production Unit (FPU) deliverables.

SRNS received the B61-12 3X Assembly qualification requirements resulting in a Quality Engineering Release (QER) ahead of schedule. SRNS was prepared to fill and ship B61-12 bottles if directed by the Program Control Document. SRNS continues to meet nitrogen cartridge deliveries.

SRNS met expectations on the W80-4 LEP. SRNS provided significant support to the W80-4 LEP by delivering the Final Weapon Design and Cost Report Site Submittal Package to NNSA; providing input to the Schedule Execution Team as part of the Management Challenge; and supporting the System Cost Gate Review.

SRNS completed two scheduled extractions in the Tritium Extraction Facility (TEF) one of which was completed using furnace FE-200 which has never been used for extractions.

Product Quality went through a period of declining performance. (b)(7)(F)

SRNS did not achieve the cost of nonconformance (CONC) goal for the year. As a result of the quality issues and as part of its Governance, Savannah River Tritium Enterprise (SRTE) deployed independent Quality Verification Inspectors (QVIs) to apply close reservoir quality validation throughout the production cycle and identify anomalies earlier in the process. Through use of the Contractor Assurance System, issues were identified, mitigation plans were implemented, and on-time deliveries to the customer were maintained.

SRTE led a complex-wide improvement initiative to improve product supply and delivery concerns after noting a series of unsatisfactory new product conditions. Biweekly meetings

were established between SRTE and the supplier to address quality and delivery issues. This effort resulted in a 40% improvement in cycle time and a 250% improvement in delivery time. It is also being used as a model for other facilities in the nuclear weapons enterprise. SRTE also conducted a Benchmarking tour of Kansas City Nuclear Security Campus (KCNSC) to review Nuclear Enterprise Assurance implementation and training.

SRNS's team supporting the 50 pits per year mission met all cost, schedule, and deliverable requirements. Most notably, in January 2019 SRNS submitted planning deliverables for the cost estimate and schedule for CD-1. The Safety Design Strategy was submitted and approved by NNSA as scheduled. The project team for the proposed Savannah River Plutonium Processing Facility (SRPPF) has integrated well to support federal organizations such as Savannah River Field Office (SRFO), NA-APM, NA-192, Defense Nuclear Facility Safety Board, and multiple Department of Defense and congressional organizations by providing technical reports, hosting technical meetings (Glovebox Designs and 3D Drawings), and conducting multiple tours. In addition, the project team continues to integrate well with the Los Alamos National Laboratory (LANL) Project Team (30 Pits Per Year) and Lawrence Livermore National Laboratory.

SRNS has been actively engaged in the Integrated SRPPF National Environmental Policy Act (NEPA) Team. SRNS provided outstanding support and development of information materials of the NEPA Public Scoping Meeting for the proposed pit production mission at SRS. Also, SRNS has provided development and finalization of the SRPPF NEPA Strategy required for the CD-1 submittal more than nine months ahead of schedule.

Goal 2: Mission Execution: Global Nuclear Security (\$3,763,326 At-Risk Available)

Under this goal, SRNS earned a rating of Excellent and 95% of the award fee allocated to this goal. SRNS exceeded almost all of the Objectives and Key Outcomes, and met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. SRNS's accomplishments significantly outweigh very minor issues and no significant issues in performance exist.

SRNS provided excellent support to Defense Nuclear Nonproliferation Research and Development (R&D) mission work for a project designed to develop a capability to collect and analyze tritium in-situ. In addition, SRNS provided excellent work in projects supporting weaponization detection, nuclear material production R&D, and nuclear forensics.

SRNS demonstrated exceptional performance in completing extensive site activities significantly ahead of schedule expediting removal of court-ordered quantities of plutonium from the State of South Carolina. SRNS continued to evaluate and make progress to accelerate removal of additional quantities of plutonium from the state. SRNS hired and continued training of personnel required to increase downblend operational shifts; provided leadership for scope development to further development/testing of remotely monitored sealing array technology; provided support to NNSA that was critical

in obtaining new classification guidance; and obtained approval of the Nuclear Material Control and Accountability Strategy for plutonium downblending. SRNS continued to demonstrate progress on the Downblend Process Optimization Minor Construction project. This performance is highlighted by the use of the Optimization Glovebox Mockup to exercise multiple activities associated with the upcoming glovebox outage, facilitating discovery and resolution of potential issues prior to the outage. SRNS overcame challenges and successfully executed the award of a design-build subcontract for a new waste characterization and storage pad to prepare shipments to the Waste Isolation Pilot Plant. SRNS supported NNSA for multi-site, five-year execution program planning for the surplus plutonium disposition program, including development of the FY 2020 integrated program schedule.

SRNS overcame multiple technical and logistical challenges throughout the year and successfully achieved a FY 2019 key outcome to complete the defined NNSA lay-up scope of the HB-Line facility, including removal of legacy materials; achievement of an MC&A Category III status; flushing of all tanks and vessels to less than residual quantities; and removal of resin from the columns.

SRNS continued to provide support for the future disposition of the Japan Atomic Energy Agency Fast Critical Assembly fuel including supporting NEPA activities, conceptual design, and research and development activities for the selected disposition approach. SRNS responded to a NEPA comprehensive site-specific data call for the disposition of surplus plutonium. SRNS needs to continue emphasis on cost/schedule control to ensure that minor construction projects remain on track, improve spend forecasting accuracy across the program, and development of detailed, integrated Future Year Nuclear Security Plan schedules to ensure outyear program objectives are achieved.

SRNS successfully executed multiple activities in support of the Counterterrorism and Counterproliferation program by providing technical support while conducting: cross training with Aerial Measuring System (AMS) Region 5 and Customs and Border Patrol (CBP) personnel at Selfridge Air National Guard Base; proficiency flights for AMS Region 3 and CBP personnel; and proficiency flights for AMS support to South Carolina Law Enforcement Division during Operation Shrimp and Grits. SRNS also supported the Radiological Assistance Program in the Tactical Radiological/Nuclear Search Operations (TRNSO) training in Miami and Tampa, Florida; the NNSA response to the contamination incident at the University of Washington; the NNSA response to the radiological release at Piketon, Ohio; Triage training for the Florida Highway Patrol; and, three instances of Radiation Hazard Level II Training for the United States Coast Guard (USCG). SRNS provided necessary subject matter expertise to interagency partners during nuclear counterterrorism response exercises.

Goal 3: DOE and Strategic Partnership Projects Mission Objectives

This goal is not applicable to Savannah River.

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

All work under this Goal is covered in a separate Office of Environmental Management (EM) PEMP for the Savannah River National Laboratory and are discussed later in this report under SRNL Performance Goals 1.07 and 1.08.

Goal 5: Mission Enablement (\$5,644,988 At-Risk Available)

Under this goal, SRNS earned a rating of Good and 75% of the award fee allocated to this goal. SRNS exceeded some of the Objectives and Key Outcomes, and is generally meeting the overall cost, schedule, and technical performance requirements of the contract under this Goal. SRNS has continued to be successful in its performance under this contract as described below. SRNS's accomplishments slightly outweighed issues and no significant issues in performance exist. SRNS challenges include Small Projects execution, Incident of Security Concern, and identified opportunities for improvement in the Cybersecurity Program.

Small Project execution has shown little improvement from last year's performance. Projects outside the O2 monitor portfolio continued to be a challenge for SRNS. Inadequate project planning led to significant project delays and increased costs realized in FY19; FY19 planning for future projects continues to be inadequate. The G2 Recapitalization Projects did not meet spending expectation of 50% of authorized funding. SRNS continues to struggle to integrate project execution with facility operations. At the direction of NNSA, SRNS reviewed the execution process of projects by holding an improvement process team. Implementation from the RIE will take several months to show returns. Some project milestones are being met, however, several projects continue to have problems with cost, schedule, and execution issues. One Tritium project is a multi-million-dollar loss to the Government and will not have addressed the original project scope.

SRNS met cost and schedule performance for the Surplus Plutonium Disposition project during the year, achieved 30% design for CD-1, achieved 90% design for CD-3A, and assisted in the development of a tailoring strategy to shorten the project schedule by 12-24 months. The SRPPF project team met cost and schedule performance while making progress towards preparation of the CD-1 package during the year. SRNS met schedule performance when it assumed responsibility for the MOX Complex Area (MCA) effective March 29, 2019. SRNS was slow to initiate MOX property disposition activities; however, performance improved during the last months of the fiscal year. SRNS needs to focus on increasing the level of detail in cost/schedule documents and on integration and communication across SRNS functional areas and with the Project Management Office.

Construction completed three major glovebox activities without using open glovebox maintenance procedures. This resulted in a significant cost savings and allowed the facility to keep operating and minimized the potential for contamination and ventilation issues. SRNS executed disposition scope in 236-H and 238-H as planned. The decontamination

and decommissioning of 232-1H received the Award of Excellence from the NNSA Office of Safety, Infrastructure, and Operations (NA-50).

Conduct of Operations performance for FY19 has been cyclic in nature. SRTE alternates between periods of strong performance (e.g. multiple high-risk activities with no issues, furnace FE-200 extraction, etc.) to periods of weaknesses in disciplined operations (weld of empty container, TSR violation, Incident of Security Concern). It is incumbent upon SRNS to find consistency in its performance and stabilize its conduct of operations performance.

An Incident of Security Concern resulting from a Conduct of Operations issue led to significant corrective actions and expenditures of resources.

Overall SRNS Enterprise Cyber Security Operations (ECSO) and Tritium Process Control provided an effective and efficient Information Technology (IT)/cyber security program and continued performance in the areas of network, storage, and Automated Reservoir Management System (ARMS) II support. There were challenges related to the conduct and performance of security related issues regarding implementation of the Cybersecurity Program. Comprehensive performance of Security Test and Evaluations were not performed resulting in incomplete and inadequate documentation of security activities. Quality issues resulted in six certification and accreditation packages being returned for rework. SRNS management has taken a hands-on approach to address the issues and develop a path forward.

SRTE Engineering facilitated repairs to the TEF furnace thermocouples (TC) after a sheath weld failed enabling TC replacement in time to support the first extraction of the fiscal year. Engineering supported the EA-31 visit in late February to help come to resolution on most of the comments and questions under discussion for the MACCS2 upgrade. The depth of knowledge of the system engineers involved with the meetings was key in this process.

SRTE Engineering did not properly evaluate the impact to equipment (b)(7)(F)

[REDACTED]

The HAOM cold weather procedure proved ineffective in protecting addition side cooling coils when drained due to a steam leak. All six cooling coils ruptured because of residual water freezing.

SRTE Quality met or exceeded most of the NNSA identified performance goals to include Corrective Action Timeliness, Self-Assessment Timeliness, Management Field Observation (MFO) Performance and Participation. SRTE has averaged 98% MFO participation, demonstrating management engagement with field operators. The SRTE Quality Team has placed significant focus on improving the effectiveness and efficiency of execution of the

CAS; improvement in performance and utilization of the CAS has been noted.

SRNS is making significant progress in the area of Safety Basis Management for the Tritium Facilities (TF). SRNS has resolved all comments the Safety Basis Review Team developed against the combined Tritium Extraction Facility and Tritium Facility Documented Safety Analysis (DSA) and Technical Safety Requirements (TSR). SRNS re-submitted the combined DSA and TSR to SRFO for approval in August 2019 and is currently advancing through the Department's approval process. The contractor approved DSA and TSR appears to contain the appropriate safety controls. The combined DSA and TSR emphasizes the use of engineering controls over administrative controls.

SRNS has already administratively reduced tritium quantities or Material at Risk (MAR) in each tritium facility upon realizing the new analysis supporting the combined DSA and TSR showed increased dose consequences. The new MAR limits will be institutionalized when the SRFO approves the combined DSA and TSR and SRNS implements the SRFO approved DSA and TSR.

The SRTE facilities maintenance program performed very well. Preventative Maintenance (PM) deferral rate, Corrective Maintenance (CM) backlogs and PM delinquency metrics all exceeded expectations throughout the FY. Several significant projects were supported and outages completed, including 750-Ton chiller overhaul and P-Evac Recovery Beds. The FY19-20 Maintenance Excellence plan and implementation schedule are approved. The plan includes initiatives and best practices identified by an international Maintenance Manager Working group.

SRTE's Worker Safety and Health program continued to perform well with only one Total Recordable Case (TRC) since November 2017 (categorized in August 2019). The Safety & Health organization adequately supported routine operations, facility outages, and project work. SRNS proactively implemented initiatives designed to improve safety in the workplace, at home, and personal health. They coordinated a successful Heart Attack and Stroke Prevention screening onsite that was available to all Site employees.

SRNS performance met expectations for the year for Safeguards, Security, and Emergency Management. SRNS continues Tritium Argus project activities; however, SRNS is behind schedule due to apparent technical issues. SRNS completed the Facility Exercise and achieved a fully trained and qualified cadre in the emergency response organization to staff the emergency operations center despite routine personnel turnover. Additionally, SRNS completed updating and validating Emergency Action Levels (EALs) for the Tritium Enterprise as required in Key Outcome 5.1 ahead of schedule and performed 100% validation of EALs, exceeding the 30% required by Key Outcome 5.1.

SRNS worked closely with the NNSA Transportation Safety Review Panel to address technical issues associated with the 9977 Type B package Safety Analysis Report for Packaging. SRNS implemented a unique solution to a challenging technical problem by designing a carrier assembly for the contents that provides additional spacing and improves criticality safety. Certification of the package, which was an NA-50 goal, was

completed approximately one month ahead of schedule.

SRTE continued working on actions associated with the three Rapid Improvement Events (RIEs) to improve Budget, Planning and Execution. SRTE successfully established a Baseline Change Proposal (BCP) process, aligning work scope with funding, and is working with SRFO to address areas for improvement identified during testing.

Goal 6: Mission Leadership (\$3,763,325 At-Risk Available)

Under this goal, SRNS earned a rating of Very Good and 85% of the award fee allocated to this goal. SRNS exceeded many of the Objectives, and is generally meeting the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. SRNS's accomplishments greatly outweigh issues and no significant issues in performance exist. SRNS has continued to be successful in its performance under this contract as described below. Issues that were identified during the year have been resolved and are no longer of concern.

There has been a significant increase in mission work for this contract in FY19. SRNS's leadership has worked diligently to meet the deadlines and provide support for MOX termination transition and planning for 50 pits per year mission at Savannah River. When given the task to take over the terminated MOX project within 6 months, SRNS put together a leadership team with extensive experience in SRS operations, engineering, maintenance, quality, and safety. Turnover of the MOX Complex Area required working with MOX Services to accept the MOX buildings and equipment, as well as identify any gaps in contractual requirements for safety and security. The SRNS team successfully accepted the MOX Complex Area within the 6-month allotted timeframe. SRNS's SRPPF leadership has provided excellent direction and guidance to the SRPPF Project Team during the performance period. Specifically, they established an innovative and experienced management team that is making progress towards accomplishing the established milestones and deliverables required to support Conceptual Design-1. All Plutonium Sustainment FY19 Implementation Plan deliverables have been submitted to SRFO on or ahead of schedule as required by the Work Authorization.

SRNS has not demonstrated efficient, effective management of small projects. Effort was expended to create schedules; however, the schedules were not being met. The scope of small projects is not controlled, and scope growth is excessive. While project execution in the operating facilities is challenging, better coordination and integration between executing organizations is required. Overall, the up-front planning and control of small projects is inadequate and must be improved. In response to these issues, SRNS conducted an RIE on small projects in May identifying multiple strategies for improving small project management. Progress in implementing these strategies is ongoing.

In the area of Conduct of Operations, SRNS leadership has attempted to be more proactive in stabilizing their performance trends by implementing Senior Supervisory Watch and

Con-Ops Coaching teams during periods of historic performance declines. Overall, this has been incrementally beneficial as Con-Ops related ORPS reportable events have declined. During the last quarter of FY2019, an uptick in Conduct of Operations related events was observed by SRNS and was quickly addressed by their leadership team through implementation of an operational pause and common cause analysis.

SRNS leadership did not provide NNSA notification of an Incident of Security Concern resulting from a Conduct of Operations issue for five calendar days after initial discovery.

SRNS leadership demonstrated its commitment to operational excellence and contractor assurance by 1) updating its 40-Year Strategic Roadmap for all NNSA missions at SRS; 2) reconciling the NNSA Production Roadmap with NA-143 Capital Acquisition Planning line item projects; 3) strengthening its leadership team and improving interaction with SRFO; and 4) with assistance from Honeywell, deploying Tiered Operating Performance System (TOPS) in Supply Chain Management. SRTE received the DP Award of Excellence for implementation of TOPS throughout SRTE.

In support of the increased Tritium mission FY20 - 24, SRTE properly utilized the CAS and created a team to manage efforts supporting the increased production requirements. This team met twice a week and evolved to relay progress in key areas of plant preparation, people preparation, and performance improvement. This resulted in reduced mission risk, a properly staffed and qualified workforce, and improved efficiency. As a result of these efforts, SRTE reduced the qualification time for Operators and managed the corrective maintenance backlog below goal for 17 consecutive months.

SRTE continues to focus on maintenance program improvements and partner with SRFO to review maintenance execution and work planning and control performance. SRTE and SRFO continue to use a new metrics portfolio and assessment results to analyze execution and implement corrective actions.

SRNL Performance Goal 1.07: NNSA Defense Programs (\$801,019 At-Risk Available)

Under this goal, SRNS earned a rating of Excellent and 95% of the award fee allocated to this goal. SRNS exceeded almost all of the Objectives and Key Outcomes, and is generally meeting the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. The contractor has continued to be successful in its performance under this contract as described below. Issues that were identified during the year have been resolved and are no longer of concern.

SRNL continues to support the Defense Programs mission objectives. SRNL identified impacts to operations for At-Risk Materials for the long-term risk mitigation strategy. SRNL procured the required equipment and standard gas mixtures then began lab work to develop Gas Chromatography as a rapid gas analysis diagnostic for reservoir function tests to increase efficiency. SRNL supported Reservoir Surveillance Operations (RSO) by

troubleshooting and replacing a malfunctioning computer associated with Mass Spectroscopy, minimizing schedule impact. The Tritium Strategic Leadership Council approved the Tritium Facilities hydride technology replacement strategy which will incorporate technology improvements for isotope separation, purification, and storage processes. SRNL developed a revised unloading methodology for 4U Acorn reservoirs and supervised successful completion of unloading in support of LANL. Additionally, SRNL completed hydroburst testing on the first 3X reservoir. The Design Agency was present and pleased with the results.

SRNL continues to support science, technology, and engineering activities to advance knowledge in tritium related technologies. SRNL sampling of titanium loaded test objects is on schedule. SRNL is working with a vendor to accelerate fabrication of the Hydrogen Processing Demonstration System glovebox and working with Aiken County to modify the Hydrogen Research and Technology Lab (HRTL) facilities to support of the Tritium Gas Processing Research and Development transition plan. SRNL prepared Heat Affected Zone samples, charged tritium, and repaired damaged equipment for testing early age samples of tritium to document the results and conclusions to provide timely warning of aging phenomena that threaten nuclear deterrent effectiveness. All Plant Directed Research and Development (PDRD) activities are meeting objectives.

SRNL has met expectations in demonstrating leadership. SRNL submitted a Tritium Gas Processing R&D plan and jointly prepared a one-page summary of Tritium R&D requirements with SRTE which provides a quick reference linking tritium mission requirements to R&D requirements. SRNL participated in several meetings focused on Defense Programs activities including a Defense Programs Science Council meeting, coordinating the quarterly Tritium Enterprise Strategy Group meeting, and hosting the Annual GTS Component Evaluation Program Planning Committee and GTS Surveillance review meetings.

SRNL Performance Goal 1.08: Nonproliferation (\$1,179,028 At-Risk Available)

Under this goal, SRNS earned a rating of Excellent and 95% of the award fee allocated to this goal. SRNS exceeded almost all of the Objectives and Key Outcomes, and is generally meeting the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate. The contractor has continued to be successful in its performance under this contract as described below. Issues that were identified during the year have been resolved and are no longer of concern.

SRNL provided very good support managing the Cross Cutting (CC) pillar responsibilities of the U.S. High Performance Research Reactor (USHPRR) Project. SRNL staff continued to make positive contributions toward cross-cutting issues in the USHPRR project, such as evaluating scrap recovery technologies, material shipment planning, and leading independent technical reviews of the Fuel Fabrication Pillar.

SRNL provided important technical support for the development of domestic Mo-99

production capabilities making progress in conducting its valve reliability test program, pump component development, and safety basis testing.

SRNL provided excellent support for the upcoming removal of highly enriched uranium (HEU) from the Yayoi Research Reactor and multiple U.S. origin nuclear removals. SRNL provided excellent support to the multi-year effort to identify the current locations, forms, and amounts of separated plutonium remaining overseas. SRNL also continued to provide expertise in nuclear material removal campaigns to support technical discussions with the International Atomic Energy Agency (IAEA) and partner countries on their current material inventories. SRNL provided exceptional support to the Emerging Threats Program including completion of the acquisition process of Mobile Plutonium Facility Lite and executing Exercise Southern Osprey while continuing to maintain a strict readiness posture.

SRNL began full-scale execution of the Mobile Melt Consolidate project by recruiting critical team members for the key project activities; advancing conceptual system design in support of procurement specification development; beginning safety analysis and procedure development; and beginning R&D testing, validation, and optimization activities.

SRNL provided important contributions to projects within the Office of Nuclear Verification's Warhead Verification Program, including the initiation and leadership of a U.S.-UK technical working group to investigate chain of custody technologies and procedures for potential future arms control monitoring and verification initiatives.

SRNL supported the Plutonium Production Reactor Agreement (PPRA), by providing experts for a monitoring visit to Russia, the February 2019 Joint Implementation and Compliance Commission (JICC) meeting, and hosting a Russian monitoring visit.

SRNL provided high quality input to the development of the Plutonium Verification Team training and exercises for FY19 and beyond and exercised quality leadership as a Plutonium Verification Team Co-lead.

SRNL provided high quality support to the Graphite Isotope Ratio Method (GIRM) Steering Committee, reviewing data from the FY18 Qualification Exercise, participating in the FY19 Program Review, and updating program direction documentation.

SRNL provided high quality input to new environmental monitoring studies for the Office of International Nuclear Safeguards Technology Development program.