National Nuclear Security Administration

Triad National Security, LLC

Performance Evaluation Report

NNSA Los Alamos Field Office

Evaluation Period:
October 1, 2022, through
September 30, 2023

December 15, 2023

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Executive Summary

This PER provides the NNSA assessment of performing entity, Triad National Security, LLC (Triad), performance of the contract requirements for the period of October 1, 2022, through September 30, 2023, as evaluated against the Goals defined in the Performance Evaluation and Measurement Plan (PEMP).

Pursuant to the terms and conditions of the Contract, the PEMP sets forth the criteria by which NNSA evaluates Triad's performance, as required by FAR Part 16.4, which outlines expectations for administering award-fee type incentive contracts. This is the type of contract in place between NNSA and its M&O partners. A key requirement of FAR Part 16 is to establish a plan that identifies award-fee evaluation criteria and "how they are linked to acquisition objectives which shall be defined in terms of contract cost, schedule, and technical performance."

In accordance with the regulation, this PER assesses Triad's performance against the PEMP and provides the basis for determining the amount of award fee earned by Triad. NNSA considered input from NNSA Program and Functional Offices both at Headquarters and in the field.

Triad earned an overall rating of Very Good and 89 percent award fee during this performance period. Triad earned an Excellent rating for Goals 1 and 3 and Very Good for Goals 2, 4, and 5.

Key Accomplishments

Triad provided support for stockpile modernization, stockpile system capability improvements, and stockpile sustainment. This includes several Life Extension Programs (LEPs), limited life component exchanges, stockpile surveillance, and annual assessment activities. Triad exceeded commitments in surveillance Pit disassembly by proactively synchronizing short-term equipment and facility availability opportunities with higher priority Pit Production scope. These activities were underpinned by strong science and an aggressive experimental pace with more than 1,000 experiments focused on informing stockpile assessments, stewardship, and production. These experiments include large collaborations throughout the nuclear enterprise.

Triad implemented the execution strategy to (b)(7)(E), (b)(7)(F) This approach provided flexibility in work planning, control, and execution under the plutonium facility dynamic work environment and leveraged limited resources to mitigate risks. Triad implemented an Operations Integration Center (OIC) to manage work under changing facility conditions and evolving program execution needs. (b)(7)(E), (b)(7)(F)

Triad actively promulgated messaging of operational discipline philosophies and shared lessons learned amongst several facilities to improve work execution and improve consistency in expectations of staff. Cross-organizational experience was shared by subject matter expert exchanges from better-performing organizations with those that needed improvement.

Workshops were held to share lessons learned and expectations with the first line workers and first line managers. First line supervisor workloads were modified to allow more time spent supervising work in the facilities and helping staff plan and prepare for work evolutions.

Key Issues

Although Triad made progress in instilling a mindset that focuses on consistent production operations (b)(7)(E), (b)(7)(F) . Lack of both integration and a shared sense of urgency among the supporting functions delayed recovery for several events. (b)(7)(E), (b)(7)(F)

Triad did not properly manage work execution and subcontractor performance in several areas. As a result, several subprojects expended the allocated fiscal year funding prior to completing project scope of work, requiring several subprojects to be paused in order to determine new paths forward, thereby negatively impacting facility upgrade schedules and program execution needs. Triad increased the total number of craft workers and Radiological Control Technicians (RCTs) at the institutional level, but adequately trained, qualified, and experienced resources are not yet meeting work execution demands resulting in schedule slippage and substantial cost overruns across numerous projects. Overall, the amount of funding expended across several projects was not commensurate with the actual work completed.

Triad's operational discipline trended negatively resulting in several noteworthy and severe events during the performance period. Several hazardous energy events occurred this period resulting from issues with work being performed outside the planned scope or not complying with procedures for the work. These included out-of-scope electrical work, not following electrical safety controls, and not using the proper equipment for large item moves resulting in minor injuries that had the potential to be serious. There were also unintended radiation exposures associated with not adhering to procedures, improper surveys, or improper material movements and storage.

Goal 1: Mission Execution: Nuclear Weapons
Triad Amount of At-Risk Fee Allocation: $10,898,532

Under this goal, Triad earned a rating of Excellent, and 91 percent of the award fee allocated to this goal. Triad exceeded almost all Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

Accomplishments

Triad provided exemplary Design Agency (DA) support for stockpile modernization, including the B61-12 LEP, the W88 Alteration (ALT) 370 Program, the W93/Mk7 Program, (b)(7)(E), (b)(7)(F) . Triad also provided solid support for the W80-4 LEP

and the W87-1 Modification Program through independent peer review and production support.

Triad made significant contributions to stockpile system capability improvements through design and development.

Triad provided exemplary DA support for stockpile sustainment, including support for limited life component exchanges, surveillance, issue resolution, modeling, experiments, and annual assessment activities.

Triad exceeded the Production Agency's Level 2 Milestone commitments in surveillance Pit disassembly by proactively coordinating short-term equipment and facility availability opportunities with higher priority Pit Production scope.

Triad exceeded the expected number of pit builds in FY 2023 (b)(7)(E), (b)(7)(F) Triad is aggressively focusing scientific and engineering resources to solve production problems and to adapt to dynamically changing funding constraints. Triad demonstrated leadership in the resolution of technical challenges.

Triad advanced project planning, execution, and teaming thereby cultivating continuous improvement across numerous projects and operations, leveraging laboratory-wide involvement through the strategy. This execution strategy resulted in significant progress to integrate equipment installation schedules and meet numerous major equipment milestones. Triad strengthened integration efforts, managed risk, and increased work execution, as demonstrated by the number of gloveboxes (GBs) processed and removed from a production facility: several GBs disconnected and removed with additional gloveboxes disconnected and prepared for removal. This is an improvement compared to the GBs removed in FY 2022. The strategy was adjusted based on lessons learned resulting in work efficiencies during the second Campaign in the strategy.

Triad implemented an OIC to provide centralized integration of equipment installation, facility upgrades and modifications, maintenance work, and program activities. The OIC ensured disciplined work planning, control, execution, and resource allocation which directly contributed to the success of the strategy. The OIC applied lessons learned from Campaign 1 to Campaign 2 which improved completion of several complex work activities.

Triad maintained an aggressive experimental pace with more than 1,000 experiments in FY 2023, focused on informing stockpile assessments, stewardship, and production. These experiments include the Tier Threat Modeling Archive Validation, Stockpile Responsiveness Program, collaboration with Sandia National Laboratories on aging experiments on the Z machine, foundry process optimization and preparation for the implementation of Plutonium at Proton Radiography Facility. Triad also performed essential and complex analyses of record-setting National Ignition Facility experiments and programs and provided continuing support for on-going National Nuclear Security Site subcritical experiments operations and capability enhancements.

Triad made substantial progress in development and qualification of new explosive formulations (b)(7)(E), (b)(7)(F)

Triad delivered and fully installed the Crossroads supercomputer system, and it is available for use by Los Alamos, Sandia, and Livermore National Laboratories. Triad continued to participate in Center of Excellence activities for El Capitan at Lawrence Livermore National Laboratory and Vanguard 2 at Sandia National Laboratories.

Issues

Despite significant improvements during FY 2023 in conduct of operations, (b)(7)(E), (b)(7)(F) non-nuclear component production remains behind baseline (b)(7)(E), (b)(7)(F) Triad actively engaged with stakeholders on these issues, and these delays have had no significant effect on next level of assembly needs.

While the strategy is an improvement, Triad continued to experience delays to work execution schedules due to operational mishaps, delays in recovering from events, and inadequate allocation of resources to execute equipment installations. For example, work planning and control issues resulted in an inadvertent activation of the HEPA filter deluge system.

Triad planning for out-year infrastructure and production efforts did not meet program planning needs to (b)(7)(E), (b)(7)(F) .

Goal 2: Mission Execution: Global Nuclear Security
Triad Amount of At-Risk Fee Allocation: $2,724,633

Under this goal, Triad earned a rating of Very Good, and 90 percent of the award fee allocated to this goal. Triad exceeded many Objectives and Key Outcomes, and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

Accomplishments

Triad's Off-Site Source Recovery Program recovered numerous High-Activity Beta-Gamma (HABG) devices for the Cesium Irradiator Replacement Project, 12 additional domestic HABG devices, and hundreds of transuranic sources in FY 2023, exceeding the FY 2023 program metrics in support of NNSA's Office of Radiological Security. Triad successfully advanced global, multi-agency efforts in peer-to-peer activities on counter nuclear smuggling and nuclear forensics.

Triad continued to develop the scientific understanding needed to address key challenges in confidently detecting and assessing underground nuclear tests. Triad provided the large conventional High Explosive sources for PE1 at the Nevada National Security Site (NNSS) and successfully carried out emplacement in the shot chamber. Triad supported PE1 tunnel containment activities and diagnostic preparations. In support of research and development

(R&D) for detection and characterization of a weapons development program, Triad led the BB-1 measurement campaign at the developing Signatures Exploitation Testbed at NNSS, as well as vetted and purchased much of the equipment that will be used in future measurement campaigns. In support of the Defense Nuclear Nonproliferation (DNN) R&D's proliferation detection program, Triad provided leadership during a two-week risk-reduction field campaign. Triad led planning for a four-week spring campaign and provided leadership and several technical teams. Triad led the multi-Lab DNN R&D Persistent DyNAMICS venture, developing improved methods for remote detection of nuclear proliferation activities. The project involved deployment of sensors and computing resources from different national laboratories to be operated remotely in an integrated manner.

Triad continued to support NNSA's efforts in reactor conversion work on casting material and examining fundamental properties for research reactors and Uranium-Molybdenum based fuels. The Laboratory performed analysis of disks fabricated for efforts to support a private company in its efforts to open a new facility for Molybedenum-99 using this technology. In support of NNSA's Mobile Plutonium Facility Program, Triad successfully hosted the multi-lab Sputnik exercise at Los Alamos in March 2023. This exercise demonstrated capabilities of the Mobile Plutonium Facility for retrieving, safety characterizing, and packaging materials for shipment from multiple locations within a country.

Triad hosted several Non-destructive Assay training classes for bilateral and multilateral partners in collaboration with NNSA's International Safeguards Engagement Program (INSEP), U.S. Department of State Program of Technical Assistance to International Safeguards, the International Atomic Energy Agency, and other stakeholders. Triad held the Advanced Plutonium Verification Techniques course in February 2023 and the NDA Fundamentals course in July 2023 for the IAEA inspectors, as well as three INSEP training courses for bilateral partners from over 30 countries.

Triad effectively supported the Nuclear Emergency Support Team's (NEST) response to (b)(7)(E), (b)(7)(F)

Triad produced, packaged, and performed final measurements of plutonium oxide in support of the Surplus Plutonium Disposition Program. Although Triad did not meet the annual production target, they took several proactive measures to address the issues that (b)(7)(E), (b)(7)(F)

Triad supported operations of the current constellation of satellite borne U.S. Nuclear Detonation Detection System sensing instruments and ground systems. This included (b)(7)(E), (b)(7)(F) technology demonstration experiment which conducted successful space/ground operations throughout FY 2023. This will continue into FY 2024. (b)(7)(E), (b)(7)(F)

(b)(7)(E), (b)(7)(F)

Triad overcame coordination and communication challenges across various organizations for a planned shipment of materials of interest in support of the Nuclear Threat Science program, which resulted in the granting of an Authority to Ship. Triad prepared and received approval for Proton Radiography Facility (pRAD) experimental work planned for FY 2024 execution in support of characterizing unique material compositions.

Issues

Triad produced and completed packaging and final measurement of plutonium oxide but did not meet the finished oxide production goal for FY 2023.

Triad nuclear forensics program continued positive progress to address the National Nuclear Material Archive Program material management issues and resulting delays associated with inaccurate historical material records.

Goal 3: Mission Innovation: Advancing Science and Technology
Triad Amount of At-Risk Fee Allocation: $2,724,633

Under this goal, Triad earned a rating of Excellent, and 100 percent of the award fee allocated to this goal. Triad exceeded almost all Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

Accomplishments

Triad's research strategy continued to successfully address national security challenges and priorities, optimizing strategic investment and programmatic agility in response to emerging and evolving Department of Energy (DOE)/NNSA priorities. Triad achieved noteworthy success efficiently, effectively, and compliantly managing the 19 percent increased FY 2023 Lab Directed Research and Development budget.

Triad successfully executed an extensive portfolio of highly beneficial projects. Triad effectively leveraged and extended the Laboratory's Science Technology and Engineering expertise and capabilities. Strategic partnerships with the National Aeronautics and Space Administration (NASA) yielded results related to the operation of the Chemistry and Camera Complex, SuperCam, and Scanning Habitable Environments with Raman and Luminescence for Organics and Chemicals instruments on Mars, yielding three prestigious NASA Group Achievement Awards. Triad provided exceptional support to the Interstellar Mapping and Acceleration Probe satellite mission and the Nano-Satellite Atmosphere Chemistry Hyperspectral Observation System project and was named one of the leads to implement explosive threat models into a unified framework within Department of Homeland Security. Triad established the Probabilistic Analysis for National Threats Hazards and Risks program.

Triad won 9 awards in the International R&D 100 Competition demonstrating transformative, innovative, and leading-edge advancements in the frontiers of science. Triad became the first user group to perform X-ray scattering experiments on plutonium allotropes at Brookhaven National Laboratory's beamline, important to Los Alamos National Laboratory (LANL) and DOE/NNSA mission priorities.

Triad enhanced technical workforce competencies and foundational programs, with most notably, the exceptional achievement of four Los Alamos scientists winning DOE Early Career Research Awards for scientific achievements noted in national security, chemistry, fuel cells, and optoelectronics. Numerous other scientists received national and international awards/recognition. Triad focused on staff quality and pipeline capacity and retained momentum on execution of advanced degree programs for LANL employees.

Triad achieved early experimental results that powerfully demonstrated the capability of accelerator-based dark matter search which will have a profound impact on the understanding of the Standard Model of particle physics. Of significant current relevance, Triad is applying machine-learning algorithms to subsurface imaging that will impact a variety of applications, including energy exploration, carbon capture and sequestration, and estimating pathways of subsurface contaminant transport.

Triad achieved unprecedented strategic new starts, demonstrating responsiveness and successful utilization of core capabilities in support of national security mission priorities. Exceptional performance was achieved in advanced predictive modeling capabilities and quantum science, as well as in other strategically significant and high-priority items in support of the climate and clean energy objectives.

Goal 4: Mission Enablement
Triad Amount of At-Risk Fee Allocation: $6,811,583

Under this goal, Triad earned a rating of Very Good, and 82 percent of the award fee allocated to this goal. Triad exceeded many Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

Accomplishments

Triad improved workplace safety and health with initiatives such as the slip simulator and vaccine drives, and through development of the LANL Manmade Beryllium Prediction Tool.

Triad increased responsiveness by forming a collaborative working group to address unwanted fire alarms and began process improvements for fire system impairments. Triad updated Fire Hazards Analyses and conducted Fire Protection Assessments as scheduled; continued Radiological Laboratory Utility Office Building fire barrier corrective actions; and managed fire protection deficiencies using Safety Analytics, Forecasting, and Evaluation Reporting.

Triad's Radiation Protection Program provided response support for special contamination control and bioassay requests related to international NNSA non-proliferation activities. Triad worked with the vendor to develop updated software to reduce false Continuous Air Monitor alarms throughout the complex. The Environmental Health Physics division provided environmental analysis of radiological hazards to the public and environment in a timely manner with detailed, accurate, and transparent reporting.

Triad successfully executed commissioning of the Facility Control System (FCS) equipment and related software as scheduled.

Triad led the complex on multiple initiatives such as Net Zero Emission Planning, water management planning, and sulfur hexafluoride (SF6) reductions in electric power systems, while achieving milestones for DOE/NNSA sustainability goals. Triad also supported cultural resources work as part of the ongoing Electrical Power Capacity Upgrade project.

In FY 2023, Triad completed 69 out of 70 planned shipments to the Waste Isolation Pilot Project (WIPP), achieved record-low inventory of waste and implemented improvements to waste characterization/certification processes. Triad provided support to Environmental Management to resolve issues external to Triad that affect WIPP shipments.

Triad addressed operational upsets and compliance performance concerns and successfully implemented federal and state regulatory requirements and permits to enable operations. Thorough and high-quality analysis enabled Triad to prevail in regulatory processes for operating permits for open burn/open detonation policy analysis and seismic evaluation storage facility for hazardous waste, sitewide water balance assessment direction for regulatory compliance in water quality and ongoing Flanged Tritium Waste Containers technical support in the air quality program.

Triad implemented the execution strategy to focus on plutonium infrastructure enhancements required to meet target production rates in the most time efficient manner. This approach provided flexibility in work planning, control, and execution under the plutonium facility dynamic work environment and leveraged limited resources to mitigate risks. Triad implemented an OIC to manage work under changing facility conditions and evolving program execution needs. Triad achieved positive improvement in performance as demonstrated by an increase in the number of gloveboxes removed as compared to FY 2022. While Campaign 1 performance was not at the expected level, Triad leveraged lessons learned to improve Campaign 2 execution.

Triad made notable improvements regarding programmatic maintenance visibility and the coordination of efforts to improve programmatic maintenance work to meet LANL's P950, Conduct of Maintenance, requirements. Triad made dedicated improvements to programmatic maintenance issues, management responsibilities, and the coordination of issue closure by adding resources to address and close identified issues affecting program implementation.

Triad made Nuclear Safety Program enhancements to support the growing weapons mission such as transitioning a production facility to a Hazard Category 3 Nuclear Facility and completing

several key safety basis items to support the Los Alamos Plutonium Pit Production Project (LAP4).

Triad executed the Transuranic Liquid Waste project on schedule with mass excavation, precast panels, and roofing erection being completed ahead of schedule. Triad started interior finishes ahead of schedule and successfully installed electrical duct bank and fire lines while maintaining emergency access.

Triad supported site construction of the New Mexico 4/Jemez Intersection Project and conducted outreach to inform the affected community of traffic impacts. Triad improved project cost and schedule performances on the 29 projects greater than $1 million. Current Estimate at Completion forecast remains under the Request for Project Authorization for the portfolio.

Triad skillfully executed FY 2023 Facility Information Management System validation and accelerated efforts to close out long-standing issues and add all real property assets to the databases.

Triad excelled in the management of security operations while pursuing opportunities for organizational and enterprise improvements. DOE recognized Triad's classification training program as a best practice. Triad made progress with improved booking material holdup measurements and transitioned to more effective physical inventory timeframes for Pit Production material balance areas. Triad's implementation of Process Monitoring has driven improved integration between organizations, laying the foundation for sustainable and repeatable processes.

Triad delivered efficient, effective, responsible, and transparent financial management operations and systems, to ensure mission work was not at risk. Triad drove compliance and controls over financial reporting, and proactively collaborated and engaged with NNSA to address ongoing and emerging requirements (such as Strategic Partnership Program funding and carryover).

Triad effectively engaged across a number of legal areas (e.g., COVID-19 employment litigation, streamlining procurement execution, several high-profile environmental compliance matters). Triad successfully transitioned counsel leadership. Freedom of Information Act matters are addressed effectively but face a growing number of requests.

(b)(7)(E), (b)(7)(F)

Triad's High Performance Computing program was recognized by DOE for its maturity and management. Triad also completed the federation of a collaboration tool (b)(7)(E), (b)(7)(F) ahead of schedule.

Triad provided an effective and responsive Emergency Management Program in support of the DOE/NNSA Emergency Management Enterprise. Triad maintained tactical, strategic, and operational site programs that included timely response and notifications, accomplished through a system of planning, training, response, evaluation that included excellent relationships with stakeholders achieved through outreach, education, and collaboration.

Triad used its Human Resource Transformation Project to transform service delivery and improved operational excellence in response to employee feedback and demands of a growing laboratory.

Triad exceeded all but one FY 2023 small business goal (Historically Underutilized Business Zones). Triad initiated Enhanced Mission Delivery Initiative 9 recommendation implementation, improved compliance reviews, and began finalizing policies and procedures to streamline the procurement process. Triad submitted high-quality procurement packages for subcontract consent with no major findings and resulted in timely NNSA approval.

Triad successfully achieved Critical Decision (CD)-1 approval on the Electrical Power Capacity Upgrade project, CD-2/3 approval for (b)(7)(E), (b)(7)(F) milestone ahead of schedule.

Triad was under budget (Cost Performance Index 1.11) and on schedule (Schedule Performance Index 0.95) for the Advanced Sources and Detectors project. Triad contributed to the CD-2/3 approval and submitted the baseline schedule into the Project Assessment and Reporting System. Triad management worked aggressively to complete the final drawings for the Accelerator and Downstream Transport by the FY 2023 deadline. Triad worked with Sandia National Laboratories to finalize the digitizer procurement resulting in considerable savings.

Triad completed the Vault Upgrades project in August. Triad continued to work on a Baseline Change Proposal for the Replacement of DMO #2 and the Inline Storage Glovebox Seismic Upgrade projects, with completion dates scheduled for FY 2024.

Issues

Triad increased its production facility construction, maintenance, and program activity levels in pursuit of pit production milestones and identified several processes that needed improvement to provide for the safety of personnel. However, despite identifying needed improvements, Triad did not pursue safety related process improvements (b)(7)(E), (b)(7)(F) .

Triad's efforts to develop a more robust Work Planning and Controls (WPC) tool were insufficient to prevent multiple hazardous energy control-related abnormal events resulting in potential exposures. These events included: hazardous energy controls not followed, out-of-scope electrical work, prescribed Lock-Out-Tag-Out controls not observed, and multiple Occurrence Reporting and Processing System reportable events for failure to follow prescribed hazardous energy control processes, crane and electrical work performed without requisite training or qualifications. Other incidents lacking WPC involved improper penetration process execution, and unanticipated beryllium exposures. Inconsistent implementation of Integrated Safety Management resulted in preventable events (e.g., fires due to metal shavings and pyrophoric reactions, non-compliant material moves caused over mass events, injuries during mechanical material handling operations and chemical handling). The number and nature of safety incidents

increased in severity involving moderate to severe foot and hand injuries, fractured fingers, and severed fingertips.

Triad's issues with impacts to functionality of safety Structure, System, or Components and delayed resolutions persisted during FY 2023. Multiple facility control system degradations and a spurious alarm resulted in flooding of a ventilation plenum. The planned outage window for the FCS and Fire Suppression System was extended four days due to poor work planning and control of the fire riser installation. Fire alarm panel troubleshooting and repair for ground faults were slow. In addition, there were issues identified with lighting protection systems.

Triad staff suffered unintended radiation exposures from unapproved AmLi handling, improper Cf252 movement and storage, and improper instrumentation used for release surveys when returning from international non-proliferation activities. Personnel did not properly control radioactive material at the Los Alamos Neutron Science Center.

Triad did not fully analyze the impact nor develop adequate mitigation strategies needed to resolve Pre-Incident Planning challenges. Egress persisted at certain facilities, except for improved life safety at pRAD.

Triad had a successful year in the explosive safety program although several concerns were identified including shortcomings in configuration management of Explosives Safety Site Plans and hazardous material communication to respond to fires in explosive areas.

Triad was not able to demonstrate compliance with DOE Order 426.2 due to the FY 2023 DOE-Standard-1070-94 Training Staff Qualification Program assessment not being performed per the approved assessment plan and a change in the scope.

Triad did not adequately leverage available resources to rapidly solve problems resulting in Campaign 1 not being well integrated and remaining incomplete at the end of the fiscal year. The strategy had difficulty measuring success using normal project management metrics. For example, baseline schedule milestones for some Capital Line-Item projects were not met and the TPC of some projects are at risk. The amount of discrete work completed is not commensurate to the non-discrete level-of-effort expenditures. Even though Triad increased the total number of craft workers and RCTs at the institutional level, adequately trained, qualified, and experienced resources are not yet meeting work execution demands.

Triad did not properly manage work execution and subcontractor performance in several areas, resulting in several subprojects expending allocated fiscal year funding prior to completing project scope. Other operational performance issues caused work pauses impacting cost, facility upgrade schedules, and program execution due to determining new paths forward. (b)(7)(E), (b)(7)(F) Other subprojects have experienced similar pauses impacting facility upgrade schedules and program execution needs, and others are at risk.

Triad continued to experience issues maintaining cost and schedule across numerous projects. Project performance data incorporated in the G2 system was missing forecast data in work

breakdown structure elements, the majority of which were in the Operations of Facilities, Maintenance, and Safety and Environmental Operations programs.

Triad's Verification of Readiness to Startup or Restart of Nuclear Facilities process continued to experience extended delays to Readiness Activities at all levels due to facility and resource constraints, as well as a demonstrated inability to address prestart findings effectively and efficiently from previous reviews, as well as apply lessons learned from across the program.

Triad's quality of Nuclear Facility Documented Safety Analysis (DSA) and Technical Safety Requirements (TSR) revisions often resulted in multiple resubmittals to gain approval. Difficulties delivering major milestones to the update of the TA-55 DSA TSRs to meet DOE-STD-3009-2014 have extended the expected delivery by more than a year. Repeated extensions for Evaluation of the Safety of the Situation evaluations demonstrated issues not promptly being resolved.

Triad's management of (b)(7)(E), (b)(7)(F) to include the Protective Forces subcontract and Nuclear Material Control and Accountability led to (b)(7)(E), (b)(7)(F)

(b)(7)(E), (b)(7)(F)

Triad's lack of prioritization and vendor delays led to (b)(7)(E), (b)(7)(F) equipment projects being delayed in FY 2023.

Goal 5: Mission Leadership
Triad Amount of At-Risk Fee Allocation: $4,086,950

Under this goal, Triad earned a rating of Very Good, and 90 percent of the award fee allocated to this goal. Triad exceeded many Objectives and Key Outcomes and generally met the overall cost, schedule, and technical performance requirements of the contract under this Goal in the aggregate.

Accomplishments

Triad's FY 2023 Lab Agenda strongly aligned with NNSA strategic planning and was directly informed by the NNSA Strategic Vision. Triad engaged in and led some of the Enhanced Mission Delivery Initiative recommendations. Triad also integrated pit production, construction planning, and enterprise demands for gloveboxes.

Triad completed multiple Contractor Assurance System (CAS) process improvement efforts to enhance the user community's experience with managing issues and performing assurance data analytics. Triad streamlined two major risk management deliverables and three risk management processes, which further integrated risk with planning self-assessments and governing its System of Management Systems.

Triad continued to implement improvements to tracking and trending of environmental performance in CAS and integrating environmental trends into facility operational risk management in support of emergency management and environmental compliance. For example, the focused chemical cleanouts curtailed risk in operations by eliminating hazardous chemicals in storage across the site.

Triad led the establishment of the first cross-site weapon system requirements management system that is now being used.

Triad leadership supported acceleration of parts de-inventory/harvesting efforts, starting the project two years early, completing the first shipment and harvesting of initial parts.

Triad coordinated efforts with the Kansas City National Security Campus and Lawrence Livermore National Laboratory to (b)(7)(E), (b)(7)(F) This included partnering with the DA on design changes to enhance manufacturability and on engineering evaluations to ensure processes were implemented for consistent production. Triad also supported the Savannah River Site to support systems development of consistent and robust pit manufacturing processes.

Triad leadership implemented several projects to unlock latent capacity on site. A notable example was the OIC supporting plutonium facility work management to optimize resource utilization and accomplish both program and project work scope within the same operating envelope.

Triad significantly contributed to leveraging commercial industry and the defense industrial base through the Critical Supplier Program.

Triad made efforts to promulgate operational discipline philosophies and share lessons learned amongst several facilities to improve work execution and improve consistency in expectations of staff. First line supervisor workload was reevaluated to enable them to spend more time supervising work evolutions and helping staff plan and prepare for work evolutions.

Triad implemented several compensation, benefits and retention plan initiatives that resulted in historically high hiring and reduced attrition rates.

Issues

Triad was not transparent for Cyber and Information Technology Self-Assessments, which is inconsistent with the tenants of contractor assurance. There was a lack of timely notifications to

the Field Office in advance of assessment activities inhibiting effective federal oversight in this area.

Triad made progress instilling a mindset focused on consistent production operations (b)(7)(E), (b)(7)(F) Lack of integration and a shared sense of urgency among the supporting functions delayed recovery for several events. (b)(7)(E), (b)(7)(F)

Triad experienced issues with pre-job briefs, work planning, and adherence to procedures, which contributed to several operational events associated with high energy events and large item move mishaps. Subsequent improvements were reactions to the negative trend of events, and at least partially informed by federal feedback from operational oversight activities.

APPENDIX A: Acronyms and Definitions

Acronym	Definition
ALT	Alteration
AmLi	Americium Lithium
BB-1	Building Baseline
CAS	Contractor Assurance System
Cf252	Californium 252
DNN	Defense Nuclear Nonproliferation
DOE	Department of Energy
DA	Design Agency
DMO	Direct Metal Oxide
DSA	Documented Safety Analysis
FAR	Federal Acquisition Regulation
FCS	Facility Control System
FPU	First Production Unit
GBs	Gloveboxes
HABG	High-Activity Beta-Gamma
IAEA	International Atomic Energy Agency
INSEP	International Safeguards Engagement Program
LANL	Los Alamos National Laboratory
LAP4	Los Alamos Plutonium Pit Production Project
LEP	Life Extension Program
M&O	Management and Operating
NASA	National Aeronautics and Space Administration
NDA	Non Destructive Analysis
NEST	Nuclear Emergency Support Team
NNSA	National Nuclear Security Administration
NNSS	Nevada National Security Site
OIC	Operations Integration Center
PE1	Physics Experiment 1
PEMP	Performance Evaluation and Measurement Plan
PER	Performance Evaluation Report
pRAD	Proton Radiography Facility
R&D	Research and Development

RCT	Radiological Control Technicians
TA	Tech Area
TPC	Total Project Cost
Triad	Triad National Security, LLC
TSR	Technical Safety Requirements
WIPP	Waste Isolation Pilot Project
WPC	Work Planning and Controls