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CHAPTER I. Background, Objectives, and Requirements

1.0 THE NATIONAL NUCLEAR SECURITY ADMINISTRATION (NNSA) MISSION

NNSA is responsible for the management and security of the nation's nuclear weapons, nuclear nonproliferation, and naval reactor programs. It also responds to nuclear and radiological emergencies in the United States and abroad. Additionally, NNSA federal agents provide safe and secure transportation of nuclear weapons and components and special nuclear materials along with other missions supporting national security. NNSA was established by Congress per the NNSA Act (Title XXXII of the National Defense Authorization Act for Fiscal Year 2000, Public Law 106-65) as a semiautonomous element within Department of Energy (DOE).

2.0 MANAGEMENT & OPERATIONS

The NNSA's nuclear security enterprise spans eight sites, including three national laboratories, four plants, and the Nevada National Security Site (NNSS). Each site's technical expertise enables NNSA to accomplish its work across NNSA's four mission areas.

NNSA relies on Management and Operating (M&O) Contractors to manage day-to-day site operations of its laboratories, production plants, and other facilities in the National Security Enterprise (NSE) in compliance with legal requirements and DOE/NNSA policies. Los Alamos National Laboratory (LANL) (herein referred to as "LANL", "the Laboratory" is operated under an M&O contract, as defined in Federal Acquisition Regulation (FAR) 17.6). LANL is also a multi-program DOE/NNSA Federally Funded Research and Development Center (FFRDC), as defined in FAR 35.017, whose primary mission is to function as a nuclear weapons research, development, and engineering laboratory.

NNSA establishes the work to be accomplished by the Contractor and will provide program and performance direction regarding what NNSA wants in each of its programs. The Contractor is accountable for assuring safe, secure, effective, and efficient operations, and providing directed deliverables in accordance with the terms and conditions of this Contract.

NNSA's M&O Contractors implement NNSA's all-encompassing Stockpile Stewardship Program that includes operations associated with research, development, qualification, and certification efforts as well as surveillance, assessment, maintenance, refurbishment, manufacture, and dismantlement of the nuclear weapons stockpile. In addition, there is work managed by the Laboratory that is performed for other sponsors within the DOE, NNSA, Department of Defense (DoD), Department of Homeland Security, other government agencies, and private industry.

3.0 REQUIREMENTS

The Contractor shall manage, operate, protect, sustain, and enhance the Laboratory's ability to function as a NNSA Multi-Program Laboratory, while assuring accomplishment of the Laboratory's primary mission - strengthening the United States' security through development and application of world-class science and technology to enhance the nation's defense and to reduce the global threat from terrorism and weapons of mass destruction. The Contractor shall,

with the highest degree of vision, quality, integrity, efficiency, and technical excellence, maintain a strong, multi-disciplinary scientific and engineering capability and technical depth that is responsive to scientific issues of national importance in addition to national security responsibilities, including broadly based programs in such areas as the environment, national infrastructure, health, energy, economic and industrial competitiveness, and science education to achieve the mission. The scope of work of this Contract generally includes:

- Providing research and development and scientific capabilities that enable safe nuclear explosive operations;
- Assuring the safety, security, reliability, and performance of the national nuclear weapons stockpile pursuant to national security policy and Presidential and Congressional directives;
- Providing scientific and engineering capabilities that support assessment, dismantlement, manufacturing and refurbishment of the enduring stockpile at a number of sites;
- Manufacturing selected stockpile components, ranging from high explosive pellets to the primaries (pits), for use in the nuclear weapon stockpile;
- Ensuring the secure handling and safe disposition of plutonium, highly enriched uranium, and tritium;
- Helping to deter, detect, and respond to the proliferation of weapons of mass destruction;
- Conducting fundamental science research and nuclear energy development in support of other DOE programs;
- Contributing to civilian, Homeland Security, and industrial needs, and other defense activities by using the scientific and technical expertise that derives from carrying out the Laboratory mission;
- Advancing of science, mathematics, and engineering education;
- Performing technology transfer and strategic partnership programs including programs designed to enhance national competitiveness in the global economy;
- Managing and operating the Laboratory facilities and infrastructure in an efficient, cost effective, innovative manner;
- Remediating and restoring the Los Alamos National Laboratory site;
- Managing waste minimization, treatment, storage, and disposal of newly generated wastes; and
- Assisting the Nuclear Security Enterprise in waste stabilization, storage and disposition technologies.

Assigned missions and requirements are dynamic; therefore, this SOW is not intended to be all-inclusive or restrictive, but is intended to provide a broad framework and general scope of the work to be performed at the Laboratory. This SOW does not represent a commitment to, or imply funding for, specific projects or programs. NNSA projects and programs, or other work sponsors, will be authorized individually by NNSA in accordance with the terms and conditions of this Contract.

This Contract is for the management, operation, and staffing of LANL to accomplish the missions assigned by the NNSA to the Laboratory; to achieve Presidential and Congressional directives; to fully support the Nuclear Posture Review; to enhance and promote communication, cooperation, integration, and interdependency that will result in improvements in the performance of the NSE as a whole; to perform the Laboratory's role as a lead element for the

nuclear weapons program; and to provide cross-site coordination with NNSA's other NSE elements for program and project management. The Contractor shall integrate excellence in Laboratory operations, business operations, and laboratory management with the performance of world-class science and technology.

Work under this Contract shall be conducted in a manner that will protect the environment; assure the safety and health of employees and the public; safeguard classified information and hardware; and protect special nuclear material. In performing work under this Contract, the Contractor shall assure and maintain the following:

- (i) An effective and integrated quality assurance program;
- (ii) A certified earned value management system for program activities, projects, as applicable, and subcontractors to track progress and increase cost effectiveness of work activities;
- (iii) Integrated, resource-loaded plans and schedules using software that is compatible with NNSA and other NNSA Contractors to achieve program objectives, incorporating input from NNSA, DOE and stakeholders;
- (iv) Technical depth to manage activities and projects throughout the life cycle of a program;
- (v) Appropriate technologies to reduce costs and improve performance;
- (vi) A system of management and business internal controls to assure the safeguarding of government funds and assets; and
- (vii) Management, maintenance, and refurbishment of Government-owned facilities to accomplish assigned missions.

The Contractor shall engage in strategic and institutional planning necessary to ensure that the Contractor maintains a posture aimed at anticipating national needs and that is dedicated to providing practical solutions. The Contractor shall also study and explore innovative concepts to minimize or mitigate possible national security threats, current and future. The Contractor shall carry out these plans consistent with NNSA guidance and strategic planning material to assure uniformity with DOE and NNSA missions and goals.

The activities in the SOW are in support of scientific and technical programs sponsored by major NNSA and DOE organizations. Primary NNSA and DOE sponsors include:

- (i) Defense Programs
- (ii) Defense Nuclear Nonproliferation
- (iii) National Incident Response
- (iv) Safety, Infrastructure, and Operations
- (v) Defense Nuclear Security
- (vi) Environmental Management
- (vii) Science
- (viii) Nuclear Energy
- (ix) Energy Efficiency and Renewable Energy
- (x) Fossil Energy
- (xi) Counter-terrorism and Counter-proliferation

Additionally, the Contractor will pursue other DOE and non-DOE science and technology initiatives that enhance NNSA missions and utilize the Laboratory's core competencies in nuclear weapons science and technology, earth and environmental science, materials, plasmas and beams, pulsed power, complex experimentation and measurements, theory, modeling, high-performance computing, and analysis and assessment.

4.0 LOCATION OF PERFORMANCE

The following are the primary sites where work is performed.

4.1 Los Alamos National Laboratory, New Mexico (LANL/NM)

Located in Los Alamos, New Mexico, this site is a multi-program engineering and science laboratory supporting the nuclear weapons stockpile program, energy and environmental research, non-proliferation of weapons of mass destruction, developing technologies and strategies for responding to emerging threats, micro-and nano-technologies, and basic science and engineering research.

4.2 Other Locations

Work is also performed on a smaller scale at various secondary locations and is formally authorized under this contract.

CHAPTER II. Work Scope Structure

Below are three general Performance Group Activities critical to the Laboratory's management and performance of the corresponding programs, projects, and processes: Science and Technology, Laboratory Operations, and Laboratory Management.

1.0 SCIENCE & TECHNOLOGY

In support of major DOE/NNSA sponsor organizations, the Contractor shall serve as a national resource in science, technology, and engineering, focused on national security, energy, and the environment, with special responsibility for nuclear weapons stockpile maintenance and stewardship. The Contractor shall use multidisciplinary capabilities and apply expertise to conduct research within the capabilities and approved operational analyses for the Laboratory.

1.1 Stockpile Stewardship and Management

The Contractor shall support the NNSA to ensure the long-term safety, reliability, and security of the nation's nuclear weapons stockpile as detailed in the annual Stockpile Stewardship and Management Plan. The Contractor shall meet the near-term scientific and technical demands of the Laboratory's stockpile stewardship goals while strengthening its longer-term, technical, capability-based deterrent posture. The Contractor shall support the science-based Stockpile Stewardship Program that underpins the scientific and technical basis for all nuclear warheads in the United States stockpile. Under this Program, the

Contractor shall conduct the fundamental research, the development of physical models, the integration of these models into computer simulation codes, the experimental validation, and the engineering that are required to maintain the nuclear deterrent as modern, robust, flexible, resilient, ready, and appropriately tailored to deter the 21st century threats and reassure allies. The Contractor shall provide technical specifications, engineering drawings and releases that direct planned and corrective activities both by NNSA production activities and by the DoD depots that support warhead and bomb component weapon manufacturing, maintenance, assembly and surveillance operations. The Program relies on three interconnected areas of surveillance activity which examine and diagnose aging phenomena in stockpile weapons, assess physical observations by calculations and experiments to evaluate safety and performance, and develop responses to assessments to provide the basis for continued stockpile certification and reliability assurance. The Contractor shall also provide support in the development of an overall strategic plan and execute the plan as it pertains to the LANL.

1.1.1 Certification and Support of Stockpile

- (i) Conduct stockpile assessment of nuclear weapons components and the analysis of surveillance findings through the use of nuclear weapon simulation codes, computational resources, full-scale flight tests, and experiments;
- (ii) Laboratory Director's annual assessment of the stockpile;
- (iii) A nuclear weapons quality assurance and stockpile evaluation program to detect defects and determine their effect on safety, security and reliability of the stockpile, support joint DoD/NNSA weapons system testing, perform reliability assessments and calculations, prepare reliability reports for all Laboratory assigned nuclear weapons in the stockpile; and
- (iv) Continue technical support, and military liaison and training programs for the DoD in support of Laboratory assigned nuclear weapons in the stockpile.

1.1.2 Simulation Codes and Computational Resources

- (i) Develop high-performance computing and computational simulations to validate and certify the safety, reliability, and performance of the weapon system in the absence of nuclear testing;
- (ii) Support the design, development, and engineering stockpile life cycle acquisition phases with modeling and simulation activities;
- (iii) Perform core stockpile computing and participation in the Advanced Simulation and Computing (ASC) initiative to enable model and simulation based life cycle engineering; and

- (iv) Archiving of previously recorded nuclear weapons data for assessment of stockpile weapons systems and improving models and codes.

1.1.3 Surveillance and Surety

- (i) Conduct core stockpile surveillance on NNSA hardware to evaluate safety, security, and effectiveness of the stockpile. Surveillance shall be structured to detect defects and aging trends in order to determine their effect on safety, security, and reliability of the stockpile through assessments; calculations, laboratory testing, and full-scale flight tests;
- (ii) Support joint DoD/NNSA weapons system surveillance testing through planning, full-scale flight testing, and post data analysis;
- (iii) Establish technical requirements for disassembly and testing processes;
- (iv) Provide technical support in developing and implementing processes, procedures, tooling, and test systems to perform surveillance;
- (v) Develop and document specialized equipment and test systems for surveillance of components and systems;
- (vi) Participate in the Enhanced Surveillance program to develop capabilities to diagnose and predict age-related phenomena in the stockpile;
- (vii) Document stockpile surveillance results and analyses on hardware designed by NNSA for inclusion in the overall weapon system assessments;
- (viii) Participate in the review and approval of disassembly and inspection processes and services for components and systems;
- (ix) Provide formal requirements and approval for disassembly, inspection, and testing processes; and
- (x) Support for Nuclear Explosive Safety evaluations for the approval of nuclear explosive operations.

1.1.4 Scientific Capabilities, Experiments and Tests

- (i) Improve the scientific basis for stockpile assessment through a balanced experimental and theoretical approach that includes developing new scientific tools and capabilities that address fundamental questions relating to the stockpile;
- (ii) Support or conduct high hazard experiments at the Nevada National Security Site, consistent with U.S. policy, to improve knowledge of the properties of materials, components, and systems;
- (iii) Conduct experiments, including hydrodynamic tests, that provide non-nuclear testing capability to address the

- functionality and safety of the nuclear weapon primary and capability to study and understand high-energy density physics of nuclear devices;
- (iv) Maintain nuclear underground test readiness through the conduct of a robust experimental program
 - (v) Maintain a program to conduct laboratory and full-scale testing of nuclear weapons components and systems through the use of experiments and flight tests;
 - (vi) Maintain a capability to fabricate and test prototype components for design maturation of future designs and evaluation of current weapon systems; and
 - (vii) Maintain capabilities for qualifying systems and components to support assigned activities for current and future programs.

1.1.5 Production Support

The Contractor shall provide technical production support to the NNSA at nuclear weapon production plants for tasks related to nuclear and non-nuclear components and systems, modification and enhancement of non-nuclear component production hardware qualification program consistent with production assignments and production rates, support DoD deliverables, correct production issues, and process improvements for hardware production at risk. These tasks include:

- (i) Establish technical requirements for production, testing, and inspection processes;
- (ii) Participate in the review and approval of production and inspection processes and services for components and systems.
- (iii) Provide the requirements for, and documentation of, the formal approval of the production and inspection processes;
- (iv) Contribute to the development of training requirements;
- (v) Develop and document acceptance equipment and test systems for product acceptance of components and systems;
- (vi) Establish testing and acceptance criteria; participate in approval of test procedures and results;
- (vii) Provide expertise in specialized technologies to include components manufacturing and systems assembly, systems integration, transportation systems, information management, and development of specialized facility criteria;
- (viii) Provide technical support to develop and implement processes, procedures, tooling, and test systems to perform production;
- (ix) Conduct transportation technology development to ensure that base technology is available to support the design, test, fabrication, and certification of radioactive, energetic and hazardous material packaging for defense applications;
- (x) Provide safe storage, transportation of nuclear weapons and special materials, weapon design and performance information,

- and establishment of technical requirements for production processes;
- (xi) Providing development of specialized facility criteria; recommending and managing R&D and testing for emerging technologies;
 - (xii) Providing technical support and independent technical oversight for needed physical rearrangements;
 - (xiii) Provide weapon response for the hazard analysis and evaluation of changes in support of the operations at Pantex;
 - (xiv) Participate in the development of the Documented Safety Analysis to support safe operations at Pantex and Nevada;
 - (xv) Support for Nuclear Explosive Safety evaluations for the approval of nuclear explosive operations;
 - (xvi) Support NNSA initiatives for development and deployment of advanced design and manufacturing processes for weapon components;
 - (xvii) Evaluate weapon response to hazard analysis scenarios in support of the Seamless Safety for the 21st Century (SS-21) activity;
 - (xviii) Provide technical support in developing and implementing necessary tooling and procedures to perform production that meets SS-21 standards;
 - (xix) Support the implementation of steps that support the NNSA responsive infrastructure vision that supports the complex of the future; and
 - (xx) provide the necessary documentation for the items listed above to support nuclear weapons production.

1.1.6 Production and Manufacturing

- (i) Maintain manufacturing capability for plutonium-based pits at required capacities of various designs for the primary of nuclear weapons. This activity implements specialized manufacturing and testing techniques for this warhead component. The Contractor shall manufacture pits for the stockpile in quantities specified by NNSA. Further, the Contractor shall provide engineering testing and production process development guidance for plutonium-based pits to other contractors as directed by the Contracting Officer;
- (ii) Maintain and enhance Laboratory facilities to perform small quantity production of selected non-nuclear components and the manufacture of selected components and related items used in the Nuclear Weapons program, including associated product and process engineering;
- (iii) Develop specialized techniques and processes for manufacturing and testing warhead components including plutonium pits, detonators and high explosives, and other

- special materials that influence nuclear performance;
- (iv) Support production to ensure the safety, security, reliability and maintenance of the enduring stockpile;
- (v) Perform all life cycle management responsibilities in design, engineering development, component acceptance and stockpile certification to support weapon alterations, modifications, refurbishments and replacements.

1.1.7 Nuclear Materials Management

The Contractor shall conduct a Nuclear Materials and Stockpile Management Program that has four strategic thrusts: nuclear materials; manufacturing and surveillance; materials and process technologies; and stabilization technologies. The Program includes:

- (i) Ensuring, through a nuclear-materials-based approach, stockpile evaluation;
- (ii) Weapons dismantlement and component disassembly;
- (iii) Nuclear materials storage, processing, and disposition;
- (iv) Residue elimination, waste minimization, and environmental and mixed-waste management;
- (v) Test-component remanufacture;
- (vi) Materials characterization;
- (vii) Site cleanup and materials stabilization;
- (viii) Contamination control;
- (ix) Health and safety issues;
- (x) Managing and operating highly specialized facilities that are key to Laboratory efforts in this program; and,
- (xi) Providing support to DOE/NNSA for stabilizing nuclear materials and overseeing a core technology program that will improve the understanding of underlying material interactions.

1.1.8 Dismantlement

- (i) Provide expertise in weapons dismantlement and component disassembly including weapon component material characterization and material disposition processes;
- (ii) Contribute to the development of training requirements for weapon dismantlement and disposition;
- (iii) Provide technical support to develop and implement processes, procedures, tooling, and test systems to perform dismantlement;
- (iv) Provide technical assistance in material disposition analysis of the functionality of safety of disassembly techniques and tools;
- (v) Support prescriptions for material recovery and reuse;
- (vi) Participate in review and approval of production and inspection processes for dismantlement at NNSA plants; and

- (vii) Provide the requirements for formal approval of the disassembly or dismantlement processes.

1.1.9 Criticality Safety Analysis

The Contractor shall conduct experiments, training and analysis on criticality safety, materials detection and improvised nuclear devices in support of a broad range of national programs. The Contractor shall perform operations, unless otherwise directed by the Contracting Officer, in the National Criticality Experiments Research Center (NCERC) at the Device Assembly Facility located at the Nevada Test Site.

1.1.10 Inertial Confinement Fusion

The Contractor shall participate in the inertial confinement fusion program, in coordination with other NNSA laboratories that maintain United States leadership in high energy density physics. This includes achieving ignition and using ignition facilities to gather information relevant to stockpile stewardship. The program of ignition is a national effort that depends on cooperation and collaboration with multiple NNSA contractors and includes major experimental activities at the National Ignition Facility and other NNSA sites. As part of this effort, the contractor will participate as a member of a national team that supports all aspects of the national program; including target physics, target fabrication, diagnostics, experimental planning, and any other activities necessary to achieve the ignition program goals.

1.2 Defense Nuclear Nonproliferation

The Contractor shall develop and apply the science and technology, and perform appropriate related analytical tasks required to advance capabilities that inform policy and support negotiations of nuclear agreements, detect and monitor non-compliance with treaties, eliminate proliferation-sensitive materials, and limit or prevent the spread of materials, technology, and expertise related to nuclear and radiological weapons and programs, and detect, deter, prevent and respond to proliferation of weapons of mass destruction worldwide.

1.2.1 Global Threat Reduction Programs

The Contractor shall develop and apply the science and technology, perform appropriate related analytical tasks and provide necessary resources required to reduce inventories of weapons-useable nuclear materials and dangerous radiological materials, including: converting U.S. and foreign research reactors to the use of low enriched uranium fuel or other proliferation-resistant technologies; removing and/or consolidating Highly Enriched Uranium and other vulnerable nuclear materials to secure storage locations for disposition and down-blending; and securing, transporting, storing and/or positioning nuclear and radiological materials and components.

1.2.2 Office of Research and Development

The Contractor shall develop and apply the science and technology, and perform appropriate related analytical tasks required to develop advanced remote sensing, monitoring and assessment technologies to address the most challenging problems related to detection, location, and analysis of global proliferation of nuclear weapon technology, and the diversion of special nuclear materials. This includes detecting and identifying emanations, effluents, and other distinctive signatures of potential nuclear weapons research and development efforts.

1.2.3 Nuclear Risk Reduction

The Contractor shall develop and apply the science and technology, and perform appropriate related analytical tasks required to eliminate surplus inventories of weapons-useable materials, including materials from dismantled weapons and production reactors and facilities, to support verification of international agreements, and to strengthen foreign and international efforts to respond effectively to nuclear emergencies.

1.2.4 Nonproliferation and International Security

The Contractor shall develop and apply the science and technology, and perform appropriate related analytical tasks required to:

- (i) Support the application and strengthening of international nuclear safeguards;
- (ii) Support U.S. Government negotiations and policy analysis;
- (iii) Strengthen U.S. and foreign partner export control policy and system development;
- (iv) Enhance scientists engagement efforts around the world;
- (v) Improve workforce transition and scientist engagement efforts around the world;
- (vi) Improve regional and international security;
- (vii) Permit intelligence monitoring and arms control treaty verification;
- (viii) Strengthen global controls on nuclear materials and weapons;
- (ix) Protect nuclear materials from theft or diversion;
- (x) Assess foreign weapons of mass destruction programs and support interdiction activities; and
- (xi) Develop tools and techniques to encourage safeguards and security by design, including development of more 'safeguardable' fuel cycle technologies.

1.2.5 International Material Protection and Cooperation

The Contractor shall develop and apply the science and technology, and perform appropriate related analytical tasks required to secure nuclear weapons and materials

in Russia and other weapons states, including both military and civilian facilities, support the blend-down of excess weapons- useable Highly Enriched Uranium to Low Enriched Uranium, deploy radiation detection monitors at strategic border crossings and transit points, and to expand the capacity of other countries to properly secure their nuclear weapons and materials.

1.2.6 International Material Protection and Cooperation

Contractor shall develop and apply the science and technology, and perform appropriate related analytical tasks required to eliminate surplus plutonium and Highly Enriched Uranium.

1.2.7 Nonproliferation, National Security and Verification Technology

The Contractor shall conduct a nonproliferation, national security, treaty verification technology program, and dismantlement verification program; including the development of methods for detection/verification of underground nuclear testing and of undeclared enrichment and reprocessing activities. The Contractor shall perform R&D for nuclear security, nonproliferation of weapons of mass destruction (nuclear, chemical and biological, and of missile delivery systems), and treaty verification technologies; including application of remote sensing technology to the detection of nuclear explosions and other national security applications. Also perform and assist with the application of security technology to international nuclear materials and weapons protection.

In addition, the Contractor shall support the NNSA in nuclear counterterrorism response in the areas of containment, weapon expertise, weapons surety, environment, health and safety, and other areas requiring specialized training, expertise, planning and response to nuclear weapons.

1.3 Science Programs

1.3.1 Basic Science Programs

The Contractor shall conduct research in the areas of materials sciences, chemistry, and geosciences, providing knowledge essential to defense, energy efficiency, industrial competitiveness, engineering sciences, atomic physics, computational sciences, biological sciences, nano-science, and other areas of national interest, including scientifically tailored materials and mathematics, and advancing the state of science for the benefit of DOE/NNSA.

1.3.2 Biological and Environmental Research

The Contractor shall conduct research in structural biology, genomics, cellular response to low doses of radiation, climate change research, environmental remediation, advanced medical imaging, and other health and environmental sciences.

1.3.3 High Energy and Nuclear Physics

The Contractor shall conduct high energy and nuclear physics research involving experimental and theoretical programs in nuclear and particle physics.

1.3.4 Fusion Energy Sciences

The Contractor shall conduct fusion energy efforts aimed at modest scale experimental, theoretical, and technological studies to advance plasma science, fusion science, and fusion technology.

1.3.5 Computing, Modeling and Simulation Research

The Contractor shall maintain state of the art technologies and capabilities to support: high-performance computing, modeling, and simulation; communications; cyber-security; and information management. The Contractor shall participate in the Accelerated Strategic Computing Initiative, the Advanced Computational Technology Initiative, the Strategic Simulator Initiative, and other associated research on complex and large-scale national problems in computational science.

1.4 Energy Technology

The Contractor shall conduct research and studies to address national energy needs in fundamental areas including integrated chemical and materials processing, energy supply and the environment, and transportation and infrastructure.

1.4.1 High-Temperature Superconductivity

The Contractor shall develop practical high-temperature, high-current- density superconductors and form partnerships with U.S. industry to expedite the development of commercially feasible high-temperature superconductor technology.

1.4.2 Radioisotope Power System Program

The Contractor shall sustain the technical capabilities to process and encapsulate the isotope plutonium-238 into fuel forms that will be provided for use in the development and fabrication of radioisotope power systems that are delivered to other agencies for space exploration and national security missions.

1.4.3 Energy Supply

The Contractor shall conduct research that addresses energy supply issues by applying capabilities in the areas of exploration, reservoir modeling,

integrated assessments, and environmental transport. The Contractor shall support DOE/NNSA's efforts in the broad areas of energy efficiency, renewable energy, fossil energy, and nuclear energy.

1.4.4 Transportation and Infrastructure

The Contractor shall conduct research, development, and demonstration of fuel cell and hydrogen production, delivery, and storage technologies to accelerate the introduction of hydrogen-powered fuel cell vehicles into the transportation sector.

1.4.5 Transportation and Packaging

The Contractor shall conduct transportation technology development to ensure base technology is available to support NNSA in the design, test, fabrication, and certification of radioactive, energetic and hazardous material packaging for applications that are complementary with the NNSA's mission.

1.4.6 Magnetic Fusion

The Contractor shall maintain a technology base to support the design of components that will perform satisfactorily in fusion plasma environments in support of NNSA's mission.

1.4.7 Combustion Research

The Contractor shall conduct R&D to include combustion diagnostics, combustion chemistry, reacting flows, combustion modeling and high-temperature materials in support of NNSA's mission.

1.4.8 Nuclear Energy Research

The Contractor shall support reactor development initiatives focused on developing and implementing features and concepts that offer significant improvements in efficiency, maintenance, operability, nuclear reactor and power plant safety, security, reliability, economics, and longer operating life; and shall develop approaches for improving the reactor licensing process.

1.5 Environmental Technologies

The Contractor shall apply scientific and engineering capabilities to facilitate the development of new technologies for timely, cost-effective, and comprehensive solutions for local, regional, and global environmental problems, and environmental resource problems. This includes, but is not limited to, waste management, environmental stewardship, support to the Waste Isolation Pilot Plant (WIPP), and environmental resource problems. Emphasis will be on new approaches to treatment, disposal, storage, and reduced generation of waste. Emphasis will also include the safety, security,

reliability and sustainability of environmental resources, technologies, engineered systems, and public policies to produce, deliver and utilize the resources where needed. The Contractor shall apply, with Contracting Officer approval, capabilities to environmental restoration, and facility stabilization problems at the Laboratory, within the NNSA Nuclear Security Enterprise and other locations.

1.5.1 Energy Efficiency and Renewable Energy

The Contractor shall provide research, design and manufacturing capabilities for solar electric technologies (solar thermal and photovoltaic), wind energy, geothermal energy systems, industrial and transportation applications, fossil energy programs, electric power systems, hydrogen power technologies and battery systems for utilities and transportation in support of NNSA's mission.

1.6 Department of Homeland Security Programs

The Contractor shall make available its personnel, capabilities and facilities to assist the Department of Homeland Security (DHS) in executing its mission pursuant to Public Law 107-296, Section 309, Utilization of Department of Energy National Laboratories and Sites in Support of Homeland Security Activities.

1.7 Strategic Partnership Projects (SPP) (Non-Department of Energy Funded Work)

The Contractor shall conduct Strategic Partnership Projects (SPP) for non-DOE entities and agencies, as approved by the Contracting Officer. All such work shall be consistent with and complementary to mission assigned to the Contractor by NNSA. Full cost recovery and cost transparency shall be maintained for SPP programs consistent with the Economy Act of 1932, Cost Accounting Standards, applicable DOE Orders, and shall be conducted with other applicable laws, regulations, and policies.

1.8 Laboratory-Directed Research and Development (LDRD)

The Contractor shall submit a LDRD Program Plan for approval by the Contracting Officer to conduct a LDRD program that encourages multidisciplinary and multidivisional research on complex scientific and engineering problems and on individual basic and applied research projects to enhance the core capabilities and competencies required to fulfill the Laboratory's missions.

1.9 Industrial Partnerships and Technology Transfer Programs

The Contractor shall submit industrial partnerships and technology transfer programs/agreements to the Contracting Officer for approval. The Contractor shall make available to private industry the unique capabilities of the Laboratory in order to enhance the industrial competitiveness and national security.

1.10 Safeguards & Security Technology Program

The Contractor shall support NNSA programs to develop technology and systems for protecting facilities and information, and safeguarding nuclear materials. This will include developing a technology base and systems concept for physical protection and accountability; providing technical support for improving international safeguards; and strengthening physical protection of NNSA facilities and nuclear materials.

2.0 LABORATORY AND SITE OPERATIONS

The Contractor shall manage, operate, protect, maintain and enhance the Laboratory's ability to function as a DOE multi-program laboratory, provide the infrastructure and support activities, support the accomplishment of the Laboratory's missions, and assure the accountability to the NNSA under the results-oriented, performance-based provisions of this Contract.

2.1 Safeguards and Security

The Contractor shall conduct a security program that fosters an institutionalized security conscious culture that performs work securely and assigns unambiguous roles, responsibilities, authorities, and accountability while integrating excellence in safeguards and security into all Laboratory activities. The safeguards and security program includes Integrated Safeguards and Security Management (ISSM); physical security; protection of Government property; classification, declassification and protection of information; cyber security; nuclear materials protection, control and accountability; and, personnel security including access control for Laboratory staff and visitors. The Contractor shall support NNSA and DOE overarching security initiatives including safeguards and security technology deployment efforts.

2.2 Environment, Safety and Health

The Contractor shall conduct an Environment, Safety and Health (ES&H) program, including environmental protection and compliance, and safety and health management that (1) achieves an institutionalized ES&H conscious culture that embraces Conduct of Operations and allows work to be performed safely, (2) assigns unambiguous roles, responsibilities, authorities, develops appropriate work controls and ensures accountability for the performance of work in a manner that ensures protection of workers, the public and the environment, and (3) integrates excellence in ES&H into all Laboratory activities. The Contractor shall implement an environmental management system (waste minimization, pollution prevention, etc.) within the Integrated Safety Management system. The Contractor shall conduct cultural resource compliance and protection programs including monitoring, surveillance, and reporting with respect to all natural and cultural resources; obtaining and maintaining required permits and licenses from regulatory agencies; and, certification and training programs. Through an Integrated Safety Management System, ES&H management processes, formal work control and work performance processes, the Contractor shall ensure the safe performance of all Laboratory work. The Integrated Safety Management System shall

be applied to all Contractor, including subcontractors or other entities, activities conducted at the Laboratory.

The safety management program shall be comprehensive in nature covering all work performed under this Contract. The Contractor shall ensure implementation of a safety management system addressing nuclear safety requirements including (1) a robust safety authorization basis process, (2) system engineering and configuration management of structures, systems and components important to safety, (3) quality assurance, (4) stabilization and disposition of nuclear materials, and (5) startup and restart of nuclear facilities.

The Contractor shall also conduct activities in accordance with those DOE commitments to the Defense Nuclear Facilities Safety Board (DNFSB) contained in Secretary of Energy's implementation plans and other DOE correspondence to the DNFSB. The Contractor shall support, as directed by the Contracting Officer, preparation of DOE responses to DNFSB issues and recommendations accepted by the Secretary of Energy which affect Contract work. The Contractor shall fully cooperate with the DNFSB and provide access to facilities, information and Contractor personnel. The Contractor shall maintain a document process consistent with the DOE Manual on interfacing with the DNFSB. The Contractor shall ensure that subcontractors adhere to these requirements.

The Contractor shall implement a hazard categorization and analysis process, a startup and restart process, as well as a safety authorization basis process for non- nuclear facilities that includes approval by the Contracting Officer for moderate hazard facilities/operations and high hazard facilities/operations. The Contractor shall ensure implementation of a formal ES&H performance based self-assessment process addressing both ES&H program and line management implementation that is (1) risk based and has the requisite depth, breadth, rigor and defensibility, (2) conducted with the appropriate subject matter expertise, (3) performance and behavior based, and (4) tied to an institutional issues management program that ensures closure of findings and opportunities for improvement.

The Contractor shall ensure implementation of an ES&H performance measurement program that ensures comprehensive gathering of operational data, adequate causal analysis, risk analysis, trending, comparison to metrics, includes leading and lagging indicators, dissemination of operational data, and measures both worker and subcontractor performance. The Contractor shall perform ES&H occurrence/event investigation ensuring that root cause analysis is performed, corrective actions address the systemic problems identified at the Laboratory, and use a Lessons Learned program to implement improvements to the Laboratory operations. The Contractor shall provide oversight of contractual ES&H standards and requirements appropriate to subcontractors and other entities performing work at the Laboratory.

The Contractor shall cooperate with worker health studies conducted by other Federal agencies and contract researchers under NNSA/DOE sponsorship.

2.3 Environmental Management

For all Laboratory sites, the Contractor shall: (1) manage newly generated waste to support Laboratory missions including treatment, storage, and disposal of solid, hazardous, mixed, and radioactive wastes; (2) coordinate and implement waste minimization and pollution prevention initiatives; (3) implement an Environmental Management System under Integrated Safety Management; (4) commission and manage the necessary waste management facilities and equipment to ensure uninterrupted waste management operations; (5) facilitate the remediation and conveyance of Land Transfer parcels pursuant to applicable law; (6) complete the Annual Site Environmental Report (ASER); and (7) perform all work pursuant to DEAR 970.5223-1, *Integration of Environment, Safety, and Health Into Work Planning and Execution*.

2.4 Financial Management System

The Contractor shall maintain a financial management system that provides sound financial stewardship and public accountability. The overall system shall be suitable to collect, record, and report all financial activities and contain an effective internal control system for all expenditures. Furthermore, the Contractor shall support the DOE/NNSA Planning, Programming, Budgeting and Evaluation (PPBE) process by including a budgeting system for the formulation and execution of all resource requirements. The Contractor's financial systems shall support NNSA's systems and processes.

The Contractor shall maintain a transparent financial cost reporting system, at the task level and as defined by NNSA, to provide detailed and accurate cost reports for cost, scope, and accurate schedule estimating for mission and mission support functions performed under this Contract. The cost reports shall include labor costs, leave/hours not worked, staff augmentation, fringe, pension, legacy materials, services/subcontractors, direct service centers, other expenses, capital, labor category, and full-time equivalent (FTE) resource usage for all direct and indirect costs and utilize cost benefit analyses to determine the appropriate level of support functions and risks. The Contractor shall provide NNSA full transparency into all financial cost reporting systems and shall provide reports, as requested by the Contracting Officer, to allow NNSA visibility into program and cost management. The Contractor shall collaborate with the NNSA complex to identify and collect common productivity and labor cost data needed to seek complex-wide solutions, as requested by the Contracting Officer.

2.5 Work Authorization (WA) System

Specific work requirements under this Contract will typically be established annually and updated as needed by the Contracting Officer in accordance with the applicable DOE Orders and the Section I clause DEAR 970.5211-1, *Work Authorization*.

2.6 Information Technology (IT) and Cyber Security

The Contractor shall support NNSA's efforts to optimize the efficiency of the NSE by consolidating IT infrastructure/services and eliminating redundant systems, to increase

efficiency through mobility and cloud computing, and to improve business processes to better integrate across sites. The Contractor must develop a single, integrated “to-be” vision that utilizes the best available technologies and management practices from both Government and commercial sources to improve and achieve performance excellence, including fiscal efficiency. Desktop and “back-office” computing capabilities shall be compatible with those used by NNSA. “Back-office” functions shall include, but are not limited to, payroll, finance, project management, and human resources.

In the area of cybersecurity, the Contractor shall ensure data confidentiality, integrity, and availability; and implement technology designs that provide effective network monitoring, limit an intruder’s ability to traverse the network and mitigate new vulnerabilities in a timely manner. The Contractor shall develop enhanced information security protection tools for information systems, applications, and networks within both classified and unclassified environments; and ensure compliance with NNSA’s defense-in-depth cybersecurity strategy.

All deliverables that involve information technology that use internet protocol (products, services, software, etc.) shall comply with Internet Protocol version 6 (IPv6) standards, the Homeland Security Presidential Directive-12 (HSPD-12), and interoperate with both IPv6 and IPV4 systems and products. If the Contractor plans to offer a deliverable that involves IT that is not initially compliant, the Contractor shall (1) obtain Contracting Officer’s approval before starting work on the deliverable; (2) provide a migration path and firm commitment to upgrade to IPv6 and HSPD-12 compatibility for all application and product features, and (3) have IPv6 technical support for fielded product management, development and implementation available.

Prior to using any Contractor or parent-owned software and systems where reimbursement is expected, the Contractor shall obtain the Contracting Officer’s approval.

2.7 Intelligence/Counterintelligence Program

The Contractor shall conduct an ongoing and comprehensive effort to assess, detect and deter foreign intelligence and terrorist threats to the personnel, facilities, and technologies within the NNSA directed mission.

2.8 Business Operations

The Contractor shall manage and administer a system of internal controls for all business and administrative operations. Management of the Laboratory business and administrative operations shall include (1) integrating common systems of internal controls across the Laboratory and implementing business processes that are risk-based, cross-functional, cost effective, optimize and streamline operations, increase efficiency and enhance productivity; and (2) supporting NNSA in the identification and application of enterprise-wide electronic processes throughout the Nuclear Security Enterprise to streamline business practices.

2.9 Contractor Assurance System (CAS)

The Contractor shall have and utilize a Contractor-designed system to manage performance consistent with Contract requirements, and shall be transparent to the Government. The CAS shall provide the Contractor and Government assurance that: the Contractor's policies and practices are meeting the requirements of the Contract; those policies and practices are being implemented throughout the Laboratory; and continual improvement through self-identification of deficiencies is occurring. The CAS shall be a primary tool used by Contractor management to: measure and improve performance; ensure that mission objectives and Contract requirements are met, to include individual Work Authorizations; ensure that workers, the public and the environment are protected; and ensure that operations, facilities, and business systems are efficiently and effectively operated and maintained. An effective CAS integrates Contractor management, supports corporate parent governance, and facilitates Government oversight systems. The Contractor is fully accountable for performing its own assessment of these areas. NNSA oversight shall not be relied upon by the Contractor in place of its CAS system, and does not affect the Contractor's accountability for performance. The CAS shall be approved and monitored by the Contractor's Parent Organization or Board of Directors. An effective working CAS will provide the Government the opportunity to reduce transactional oversight.

2.10 Integrated Safety Management, Integrated Safeguards and Security Management, Environmental Management System, and Quality Assurance Systems

The Contractor shall ensure that management systems such as Integrated Safety Management (ISM), Integrated Safeguards and Security Management (ISSM), Environmental Management System (EMS), and Quality Assurance Systems (QAS) are integrated into its operations and culture. Integration of management systems and performance of implementation shall be reflected in the CAS. The Contractor shall emphasize safety culture/safety conscious work environment through integrated management strategies. Positive and negative performance issues shall be routinely reviewed, in the aggregate at all management and organizational levels, to drive continuous improvement. Lessons learned from events shall include extent of condition reviews to reduce the probability of recurrence elsewhere at the site. The Contractor shall continuously assess and improve its QAS to include enhancements to management assessment, issue management, procedure quality/compliance, and effective metrics to monitor performance.

2.11 Environmental Permits and Applications

In recognition of the Contractor's responsibility to operate in compliance with all applicable environmental requirements, the Contractor is responsible for signing environmental permits and applications as "operator" or "co-operator" of the Laboratory.

- 2.8.1** If bonds, insurance, or administrative fees are required as a condition for such permits, such costs shall be allowable. In the event that such costs are

determined by NNSA to be excessive or unreasonable, NNSA will provide the regulatory agency with an acceptable form of financial responsibility.

- 2.8.2** The Contractor shall notify the Contracting Officer promptly when it receives service from the regulators of Notices of Violation/Notices of Alleged Violation (NOVs/NOAVs), fines, and penalties. Nothing stated above shall affect the Contractor's right to challenge or contest the applicability or validity of such NOVs/NOAVs, fines, and penalties.
- 2.8.3** In the event of termination or expiration of this Contract, NNSA will require the new Contractor to accept transfer of all environmental permits executed by the previous Contractor.
- 2.8.4** When providing NNSA with documents that are to be signed or co-signed by NNSA, the Contractor shall accompany such document with a certification statement, signed by a Contractor Key Person for the subject matter, attesting to NNSA that the document has been prepared in accordance with all applicable requirements and the information is, to the best of its knowledge and belief, true, accurate, and complete.

2.12 Environmental Restoration and Waste Management

The Contractor shall conduct compliant environmental restoration activities; characterize soil and groundwater and remediate contamination; provide management of waste necessary to support Laboratory missions including storage, treatment, and disposal of solid, hazardous, mixed, and radioactive wastes; decontaminate and decommission facilities and sites; and coordinate and implement waste minimization and pollution prevention initiatives.

2.13 Facility Operation and Infrastructure

The Contractor shall manage Government-owned and Contractor-operated (GOCO) facilities to further national interests and to perform NNSA statutory missions. The Contractor shall perform overall integrated planning, acquisition, maintenance, operation, management and disposition of GOCO facilities, infrastructure, and real property used by the Laboratory in accordance with applicable terms and conditions of this contract. The Contractor shall provide a Preliminary Real Estate Plan (PREP) for all proposed real property actions for approval by NNSA. These facilities, infrastructure, and real property may also be made available, upon appropriate agreements, to private and public sector entities including universities, industry, and local, state, and other government agencies. The Contractor shall maintain sufficient facilities and plan new facilities to support the Stockpile Life Extension Program design, development, qualification, and certification. The Contractor shall ensure the allocation of Government-owned facilities include appropriate office space for the NNSA Field Office and other NNSA Programs as requested by the Contracting Officer.

The Contractor shall use a performance-based approach to real property life-cycle asset management to perform overall integrated planning, acquisition, upgrades, and

management of Government-owned, leased or controlled facilities and real property accountable to the Laboratory. The Contractor shall employ facilities management practices that are best-in-class and integrated with mission assignments and business operations. The Contractor's maintenance management program shall be based on best practices to maintain Government property in a manner which: (1) promotes and continuously improves operational safety, environmental protection and compliance, property preservation and cost effectiveness, (2) ensures continuity and reliability of operations, fulfillment of program requirements and protection of life and property from potential hazards, and (3) ensures the condition of all assets will continuously improve over the period of performance.

2.14 Construction

The Contractor shall ensure the construction of facilities is safe, secure, reliable and cost effective. In doing so, the Contractor shall:

- (i) Perform design and construction activities for all projects as assigned;
- (ii) Document project management requirements in accordance with DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, or its successor;
- (iii) Cooperate, collaborate, and interface with other NNSA Contractors to maximize efficiencies;
- (iv) Perform initial project development (for all projects regardless of dollar value), project management, design, and construction management activities in accordance with required DOE Orders; and
- (v) Maintain project baselines, comply with required reporting, develop Documented Safety Analyses, define quality requirements, ensure National Environmental Policy Act compliance, provide quarterly reports to the NNSA for assigned projects, support external reviews, and meet other requirements as defined in the Contract and as directed by the Contracting Officer.

The Contractor shall effectively use an Earned-Value/resource loaded Project Management System across the Laboratory to deliver projects on schedule, within budget, and to meet mission performance. The Contractor shall provide design and risk analysis, value engineering, configuration management, conceptual designs, preliminary designs, material testing, and surveying in support of engineering designs (Title I); final designs and construction drawings (Title II); and as-built drawings pursuant to construction inspections, surveying, and material testing (Title III) services for activities supporting NNSA and its programmatic customers. The Contractor shall provide the skills necessary to accomplish this work to the safety and quality levels required for all facilities up to and including nuclear facilities, as applicable, while meeting demanding customer time constraints and milestones.

2.15 Training

The Contractor shall maintain training and educational services including general training activities, involving individual employee development, educational and professional advancement, required technical training, environment, safety and health training, and safeguard security training, and contract compliance training.

All Laboratory training and qualification programs shall emphasize the environment, safety and health (ES&H), and safeguards and security aspects of job and position responsibilities. The Contractor's training and qualification program shall be an element of the laboratory integrated safety management process. The Contractor shall provide other training programs and opportunities as approved by the Contracting Officer. The Contractor shall ensure the continuing involvement by senior laboratory line management in directing and evaluating the training and qualification program.

2.16 Purchasing Management

The Contractor shall have an NNSA-approved purchasing system to provide required purchasing support and subcontract administration.

2.17 Personal Property Management

The Contractor shall have and maintain an NNSA-approved personal property management system for acquisition, accountability, utilization, and disposal of Government personal property. The Contractor shall manage Government personal property in accordance with applicable regulations, directives, terms and conditions of this contract. The Contractor's property management plan, manual, procedures and processes shall be reviewed by NNSA to ensure compliance with applicable requirements. The contractor shall not incorporate any industry leading practices or voluntary consensus standards that conflict with applicable requirements.

2.18 Emergency Management

The Contractor shall conduct an effective emergency management program that includes the following, but is not limited to:

- (i) Emergency preparedness plans and procedures;
- (ii) An occurrence notification and reporting system;
- (iii) An effective "lessons learned" capture and dissemination process;
- (iv) Operation of an Emergency Operations Center; and
- (v) Emergency response capabilities for local, regional, and national missions to include a Radiological Assistance Program, an Accident Response Group, and a Nuclear Emergency Search Team in the areas of nuclear weapons expertise, nuclear weapon surety, environment, safety and health, waste management, transportation and other areas requiring specialized planning, training, and responses to nuclear weapon accidents or incidents.

2.19 Other Administrative Services

The Contractor shall perform the following, but is not limited to:

- (i) Operate communications systems;
- (ii) Operate transportation and traffic management services;
- (iii) Maintain a list of all deliverables required to be submitted to NNSA;
- (iv) Manage and operate a National Archives and Records Administration compliant records management system;
- (v) Operate a system of records for individuals including those related to personnel radiation exposure information, medical, safety and health; and
- (vi) Provide logistics support to the NNSA when approved by the Contracting Officer.

The Contractor shall maintain the inter-site and intra-site classified and unclassified information system for technical programs, organizational, business and operations functions and for activities including general purpose programming, data collection, data processing, report generation, software, electronic and telephone communications. The Contractor shall provide computer resource capacity and capability sufficient to support (1) Laboratory-wide information management requirements and (2) Laboratory wide classified computing infrastructure. The Contractor shall also maintain a records management program. The Contractor shall, with Contracting Officer approval, standardize non-scientific software and hardware programs/platforms within the Laboratory for generating and storing electronic information.

2.20 User Facilities

The Contractor shall manage all Laboratory User Facilities. User Facilities are a unique set of scientific research capabilities and resources whose primary function is to satisfy DOE/NNSA programmatic needs, while being accessible to outside users within the capabilities and approved operational and safety envelope. With approval of the Contracting Officer, the Contractor shall make available for use by the private sector the Laboratory's research facilities that are designated by NNSA as Technology Deployment Centers or User Facilities, which may consist of physical facilities, equipment, instrumentation, scientific expertise, and necessary operational personnel. These facilities are available to U.S. industry, universities, academia, other laboratories, state and local governments, and the scientific community in general.

2.21 Operating and Managing Nuclear Facilities

The Contractor shall have a safety management system that addresses nuclear safety requirements. The system shall also:

- (i) Achieve an institutionalized nuclear safety conscious work environment that embraces Conduct of Operations and allows work to be performed safely;

- (ii) Assign unambiguous roles, responsibilities, authorities, developing appropriate work controls and ensuring accountability for the performance of work in a manner that ensures protection of workers, the public, and the environment;
- (iii) Integrate excellence in nuclear safety into all appropriate Laboratory activities;
- (iv) Use a robust safety authorization basis process;
- (v) Use system engineering and configuration management of structures, systems, and components important to safety;
- (vi) Assure quality;
- (vii) Stabilize and disposition nuclear materials; and
- (viii) Startup and restart nuclear facilities.

3.0 LABORATORY MANAGEMENT

3.1 Accountability

The Contractor is responsible for the quality of its products and services. The Contractor is also responsible for assessing its operations, programs, projects and business systems, identifying deficiencies and implementing needed improvements. Where NNSA oversight has evaluated the Contractor's performance in meeting its obligations under this Contract, the Contractor is nonetheless accountable for performance. The Contractor is also responsible for improving and sustaining healthy communications with DOE/NNSA Senior Leadership, including the Los Alamos Field Office (LFO) on issues and decisions, and demonstrating better partnering, particularly regarding stakeholder discussions and messaging.

3.2 Enterprise Success

The Contractor shall actively identify and participate with NNSA, and other NNSA Contractors, to evaluate, plan, develop, and implement strategic enterprise-wide initiatives that optimize mission and business operations across the NNSA. The goal of these initiatives is to increase the efficiency and cost effectiveness from a business and mission perspective, to include:

- Improved partnering collaborations with the National Security Laboratories to integrate more effectively and efficiently;
- Improved cost estimation practices for all Contractor work;
- Streamlined business operations and reduced operational costs enterprise-wide;
- Implementation of best practices enterprise-wide for efficient, safe, secure high-paced parallel nuclear operations;
- Improved risk-management practices, including risk-informed, mission supportive, cost-efficient, safety basis processes;
- More consistent work practices and operational processes;
- Better pricing, better products, more timely delivery;

- Reduced administrative costs and lead times for both the Contractor and the DOE/NNSA;
- Greater standardization and interchangeability of processes and priorities across the NSE; and
- Increased awards to small business entities.

NNSA expects these and other initiatives to result in a shift to an enterprise focus, based on the Contractor who possesses the most expertise and experience level within the NSE.

The Contractor shall cooperate with NNSA and NSE Contractors in identifying potential cross-NSE benefits to be derived from implementing common practices and goals across the NSE in the areas of mission workload and enterprise functional support.

The Contractor and NNSA shall establish performance incentives with performance measures and targets for strategic efforts that result in enterprise performance improvement overall for the Government.

3.3 Parent Organization(s)

- (i) The Contractor is encouraged to identify opportunities to use parent corporate systems and corporate home and branch office personnel for Laboratory operations for the purposes of monitoring Laboratory performance, assisting the Laboratory in meeting its mission and operational requirements, streamlining the Contractor's administrative and business systems, improving performance, and adapting private sector expertise to Laboratory issues.
- (ii) The term "systems" means any discrete process, procedure, program, document, or instrument where cost of use under this Contract can be identified and quantified to the parent corporation.
- (iii) The Contractor, prior to using any parent corporate systems or home and branch office personnel, where reimbursement is expected, shall submit a plan to the Contracting Officer for review and approval. In reviewing the plan, the Contracting Officer will consider the extent to which each separate element of the plan is: more efficient in meeting mission and operational requirements; represents an overall cost savings to the Government; brings value-added expertise; assists the monitoring performance; and whether data is readily transferable to a successor Contractor.
- (iv) The parent organization(s) shall establish an oversight entity, independent and autonomous from Laboratory management that shall ensure successful contract performance and that shall identify opportunities for the parent organization(s) to engage with Laboratory management to address Laboratory performance issues. The parent organization shall discuss

oversight mechanism results and initiatives with senior NNSA leadership each quarter.

- (v) The parent organization(s) shall also establish an audit entity (e.g., audit committee), independent and autonomous from Laboratory management, that shall perform financial reporting, risk management, internal control, ethics, compliance with laws and regulations and the laboratory code of conduct, and the internal audit and external audit and review processes. The audit entity shall be established consistent with best practices identified by the Institute of Internal Auditors (IIA) and The Sarbanes Oxley Act of 2002, Section 301.
- (vi) The audit entity shall provide the Contracting Officer with annual reports of its activities. On an annual basis the audit entity shall brief the Contracting Officer, or other delegate, as to its perspective on the:
 - (1) Health of the Contractor's control environment;
 - (2) Effectiveness of corrective action plans resulting from audit and review findings;
 - (3) Significant financial and operational risk facing the organization; and
 - (4) Adequacy of the Contractor's internal audit activity and staffing.

3.4 Education Programs

The Contractor shall conduct a program of support for science, mathematics and engineering education at both the precollege and university levels. Subject to applicable contract terms, policies, laws, and regulations, this support may include: technical assistance; loans of scientific equipment; programs of "hands on" research experience for students, teachers and faculty members; a program of encouraging volunteerism and community service; and cooperative programs.

3.5 Privacy Act System of Records

The Contractor shall design, develop, and maintain a system of records on individuals to accomplish an agency function in accordance with Section I clause FAR 52.224-2, *Privacy Act*. The applicable systems of records are available in the Federal Register. A list of applicable records will be finalized after Contract award.

3.6 Communications and Public Affairs

The Contractor shall conduct communications, information, and public affairs programs including internal and external communications; community involvement and outreach; interactions with the media, businesses, and the scientific and technical community; and liaison with local, state, Native American, and federal agencies. The Contractor will operate within an NNSA-approved Public Affairs Program plan.

3.7 Self-Assessment Program

The Contractor shall conduct a self-assessment program that will be used, in part, to assess: (1) the overall performance in Laboratory operations and administration, (2) delivery of scheduled nuclear weapons components and capabilities, and (3) science and technology programs performance. The Contractor's self-assessment program shall be a key element of the Contractor's Assurance System and supports the self-assessment report required by the Contract Section H clause entitled "Performance Based Management."

3.8 Audits and Assessments

The Contractor shall conduct an audit program which provides capabilities for both internal and subcontractor audits and supports external audits, reviews, and appraisals.

3.9 Community Support

The Contractor shall, with Contracting Officer approval, provide community support to facilitate Laboratory operations, including coordination with the County of Los Alamos. The Contractor shall perform a periodic needs assessment to determine what support to the community is necessary to facilitate Laboratory operations.

3.10 Freedom of Information Act (FOIA)

The Contractor shall promptly review FOIA requests and provide timely and quality responses consistent and compliant with federal law and regulations (including DOE regulations at 10 CFR 1004) and the NNSA FOIA program as implemented by the NNSA FOIA Officer, or as may otherwise be directed by the Contracting Officer.

3.11 National Environmental Policy Act (NEPA)

The Contractor shall assist in the NNSA's NEPA implementation, in a manner consistent and compliant with federal law and regulations (including DOE regulations at 10 CFR 1021) and the NNSA NEPA program as implemented by the NNSA LFO NEPA Compliance Officer (NCO), or as may otherwise be directed by the Contracting Officer. The Contractor may not undertake on DOE's behalf an action that is subject to NEPA until the NCO has notified the Contractor that DOE/NNSA has satisfied applicable NEPA requirements.

3.12 Legal Affairs

The Contractor shall maintain a legal program to support Contract activities related to the Laboratory's management of programs, projects and processes necessary to accomplish the mission assigned by NNSA, including without limitation, those related to: patents, licenses, and other intellectual property rights; subcontracts and procurement issues; technology transfer; records management; environmental compliance and protection;

safety and health; security; operations; employment and labor relations; and litigation and claims and proactive management of the Laboratory's legal risk.

3.13 Other Government Agencies Support

The Contractor shall support NNSA requests in interfacing with various Government agencies, to include, but not limited to, federal, state, local and tribal regulatory agencies. The Contractor shall ensure its employees cooperate fully and promptly with all Government agencies. The Contractor's personnel policies shall provide for appropriate discipline, as determined by the Contractor, for any employee who does not fully and promptly cooperate or who impedes, or attempts to impede, a government audit, investigation, inspection, or other type of review or inquiry.

3.14 Other Administrative Services

The Contractor shall provide other administrative services to include operating communications systems; operating transportation and traffic management services, managing and operating a records management system; and operating a systems of records for individuals including those related to personnel radiation exposure information, medical, safety and health; logistics support to the NNSA Los Alamos Field Office, when approved by the Contracting Officer; and, support other NNSA Nuclear Security Enterprise initiatives, when approved by the Contracting Officer.

3.15 Reports and Other Deliverables

The Contractor shall prepare, submit, disseminate, or otherwise publish financial, schedule, scientific, and technical performance plans and reports; and other information and deliverables consistent with the needs of the various programmatic sponsors and other customers or as required elsewhere in this Contract or as specifically required by the Contracting Officer.

CHAPTER III. Human Resources

1.0 DEFINITIONS

Incumbent Employees: Los Alamos National Security, LLC employees in good standing under Contract DE-AC52-06NA25396 as of the effective date of the successor Contract.

Non-Incumbent Employees: new hires, i.e., employees other than Incumbent Employees, who are hired by the Contractor on or after the first day of the Base Period of the Contract.

2.0 WORKFORCE TRANSITION

The following are requirements the Contractor shall carry out during the Transition Period, prior to the beginning of the Base Period. After the effective date of the Contract, the Contractor may propose alternate due dates for the deliverables described in 2.1 Staffing Plan, 2.2 Pay & Benefits, and 2.3 Incumbent Employees Right of First Refusal, and 2.4 Personnel Appendix (*Section J Appendix C*). The Contracting Officer may approve such changes provided the deliverable dates make transition more effective and efficient for both parties.

2.1 Staffing Plan

No later than 30 calendar days after the effective date of the Contract the Contractor shall provide NNSA its plan for achieving the right workforce size and skills mix and an estimate of the number of employees at each site to whom it expects to make employment offers. This staffing plan shall highlight essential skills and personnel that must be retained, by position, to ensure continuity of essential mission, safety, security, and safeguards programs.

2.2 Pay & Benefits

Consistent with the requirements identified in 3.0 COMPENSATION and 4.0 BENEFITS below, the Contractor shall develop and submit for NNSA approval a pay and benefits program to cover non-bargaining unit Incumbent Employees and non-bargaining unit Non-Incumbent Employees. It is expected that the benefits program will be developed using best practice and market-based design concepts to achieve maximum efficiency and lower cost.

- 2.2.1** No later than 45 calendar days after the effective date of the Contract, the Contractor shall submit for NNSA approval all proposed benefit plans including but not limited to retirement plans, disability, healthcare, and paid time off. The submission shall include all plan documents that will describe benefits provided to employees including existing plans to which the Contractor becomes a sponsor at the beginning of the Base Period (with proposed changes to existing plans) as well as newly proposed plans.

- 2.2.2** The submission shall also include an “Employee Benefits Value Study” comparing the proposed benefits for non-bargaining unit Incumbent Employees and non-bargaining unit Non-Incumbent Employees using the Consolidated Employee Benefit Value Study methodologies and comparator companies, to be provided by the Contracting Officer, described in 4.1.5 below. Contracting Officer’s approval of the Contractor’s benefits program will be contingent on the net benefit value not exceeding the comparator group by more than five percent. Or, the Contractor may propose an alternative strategy to realign employee benefits within the 105 threshold within a specified period of time. Such proposal must be approved by the Contracting Officer.
- 2.2.3** No later than 90 calendar days after the effective date of the Contract, the Contractor shall submit a plan with a timeline for implementing a Compensation system that meets the criteria defined in 3.0 COMPENSATION below.

2.3 Incumbent Employees Right of First Refusal

The Contractor shall use the Transition Period to make hiring decisions. The Contractor shall give a right of first refusal of employment for every position identified by the Contractor as necessary for completing the requirements of the Contract (other than positions occupied by Key Personnel and managers who directly reported to them) under this Contract to Incumbent Employees as defined in **1.0 DEFINITIONS** who meet the qualifications for a particular position. The Contractor shall provide a written offer of employment that identifies the individual’s pay and a summary of the benefits package that will be available to the individual. Incumbent Employees offered the same position shall be provided their same base salary/pay rate in existence at the time the offer is made. Incumbent Employees offered a different position than the position they are performing at the time the offer is made shall be provided pay commensurate with the offered position. Such offers shall be provided to employees as soon as possible, however, no later than 90 calendar days after the effective date of the Contract.

2.4 Personnel Appendix

The Personnel Appendix (*Section J Appendix C*) sets forth certain Contractor Human Resources Management policies and related expenses that have cost implications under this Contract and are not covered explicitly in the FAR or DEAR cost principles. No later than 120 days after the effective date of the Contract, the Contractor shall submit a plan to address the open items in the Personnel Appendix Section J- Appendix C, unless the Personnel Appendix sets forth an alternative submission date. The Contractor shall obtain CO approval of Personnel Appendix proposals before implementation.

3.0 COMPENSATION

The Contractor shall establish an integrated market based pay and benefit program to recruit and retain a highly skilled, motivated, and experienced workforce capable of carrying out the technical and other requirements set forth elsewhere in the SOW.

3.1 Total Compensation System

Consistent with the requirement in 2.2, Pay and Benefits, the Contractor shall establish a market based pay and benefit program. The objective is to provide a level of total compensation, which, within available funds, attracts, motivates and retains a highly competent workforce and maintains a competitive position in the applicable labor markets.

The Contractor shall develop, implement and maintain formal policies, practices and procedures to be used in the administration of its compensation system consistent with FAR 31.205-6 and DEAR 970.3102-05-6, *Compensation for Personal Services*. In addition, the Contractor's total compensation system shall include the following components:

- (i) Philosophy and strategy for all pay delivery programs;
- (ii) System for establishing a job worth hierarchy;
- (iii) Method for relating internal job worth hierarchy to external market;
- (iv) System that includes a documented method and process for evaluating individual job performance and that bases individual and/or group compensation decisions on individual performance and Contractor performance as appropriate. In addition, the system must show the link to the annual evaluation of Contractor performance for individual compensation actions if appropriate;
- (v) Method for planning and monitoring the expenditure of funds;
- (vi) System for internal controls and self-assessment;
- (vii) System to ensure that reimbursement of compensation, including stipends, for employees who are on joint appointments with a parent or other organization shall be pro-rated according to the amount of time the employee spent performing work under this Contract;
- (viii) Means for communicating the pay programs to employees; and
- (ix) Methodology for ensuring compliance with applicable wage payment laws and regulations (e.g., FLSA).

Any changes to the Total Compensation System shall be submitted to the Contracting Officer 60 days prior to implementation. Changes that increase current or future costs shall be approved by the Contracting Officer prior to implementation.

3.2 Cash Compensation

The Contractor shall submit the following to the Contracting Officer for a determination of cost allowability for reimbursement under the Contract:

3.2.1 An Annual Compensation Increase Plan (CIP). The contractor shall submit the CIP to the Contracting Officer by October 1 annually and shall include the following components and data:

- (i) Comparison of average pay to market average pay;
- (ii) Information regarding surveys used for comparison;
- (iii) Aging factors used for escalating survey data and supporting information;
- (iv) Projection of escalation in the market and supporting information;
- (v) Information to support proposed structure adjustments, if any;
- (vi) Analysis to support special adjustments;
- (vii) Comparison of average pay to market average total cash compensation (TCC), if applicable;
- (viii) Funding requests and supporting analysis for each pay structure to include breakouts of merit, promotions, variable pay, special adjustments, and structure movement;
 - A. The proposed plan totals shall be expressed as a percentage of the payroll for the end of the previous CIP year.
 - B. All pay actions covered under the CIP are fully charged at the beginning of the CIP year, without regard to the time of CIP year in which the employee actually receives the pay or without regard to the fact that an employee may terminate before realizing the entire allocated CIP amount.
 - C. Specific payroll groups (e.g., exempt, nonexempt) for which CIP amounts are intended shall be defined by mutual agreement between the Contractor and the Contracting Officer.
 - D. The Contracting Officer may unilaterally adjust the CIP amount after approval based on major changes in factors that significantly affect the plan amount (for example, in the event of a major reduction in force or significant ramp-up).

- E. The Contractor is authorized to make minor shifts (up to 10%) in funds between payroll groups without prior Contracting Officer approval. The Contractor shall notify the Contracting Officer at the time funds are shifted.
- (ix) A discussion of the impact of proposed CIP on the site budget;
 - (x) Discussion of relevant factors other than market average pay (e.g., turnover and offer-to-acceptance statistics, collective bargaining provisions, geographic considerations, total compensation);
 - (xi) Contracting Officer approval is not required for the CIP under the following circumstances: 1) the CIP submission is equal to or less than the professionally recognized salary survey's salary increase projection (e.g. World at Work projection) and implementation of the survey's salary increase projection does not result in an overall over market salary position upon implementation of the CIP; and 2) NNSA does not notify the Contractor of any questions or concerns that may negate cost allowability. NNSA will provide notification within the two weeks following the Contractors submission (date will be identified in the annual NNSA CIP guidance);
 - (xii) Contracting Officer approval is required for the CIP under the following circumstances: (1) the proposed CIP percent increase exceeds the professionally recognized salary budget survey's salary increase projection (e.g. World at Work projection provided in the annual NNSA CIP guidance); (2) the Contractor's position to market warrants less than the survey's salary increase projection such that application of the CIP at the full increase projection would result in the overall position to be above market; and/or (3) the contractor's overall position to market is above market; and
 - (xiii) Contracting Officer approval is not required for any salary structure adjustments that do not exceed the professionally recognized salary budget survey's mean structure adjustments projected for the CIP year (e.g. World at Work projection provided in the annual NNSA CIP guidance).

3.2.2 When any Key Personnel Person is replaced, the compensation for the replacement shall be submitted for approval by the Contracting Officer. The top contractor official (i.e., Laboratory Director or equivalent) salary actions including merit pay increases shall be submitted annually to the Contracting Officer for approval. The top contractor official's approved reimbursed base salary will serve as the

maximum allowable salary reimbursement under the Contract. With these proposed compensation actions, the Contractor shall submit supporting justification related to internal and external equity, individual performance and the Application for Contractor Compensation Approval Form (DOE 3220.5). This documentation shall be provided to the Contracting Officer at least 30 days before the proposed effective date of the action.

3.2.3 If the Contractor proposes to establish a Non-base Incentive Compensation Plan, documentation shall be provided to the Contracting Officer, for approval, no later than 60 days prior to proposed implementation. The dollar amount authorized to fund the Incentive Compensation plan shall not exceed 2.0% of the total annual salary base as of the end of the previous plan year. Such proposal must contain:

- (i) The design of the Incentive Compensation Plan, the funding methodology, and linkage to Contract performance measures;
- (ii) Requirement for approval of Incentive Compensation Plan design changes by the Contracting Officer prior to implementation;
- (iii) Requirement for approval, prior to any changes to the performance period, the total percent amount of the pool, the eligible positions, and linkage to Contract performance goals;
- (iv) Requirement for policy that provides a specific pass-over rate, i.e., percent of participants who will not receive an incentive;
- (v) Requirement for an annual summary report on distributions made under an Incentive Compensation Plan; and
- (vi) A requirement for pay at risk.

3.2.4 The Contractor shall submit a severance plan within 60 days of the effective date of the base period, which must include the notification period, pay-in-lieu of notice policy, and the severance schedule. Supporting documentation must include information regarding standards from nationally recognized sources and or comparator firms (including corporate parents).

Severance Pay will not be an allowable cost under this Contract if the recipient employee:

- (i) Voluntarily separates, resigns or retires from employment, except that in the event the Contractor conducts an NNSA approved voluntary separation program;

- (ii) Is offered employment with a successor/replacement Contractor;
- (iii) Is offered employment with a parent or affiliated company; and/or
- (iv) Is discharged for cause; or
- (v) Is currently in a Key Personnel position.

Service Credit for purposes of determining severance pay does not include any period of prior service for which severance pay has been previously paid through a DOE cost-reimbursement contract.

3.3 Reports and Information: Compensation

The Contractor shall provide the Contracting Officer with the following reports and information with respect to pay and benefits provided under this Contract:

- (i) An Annual Contractor Salary-Wage Increase Expenditure Report to include, at a minimum, breakouts for merit, promotion, variable pay, special adjustments, and structure movements for each pay structure, showing actual against approved amounts, no later than 90 days after CIP plan year expenditures;
- (ii) A list of the top five most highly compensated executives as defined in FAR 31.205-6(p)(4)(ii) and their total cash compensation at the time of Contract award, and at the time of any subsequent change to their total cash compensation. This should be the same information provided to the System for Award Management (SAM) per FAR 52.204-10, and
- (iii) Other compensation reports and/or information as requested by the Contracting Officer.

4.0 BENEFITS

4.1 Assumption of Existing Pension and Benefit Plans and Establishment of New Pension and/or Benefit Plans

The Contractor will be required to become a sponsor of the existing pension plans and other Post Retirement Benefit Plans (PRB), as applicable, with responsibility for management and administration of the plans, including maintaining the qualified status of those plans. Incumbent Employees shall remain in their existing pension plans (or comparable successor plans if continuation of the existing plans is not practicable) pursuant to pension plan eligibility requirements and applicable law. The Contractor shall carry over the length of service credit and leave balances for Incumbent Employees accrued as of the date of the Base Period.

- 4.1.1** To the extent the Contractor seeks to establish new benefit plans or change benefits under existing benefit plans at the time of Contract

transition, the Contractor shall provide justification to the Contracting Officer for all new benefit plans and for all changes to existing benefit plans, plan design, or funding methodology. Proposed changes must also include cost impact, and the basis of determining cost. The Contractor must obtain approval from the Contracting Officer prior to implementation of a new benefit plan and prior to making changes to existing benefit plans that increase cost. The Contractor shall provide 60 day advance notification to the CO of changes to benefit plans that do not increase cost or long-term liability.

4.1.2 Cost reimbursement for pension and other benefit programs sponsored by the Contractor for non-bargaining and bargaining unit employees will be based on conformance with the “Employee Benefits Value Study” and an “Employee Benefits Cost Survey Comparison” requirements as described in 4.1.6.1 and 4.1.6.2 below.

4.1.3 If the Contractor seeks to terminate any benefit plan during the term of the Contract, the Contractor must obtain Contracting Officer approval for such termination. In addition, a Contractor proposal to terminate a pension plan must be provided to the Contracting Officer at least 60 days prior to the scheduled date of plan termination.

4.1.4 Service Credit for cost reimbursement for employee benefits to include PRB eligibility will be determined in accordance with NNSA Supplemental Directive NA SD O 350.1, *Management and Operating Contractor Service Credit Recognition*.

4.1.5 Unless otherwise stated, or as directed by the Contracting Officer, the Contractor shall participate in and/or submit the studies required in paragraphs 4.1.5.1 and 4.1.5.2 below. The studies shall be used by the Contractor in calculating the cost of the benefits under existing benefit plans. In addition, the Contractor shall submit updated values to the Contracting Officer for approval prior to the adoption of any change that will increase costs to a pension or other benefit plan.

4.1.5.1 The Consolidated Employee Benefits Value Study for non-bargaining unit employees, shall be completed every two years and submitted to the Contracting Officer no later than July 31 of the applicable year. An Employee Benefits Value Study (Ben Val) is an actuarial study of the relative value (RV) of the benefits programs offered by the Contractor to employees measured against the RV of benefit programs offered by comparator companies. The Contractor shall use the comparator companies previously used in the last Consolidated Benefit Value Study. If any of the comparator companies no longer participate, the Contractor shall recommend replacement companies for approval by the Contracting Officer. The Contractor shall include major non-statutory benefit plans offered by the Contractor, including

qualified defined benefit (DB) and defined contribution (DC) retirement; capital accumulation plans; and death, disability, health, and paid time off welfare benefit programs in the Value Study. Any M&O Contractor defined benefit pension plans, closed to new entrants, do not have to be included in the Ben Val measurement. To the extent that the value studies do not address postretirement benefits other than pensions, the Contractor shall provide a separate cost and plan design data comparison for the postretirement benefits other than pensions using external benchmarks derived from nationally recognized and Contracting Officer approved survey sources.

If applicable, a Ben Val for bargaining unit employees shall be completed six months prior to the end of the collective bargaining agreement. The Ben Val for bargaining unit employees must include at least 15 comparator companies approved by the Contracting Officer. The Ben Val must include major non-statutory benefit plans offered by the Contractor, including qualified DB & DC retirement; capital accumulation plans; and death, disability, health, and paid time off welfare benefit programs. Any M&O Contractor defined benefit pension plans, closed to new entrants, do not have to be included in the Ben Val measurement. To the extent that the Ben Val does not address post-retirement benefits other than pensions, the Contractor shall provide a separate cost and plan design data comparison for the post-retirement benefits other than pensions using external benchmarks derived from nationally recognized and Contracting Officer approved survey sources.

4.1.5.2 When the average net benefit value for non-bargaining employees (including different tiers of benefits or groups of employees) exceeds the comparator group average by more than five percent, the Contractor is required to provide, for Contracting Officer approval, a Corrective Action Plan describing the specific actions they plan to take to get to 105% within a specified period of time.

4.1.5.3 An Employee Benefits Cost Study Comparison (Cost Study) for non-bargaining and bargaining unit employees, shall be completed annually and submitted to the Contracting Officer no later than July 31. The Cost Study must use a professionally recognized measure approved by the Contracting Officer that analyzes the Contractor's employee benefits cost for employees on a per capita basis per full time equivalent employee and compares it with appropriate comparator data.

4.1.5.4 When the average of the Cost Study total benefit per capita cost for the non-bargaining employees exceeds the comparator group's per capita cost by more than five percent, the Contractor shall submit an analysis of the specific plan costs that are above the per capita cost range or total benefit cost as a percent of payroll and a corrective action plan

within 60 days after the Benefits Cost survey is conducted, to achieve conformance with the comparator group.

4.1.5.5 Within two years of Contracting Officer approval of the Contractor's Corrective Action Plan for non-bargaining employees, the Contractor shall attempt to align employee benefit programs with the benefit value and per capita cost range that was approved by the Contracting Officer as part of the Corrective Action Plan.

4.2 Reports and Information: Benefits

4.2.1 The Contractor shall provide to the Contracting Officer:

- (i) All data requested to be entered into DOE's iBenefits management system (or any successor database) including but not limited to the Compensation and Benefits Report.

4.3 Workers' Compensation

4.3.1 The Contractor, unless workers' compensation coverage is provided through a state funded arrangement or a corporate benefits program, shall submit to the Contracting Officer for approval all new workers' compensation policies and all initial proposals for self-insurance (Contractors shall provide copies to the Contracting Officer of all renewal policies for workers compensation).

4.3.2 Workers' compensation loss income benefit payments when supplemented by other programs (such as salary continuation, short term disability) are to be administered so that the total benefit payments from all sources shall not exceed 100% of employee's net pay.

4.4 Pension Plans

The Contractor will be required to become a sponsor of the existing pension plans and other Post Retirement Benefit Plans (PRB), as applicable, with responsibility for management and administration of the plans, including maintaining the qualified status of those plans. The Contractor shall carry over the length of service credit and leave balances for Incumbent Employees accrued as of the date of the Base Period.

For cost allocability and reimbursement purposes, any defined benefit (DB) or defined contribution (DC) pension plans established by the Contractor and any DB or DC plans for which the Contractor assumes sponsorship upon the start of the Base Period, shall be maintained consistent with the requirements of the Internal Revenue Code (IRC), Employee Retirement Income Security Act of 1974 as amended (ERISA) and any other applicable laws.

4.4.1 Any pension plan maintained by the Contractor, for which NNSA reimburses costs, shall be maintained as a separate pension plan distinct from any other

pension plan which provides credit for service not performed under this Contract. Each Contractor pension plan shall be subjected to a limited-scope audit annually that satisfies the requirements of Employee Retirement Income Security Act (ERISA) section 103, except that every third year the Contractor shall conduct a full-scope audit satisfying ERISA section 103. Alternatively, the Contractor may conduct a full-scope audit satisfying ERISA section 103 annually. In all cases, the Contractor shall submit the audit results to the Contracting Officer within 30 days from the completion of the audit. In years in which a limited scope audit is conducted, the Contractor shall provide the Contracting Officer with a copy of the qualified trustee or custodian's certification regarding the investment information that provides the basis for the plan sponsor to satisfy reporting requirements under ERISA section 104.

4.4.2 The Contractor will be reimbursed for pension contributions in the amounts necessary to ensure that the plans are funded to meet the annual minimum required contribution under ERISA, as amended. If an additional pension contribution over and above the minimum required contribution would have the effect of avoiding benefit restrictions to DB plan participants, the Contractor shall notify the Contracting Officer at least 60 days prior to the date the payment would be due. Reimbursement above the annual ERISA required minimum contribution will require prior approval of the Contracting Officer. The Contracting Officer will take into consideration all pre-funding balances and funding standard carryover balances when evaluating whether to approve reimbursement above the minimum required contribution. The timing and amount of contributions to the plan will be made to satisfy the Section 430 of the Internal Revenue Code and Section 302 of ERISA and avoiding any penalties associated with contributions made after a required installment date.

4.4.3 The Contractor shall obtain the Contracting Officer's advance written approval for any proposed changes to DB and/or DC plans that are not required by law and that may increase costs and/or liabilities. The Contractor shall submit the proposal at least 60 days prior to the proposed effective date of the change(s). In addition, any proposed special programs (including, but not limited to, plan-loan features, employee contribution refunds, or ancillary benefits) shall be submitted to the Contracting Officer for prior approval with an analysis of the impact of special programs on the actuarial accrued liabilities of the pension plan, and on relative benefit value, or cost per capita, if applicable. The analysis should also describe the potential impact on the plan's qualified status at present and the potential impact of the special programs on the qualified status through the duration of the Contract.

4.4.3.1 For proposed changes to DB and DC plans that are not mandated by law and which increase plan costs and/or liabilities, the Contractor shall provide the following to the Contracting Officer:

- (i) A clean copy of the current plan document (as conformed to show all prior plan amendments), with the proposed changes identified using redlines/strikeouts;
- (ii) An analysis of the impact of any proposed changes on actuarial accrued liabilities and an analysis of relative benefit value and a cost study index;
- (iii) Except in circumstances where the Contracting Officer indicates that it is unnecessary, a legal explanation of the proposed changes from the Contractor's legal counsel for purposes of compliance with all legal requirements applicable to private sector DB/DC pension plans;
- (iv) The Summary Plan Description; and
- (v) Any such additional information as requested by the Contracting Officer.

4.4.3.2 When changes to DB and/or DC plans are required by law, or the changes do not increase costs or liabilities under the plan(s), the Contractor must provide a copy of the current plan document (as conformed to show all prior plan amendments), with the proposed new amendment indicated in redline/strikeout no later than 60 days before the new amendment is proposed to take effect.

4.4.4 When operations at a designated NNSA facility are terminated and no further work is to occur under the Contract, the following apply:

4.4.4.1 No further benefits for service shall accrue;

4.4.4.2 The Contractor shall provide a determination statement in its settlement proposal, defining and identifying all liabilities and assets attributable to the NNSA Contract;

4.4.4.3 The Contractor shall base its DB pension liabilities attributable to NNSA Contract work on the market value of annuities or dispose of such liabilities through a competitive purchase of annuities. The Contractor, as pension plan sponsor, must adhere to Department of Labor guidance set forth at 29 CFR 2509.95-1 regarding selection of an annuity provider for the purpose of benefit distributions from a DB pension plan;

4.4.4.4 Assets shall be determined using the "accrual-basis market value" on the date of termination of operations.

4.4.4.5 The Contracting Officer and the Contractor shall establish an effective date for spinoff or plan termination. On the same day as the Contractor notifies the IRS of the spinoff or plan termination, all NNSA assets assigned to a spun-off or terminating plan shall be placed in a low-risk liability matching portfolio until the successor trustee, or an insurance company, is able to assume stewardship of those assets. The portfolio shall be rated no lower than Standard & Poor's "AA."

4.4.5 Terminating Plans

4.4.5.1 If the Contractor seeks to terminate any pension plan during the term of the Contract, the Contractor must obtain Contracting Officer approval for such termination. In addition, a Contractor proposal to terminate a pension plan must be provided to the Contracting Officer no later than 60 days prior to the scheduled date of plan termination.

4.4.5.2 To the extent possible, the Contractor shall satisfy plan liabilities to plan participants by the purchase of annuities through competitive bidding on the open annuity market or through lump sum payouts. The Contractor, as pension plan sponsor, must adhere to Department of Labor guidance set forth at 29 CFR 2509.95-1 regarding selection of an annuity provider for the purpose of benefit distributions from a DB pension plan. With respect to standard plan terminations, the Contractor must adhere to all Pension Benefit Guaranty Corporation regulations regarding the termination of a pension plan.

4.4.5.3 Funds to be paid or transferred to any party as a result of settlements relating to pension plan termination or reassignment shall accrue interest from the effective date of termination or reassignment until the date of payment or transfer.

4.4.5.4 If ERISA or the Internal Revenue Code prevents a full transfer of excess NNSA reimbursed assets from the terminated plan, the Contractor shall pay any deficiency directly to NNSA according to a schedule of payments to be negotiated by the Parties.

4.4.5.5 On the same day as the Contractor notifies the IRS of the plan termination, all NNSA plan assets will be placed in a low-risk liability matching portfolio until full disposition of the terminating plan's liabilities. The portfolio shall be rated no lower than Standard & Poor's "AA."

4.4.5.6 NNSA liability to a commingled pension plan shall not exceed that portion which corresponds to participants' service accrued for their work under an NNSA Contract. The NNSA shall have no other liability to the plan, to the plan sponsor, or to the plan participants.

4.4.5.7 After all liabilities of the plan are satisfied, the Contractor shall return to NNSA an amount equaling the asset reversion from the plan termination and any earnings that accrue on that amount because of a delay in the payment to NNSA. Such amount and such earnings shall be subject to NNSA audit. To affect the purposes of this paragraph, NNSA and the Contractor may stipulate to a schedule of payments.

4.4.6 Post Contract Responsibilities for Pension and Other Benefit Plans

4.4.6.1 If this Contract expires or terminates and NNSA has awarded a Contract under which the new Contractor becomes a sponsor and assumes responsibility for management and administration of the pension or other benefit plans covering active or retired Contractor employees with respect to service, the Contractor shall cooperate and transfer to the new Contractor its responsibility for sponsorship, management, and administration of the plans consistent with direction from the Contracting Officer. If a commingled plan is involved, the Contractor shall:

- (i) Spin off the NNSA portion of any commingled plan that provides benefits for employees working at the NNSA facility into a separate plan. The new plan shall provide benefits similar to those provided by the commingled plan and shall carry with it the NNSA assets on an accrual basis market value, including NNSA assets that have accrued in excess of NNSA liabilities.
- (ii) Bargain in good faith with NNSA or the successor Contractor to determine the assumptions and methods for establishing the liabilities involved in a spinoff. NNSA and the Contractor(s) shall establish an effective date of spinoff. On the same day as the Contractor notifies the IRS of the spinoff, all NNSA plan assets assigned to a spun-off plan shall be placed in a low-risk liability matching portfolio until the successor trustee is able to assume stewardship of those assets. The portfolio shall be rated no lower than Standard & Poor's "AA."

4.4.6.2 If this Contract expires or terminates and NNSA has not awarded a contract to a new Contractor under which the new Contractor becomes a sponsor and assumes responsibility for management and administration of the plans, or if the Contracting Officer determines that the scope of work under the Contract has been completed (any one such event may be deemed by the Contracting Officer to be "Contract

completion” for purposes of this paragraph), whichever is earlier, and notwithstanding any other obligations and requirements concerning expiration or termination elsewhere in this Contract, the following actions shall occur regarding the Contractor’s obligations regarding the plans at the time of Contract completion:

- (i) Subject to paragraph 4.4.6.2 (ii) below, and notwithstanding any legal obligations independent of the Contract that the Contractor may have regarding responsibilities for sponsorship, management, and administration of the plans, the Contractor shall remain the sponsor of the plans, in accordance with applicable legal requirements.
- (ii) The parties shall exercise their best efforts to reach agreement on the Contractor's responsibilities for sponsorship, management and administration of the plans prior to or at the time of Contract completion. However, if the parties have not reached agreement on the Contractor's responsibilities for sponsorship, management and administration of the plans prior to or at the time of Contract completion, unless and until such agreement is reached, the Contractor shall comply with written direction from the Contracting Officer regarding the Contractor's responsibilities for continued provision of pension and welfare benefits under the plans, including but not limited to continued sponsorship of the plans, in accordance with applicable legal requirements. To the extent that the Contractor incurs costs in implementing direction from the Contracting Officer, the Contractor’s costs will be reimbursed pursuant to applicable Contract provisions.

4.4.7 Reports and Information - Retirement Plans

For each DB and DC pension plan as applicable or portion of a pension plan for which NNSA reimburses costs, the Contractor shall provide the Contracting Officer with the following information within ten months of the last day of the current pension plan year except for the Pension Management Plan which must be submitted by January 30 of each year.

- (i) The annual actuarial valuation report for each NNSA-reimbursed pension plan. When a pension plan is commingled, the Contractor shall submit separate reports for NNSA’s portion and the plan total.

- (ii) Copies of IRS Forms 5500 with Schedules for each NNSA-funded pension plan.
- (iii) Copies of all forms in the 5300 series submitted to the IRS that document the establishment, amendment, termination, spin-off, or merger of a plan submitted to the IRS.

4.5 Pension Management Plan

No later than January 31 of each applicable year, the Contractor shall submit a plan for management and administration (Pension Management Plan) via iBenefits for each defined benefit pension plan (DB Plan) consistent with the terms of the Contract. The PMP shall include the DB plans' projected assets, projected liabilities, and estimated contributions and the prior year's actuarial valuation report. A full description of the necessary reporting will be provided in the annual management plan data request. Within sixty (60) days after the date of the submission, appropriate Contractor representatives shall participate in a conference call to discuss the Contractor's PMP submission and any other current plan issues or concerns.

5.0 LABOR RELATIONS

- (i) The Contractor shall comply with the National Labor Relations Act, DEAR Subpart 970.2201, and all applicable Federal and State labor laws.
- (ii) No later than 60 days before the commencement of bargaining, the Contractor shall provide to the Contracting Officer in writing 1) the proposed changes to the current collective bargaining agreement that will increase costs over and above the current collective bargaining agreement costs; 2) the proposed savings to the current collective bargaining agreement; and 3) the dollar amounts associated with the proposed changes to reflect a total cost and total net cost (or savings). Cost increase figures shall be provided for each of the following distinct categories: wages, health benefits, retirement benefits and all other benefits that increase costs under the existing collective bargaining agreement. To the extent that wage increases are proposed, provide upon request the full financial impact of the proposed increases, including but not limited to the impact on overtime and shift differential costs and overhead burden amounts associated with the proposed cost increases over the life of the collective bargaining agreement.

The Contractor will provide regional wage survey information, Benefits Value study information, Cost Study information and any other information to support the collective bargaining cost figures set forth in the Contractor's proposal no later than 60 days prior to the commencement of bargaining.

Prior to the commencement of collective bargaining, the Contracting Officer will communicate to the Contractor the total approved, aggregate cost ceiling for the cost associated with the successor collective bargaining agreement.

Once the aggregate threshold is determined and provided to the Contractor, no further approval of economic parameters is required unless 1) the changes would exceed the aggregate figure or 2) the changes proposed are contrary to Departmental policy or written instructions. To the extent the Contractor assumes savings from new negotiation positions not set forth in the Contractor's initial cost proposal, the Contractor must notify the Contracting Officer of such assumed savings by no later than 15 days after the collective bargaining agreement is executed.

- (iii) The Contractor shall provide an electronic copy of the bargaining agreement to the Contracting Officer 30 days after formal ratification. The Contractor shall provide the "Report of Settlement" 30 days after formal ratification using the Work Force Information System (WFIS). The Contractor shall provide information requested by the Contractor Officer regarding ratified collective bargaining agreements to which the Contract is a party. The Contract shall enter information, including but not limited to the executed collective bargaining agreements, into the iBenefits system (or any successor database) quarterly, or upon Contracting Officer request.
- (iv) The Contractor shall notify the Contracting Officer in a timely fashion of labor relations issues that may cause a significant impact to the workforce.
- (v) The Contractor shall immediately (within twenty-four hours) advise the Contracting Officer of the following:
 - (A) Possible strike situations or other actions affecting the continuity of operations including work stoppages and picketing;
 - (B) Formal action by the National Labor Relations Board (NLRB) including but not limited to issuance of a complaint against the Contractor. Copies of complaints, settlement agreements, judgments and any other documents issued in connection with Contractor actions with respect to labor practices shall be provided to the Contracting Officer;
 - (C) Recourse to procedures under the Labor-Management Relations Act of 1947 as amended or any other state law;
 - (D) Any grievance scheduled for arbitration under any collective bargaining agreement that has the potential for significant economic or other impact as well as the decision of the arbitrator; and
 - (E) Other significant issues that may involve review by other federal or state agencies.

6.0 WORKFORCE PLANNING

In carrying out the work under this Contract, the Contractor shall be responsible for the employment of all professional, technical, skilled and unskilled personnel engaged by the

Contractor in the work hereunder, and for the training of personnel. Persons employed by the Contractor shall be and remain employees of the Contractor and shall not be deemed employees of the NNSA or the Government. Nothing herein shall require the establishment of any employer-employee relationship between the Contractor and consultants or others whose services are utilized by the Contractor for the work hereunder.

6.1 Workforce Planning General

The Contractor shall annually analyze workforce requirements consistent with current and future mission requirements and develop appropriate workforce transition strategies to ensure appropriate skills are available at the right time, in the right number, in the right place. Particular attention shall be paid to current and future critical skills. This analysis shall be available for review upon Contracting Officer request.

6.2 Reductions in Contractor Employment – Workforce Restructuring

6.2.1 Voluntary Separations

In order to minimize the number of involuntary separations and mitigate the impact on affected employees, in consultation with the Contracting Officer the Contractor shall consider the use of a Voluntary Separation Program (VSP) before consideration is given to conducting an Involuntary Separation Program (ISP) when workforce restructuring is necessary. The Contractor shall submit the VSP to the Contracting Officer for approval prior to implementation regardless of the number of employees involved. Prior approval of a VSP by the Contracting Officer is required for any such costs to be considered to be allowable.

6.2.2 Involuntary Reductions in Contractor Employment

6.2.2.1 If the restructuring involves between 10-99 employees in a rolling twelve month period, the Contractor shall notify the Contracting Officer no later than 15 days in advance of the action.

6.2.2.2 For restructuring actions that involve separating between 50-99 employees, the Contractor shall prepare a specific workforce restructuring plan and submit the plan to the Contracting Officer for informational purposes. The workforce restructuring plan must include: the rationale for the proposed separations, costs, timelines for notifications, the job classifications of the Contractor employees involved, numbers of impacted employees and any other information specified by the Contracting Officer. In addition, the Contractor shall perform an adverse impact analysis and provide a copy of the analysis to the NNSA Field Counsel for any restructuring actions that involve 50 or more employees within a 12-month period.

6.2.2.3 If the restructuring may involve the separation of 100 or more employees within a 12-month period, the Contractor shall submit a specific workforce restructuring plan for approval by the Contracting

Officer, to enable compliance with Section 3161 of the National Defense Authorization Act for Fiscal Year 1993 at a minimum, no later than 90 days in advance of the date the Contractor needs to begin notification to employees in accordance with the law and its attendant timeframes to effect the separations.

- 6.2.2.4** All notifications to the NNSA regarding contractor workforce restructuring must contain the rationale for the proposed separations, costs, timelines for notifications, the job classifications of the Contractor employees involved and the numbers of impacted employees.
- 6.2.2.5** The Contractor may submit a multi-year workforce restructuring plan for consideration and approval.
- 6.2.2.6** Any payment of separation benefits beyond those already approved under the Contract must be approved by the Contracting Officer.

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