Statement of Secretary Rick Perry
U.S. Department of Energy
Before the
Senate Committee on Armed Services

March 22, 2018

Chairman McCain, Ranking Member Reed, and Members of the Committee, it is an honor to appear before you on behalf of the Administration and the Department of Energy ("the Department" or "DOE"). I appreciate the Committee's strong support for DOE's enduring national security and environmental management missions and the opportunity to testify in support of the President's budget request for fiscal year (FY) 2019.

Since my confirmation a little over a year ago, two of my highest priorities have been to refocus the Department on restoring the nuclear security enterprise and enhancing national security through the military application of nuclear science, while also addressing the issue of legacy management and nuclear waste.

While DOE is making solid progress, there still is much to be accomplished. We live in an evolving international security environment that is more complex and demanding than any since the end of the Cold War, which necessitates a strong national commitment to maintain modern and effective nuclear forces and infrastructure. To remain effective, it is critical that we modernize and recapitalize our nuclear forces.

The U.S. nuclear deterrent has been the cornerstone of the United States' strategy to keep the American people safe and secure for more than 70 years, as well as a significant contributor to global stability. U.S. nuclear capabilities make critical contributions to one of our nation's highest priorities, the deterrence of nuclear and non-nuclear aggression.

The Department's enduring national security and environmental management missions are accomplished through the hard work and dedication of the highly-skilled men and women of the National Nuclear Security Administration (NNSA) and Office of Environmental Management (EM). NNSA is responsible for: maintaining the safety, security, reliability, and effectiveness of the nuclear weapons stockpile; reducing the threat of nuclear proliferation and nuclear terrorism around the world; and providing nuclear propulsion for the U.S. Navy's fleet of aircraft carriers and submarines. The mission of EM is the safe cleanup of the environmental legacy of five decades of nuclear weapons development and government-sponsored nuclear energy research.

NNSA achieves its critical mission, in part, through a robust, healthy partnership with DOE's National Laboratories. There is close collaboration between the national laboratories and NNSA on several fronts including supercomputers, cybersecurity, and basic science, which help advance nuclear deterrence, naval reactors, and nonproliferation missions.

In addition, the Department works jointly with the Department of Defense (DOD) through the Nuclear Weapons Council (NWC), which serves as the focal point for interagency activities to maintain the U.S. nuclear weapons stockpile. DOE's partnership with DOD ensures that our

deterrent is modern, robust, flexible, resilient, ready, and appropriately tailored to deter 21st century threats and reassure our allies and partners. In this partnership, DOE provides the weapons and DOD provides the delivery systems. DOE/NNSA oversees the research, development, test, assessment, and production programs that respond to DOD's military requirements.

ACCOMPLISHMENTS IN THE PAST YEAR:

Thanks to strong support from the Administration and Congress, over the past year, DOE has seen a move toward increased investment in its nuclear security mission. From flight qualification tests of the B61-12 in the Nevada desert, to the removal of highly enriched uranium (HEU) in Ghana and Kazakhstan, to the commissioning of a new class of nuclear-powered aircraft carrier, DOE has lent its world-class expertise to the military application of nuclear science to help keep the United States safe and secure. Here are a few examples:

- Last year, NNSA continued to maintain the safety, security, and effectiveness of nuclear weapons through the Stockpile Stewardship Program (SSP), enabling the Secretary of Defense and me to certify to the President once again the reliability of the nuclear weapons stockpile.

- In November 2017, NNSA published the Fiscal Year 2018 Stockpile Stewardship and Management Plan (SSMP), a detailed report on the programs, scientific tools, capabilities, and infrastructure necessary to ensure the success of NNSA's nuclear weapons mission well into the future.

- Throughout the year, NNSA actively participated in the recently released Nuclear Posture Review (NPR). The NPR was directed by the President and led by the Department of Defense to ensure that America's nuclear deterrent is modern, robust, flexible, resilient, ready, and appropriately tailored to deter 21st century threats and reassure our allies and partners.

- The Uranium Processing Facility (UPF) project continues to make timely progress with the recent completion of the Site Infrastructure and Services subproject, two months ahead of schedule and $18 million under budget. Of the five remaining subprojects, two are underway and the final three will begin later this year. The Department is committed to delivering UPF by 2025 for no more than $6.5 billion, assuming stable funding through the duration of the project.

- Working with the State of Missouri, NNSA transferred excess federal property at the Bannister Federal Complex in Kansas City to private developers. The transfer will save taxpayers hundreds of millions of dollars and will lead to further community development.

- NNSA partnered with the Institute of Nuclear Physics (INP) in Kazakhstan to remove its remaining HEU. NNSA has helped remove or down-blend 200 kilograms of Russian-origin HEU from the INP, enough for eight nuclear weapons.

- EM realized a significant accomplishment with resumption of waste shipments and emplacement at the Waste Isolation Pilot Plant (WIPP) in New Mexico. WIPP received approximately 130 shipments from April 2017 through December 2017.

BUILDING A STRATEGIC CAPABILITY

DOE is building on the previous year's achievements with new activities tailored to 21st century threats. With the recent release of the 2018 NPR and the President's National Security Strategy, we are laying the foundation for strategic capabilities that will enable us to fulfill our national security and environmental management missions.

The 2018 NPR reaffirmed the findings of previous reviews that the nuclear triad – comprised of silo-based intercontinental ballistic missiles, bomber aircraft, and nuclear submarines – is the most strategically sound means of ensuring nuclear deterrence. To remain effective, however, we must recapitalize our Cold War legacy nuclear deterrence forces, continuing a modernization program initiated during the previous Administration.

The NPR considers the path ahead for the U.S. nuclear strategy and posture over the longer term, and states that we will pursue initiatives to ensure the necessary capability, capacity, and responsiveness of the nuclear weapons infrastructure and the needed skills of the nuclear enterprise workforce. We will continue to work with DOD to determine the resources, time, and funding required to address policies laid out in the NPR, including the potential low yield ballistic missile warhead, sea launched cruise missile, and B83-1 gravity bomb. NNSA will work with Congress to ensure that the program of work is properly authorized and funded.

MODERNIZING OUR NUCLEAR FORCES:

The Department is modernizing our nuclear enterprise to ensure that we have the scientific, engineering, and manufacturing capabilities necessary to maintain an effective and safe nuclear triad and respond to future national security threats.

Unique, state-of-the-art capabilities for research, development, testing, evaluation, and production enable this critical effort. In coordination with DOD, we have fully integrated the scope, budgets, and schedules of the life extension programs (LEPs), infrastructure modernization, and nuclear delivery systems.

We are making significant progress in the full set of LEPs while remaining aligned with the DOD through the NWC.

- ***W76-1 LEP***: The $113.9 million requested for the W76-1 LEP directly supports the sea-based leg of the nuclear triad by extending the service life of the original W76-0 warhead. With continued funding, the W76-1 LEP will remain on schedule and on budget to complete production in FY 2019. The W76-1 will have an extended life of approximately 30 years.

- ***B61-12 LEP***: NNSA continues to make progress on the B61-12 LEP that will consolidate four variants of the B61 gravity bomb. This LEP which is in the Production and Engineering Phase, will meet military requirements for reliability, service-life, field maintenance, safety, and use control while also addressing multiple components nearing end of life in this oldest nuclear weapon in the stockpile. NNSA will remain on schedule to deliver the First Production Unit (FPU) of the B61-12 in FY 2020.

- ***W88 Alteration 370 Program***: Currently in the Production Engineering Phase, the W88 Alt 370 is on schedule, with FPU planned in December 2019. The budget request for this program, which also supports the sea-based leg of the nuclear triad, is $304.2 million in FY 2019.

- ***W80-4 LEP***: The current air-launched cruise missile delivers a W80 warhead first deployed in 1982. Both the missile and the warhead are well past their planned end of life. To maintain this vital deterrent capability, NNSA, in close coordination with DOD, has requested $654.8 million in FY 2019, an increase of $255.7 million, or 64.1% over the FY 2018 request to extend the W80 warhead, through the W80-4 LEP, for use in the Air Force's Long Range Stand-Off (LRSO) cruise missile.

- ***W78 Replacement Program:*** The W78 replacement program will replace one of the oldest warheads in the stockpile, and provide improved warhead security, safety, and use control. To replace the W78 warhead, NNSA has requested $53.0 million to support the scheduled restart of the feasibility study and design options work suspended in 2014.

RECAPITALIZING OUR COLD WAR ERA INFRASTRUCTURE:

DOE/NNSA's diverse national security missions depend on its extensive, complex, and in many cases antiquated infrastructure. More than half of NNSA's facilities are over 40 years old, roughly 30% date back to the Manhattan Project era, and nearly two-thirds are rated as less than adequate to meet mission needs. NNSA is long overdue to build a modern, safe, streamlined complex that will meet mission requirements, keep the deterrent safe, secure, and effective, and enhance employee and public safety. We cannot accept this risk in an uncertain and evolving global security atmosphere.

As reaffirmed in the NPR, an effective, responsive, and resilient nuclear weapons infrastructure is essential to the U.S. capacity to adapt flexibly to shifting requirements. Such an infrastructure will offer tangible evidence to both allies and potential adversaries of U.S. nuclear weapons capabilities and can help deter, assure, hedge against adverse developments, and discourage adversary interest in arms competition. These investments will include:

- An enduring capability and capacity to produce plutonium pits at a rate of no fewer than 80 pits per year by 2030. A delay would result in the need for a higher rate of pit production at higher cost.

- Reconstituting the U.S. capability to produce lithium compounds that are sufficient to meet military requirements.

- Fully funding the UPF and ensuring availability of sufficient low-enriched uranium and the necessary reactor capacity to produce an adequate supply of tritium.

- The full capability to develop and manufacture secure, trusted strategic radiation-hardened microelectronic systems beyond 2025 to support nuclear weapon modernization.

- Pursuing the Stockpile Responsiveness Program established by Congress will expand opportunities for young scientists and engineers to advance warhead design, development, and production skills.

In 2015, NNSA developed new methods to prioritize investments to improve infrastructure. With support from Congress, it successfully halted the growth of deferred maintenance in FY 2016 and 2017 for the first time in nearly a decade. NNSA is implementing innovative management tools that are data-driven and risk-informed, and are creating a science-based infrastructure stewardship approach to change the way NNSA manages infrastructure.

EM's FY 2019 budget request includes $150 million to continue decontamination and decommissioning of selected high-risk facilities not currently in the EM portfolio at the Y-12 National Security Complex and Lawrence Livermore National Laboratory. Decontamination and decommissioning of these facilities support the national security missions at these sites. DOE's disposition effort will stabilize degraded relatively high risk facilities, characterize their hazards and conditions, remove hazardous materials, place them in the lowest risk condition possible, and eliminate the risk posed by these facilities demolishing them and disposing of the resulting waste. With a vision to modernize, streamline, and sustain the infrastructure, Department's goal is to maximize the benefits of the resources provided. However, additional improvements are needed to ensure our infrastructure provides the responsiveness and reliability necessary to support evolving mission requirements.

PREVENTING GLOBAL NUCLEAR THREATS:

Effective nuclear non-proliferation and arms control measures can support U.S., allied, and partner security by controlling the spread of nuclear materials and technology; placing limits on the production, stockpiling, and deployment of nuclear weapons; reducing misperception and miscalculation; and avoiding destabilizing nuclear arms competition.

NNSA's Office of Defense Nuclear Nonproliferation (DNN) works with international partners to remove or eliminate vulnerable nuclear material; improve global nuclear security through multilateral and bilateral technical exchanges and training workshops; help prevent the illicit trafficking of nuclear and radiological materials; secure domestic and international civilian buildings containing high-priority radiological material; provide technical reviews of U.S. export license applications; conduct export control training sessions for U.S. enforcement agencies and international partners; strengthen the International Atomic Energy Agency's ability to detect and deter nuclear proliferation; advance U.S. capabilities to monitor arms control treaties and detect foreign nuclear programs; and maintain organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide.

With the release of the NPR, DNN will continue its efforts to 1) minimize the number of nuclear weapons states; 2) deny terrorist organizations access to nuclear weapons and materials; 3) strictly control weapons-useable material, related technology, and expertise; and 4) support the State Department to make sure arms control agreements enhance security, and are verifiable and enforceable.

COUNTERING GLOBAL NUCLEAR THREATS:

NNSA's counterterrorism and counterproliferation program is part of broader U.S. Government efforts to assess the threat of nuclear terrorism and develop technical countermeasures. The scientific knowledge generated by this program underpins the technical expertise for disabling potential nuclear threat devices, including improvised nuclear devices; supports and informs U.S.

nuclear security policy; and guides nuclear counterterrorism and counterproliferation efforts, including interagency nuclear forensics and contingency planning.

Nuclear counterterrorism and counterproliferation provides a flexible, efficient, and effective response capability for any nuclear/radiological incident in the United States or abroad by applying the unique technical expertise across NNSA's nuclear security enterprise. Appropriately trained personnel and specialized technical equipment are ready to deploy in order to provide an integrated response for radiological search, render safe, and consequence management for nuclear/radiological emergencies, national exercises, and security operations for large National Security Special Events.

The Office of Counterterrorism and Counterproliferation (CTCP) maintains an operational nuclear forensics capability for pre-detonation device disassembly and examination, provides operational support for post-detonation assessment, and coordinates the analysis of special nuclear materials. Readiness is maintained to deploy device disposition and device assessment teams, conduct laboratory operations in support of analysis of bulk actinide forensics, and deploy subject matter expertise and operational capabilities in support of ground sample collections that contribute to conclusions in support of attribution.

With the release of the NPR, the United States will continue to hold fully accountable any state, terrorist group, or other non-state actor that supports or enables terrorist efforts to obtain or employ nuclear devices. CTCP will strive, under a multilayered approach, to counter terrorist efforts to acquire, transfer, or employ nuclear weapons, material, technology, and expertise.

MOVING FORWARD WITH NEW SCIENTIFIC ADVANCEMENTS:

Science underpins everything we do, including our core responsibility to certify the safety, security, and effectiveness of the nuclear stockpile in the absence of nuclear explosive testing. DOE's world-class research, development, testing, and engineering are the key to this success. Through the science-based Stockpile Stewardship Management Program, we are fielding a suite of innovative experimental platforms, diagnostic equipment, supercomputers, and modern codes that build on past nuclear explosive test data to simulate the dynamics of nuclear weapons.

With the Department as a world leader in computational capability, and four of the ten fastest supercomputers in the world located in NNSA's laboratories, it is clear that high performing computers (HPCs) are a critical component of the national security, energy, and science missions of the Department of Energy. Over the past six decades, U.S. computing capabilities have been maintained through continuous research and development and the deployment of new computing systems, with rapidly increasing performance on applications of major significance to government, industry, and academia. Maximizing the benefits of high performance computing in the coming decades will require an effective national response to increasing demands for computing power, emerging HPC technological challenges and opportunities, and growing economic dependency on and competition with other nations.

In 2016, DOE initiated research and development activities designed to deliver an exascale (high speed) computing capability by the mid-2020s. The Department's Office of Science and NNSA are jointly responsible for executing a program that focuses on advanced simulation through a

capable exascale computing program, with an emphasis on sustained performance on science and national security mission applications and increased convergence between exascale and large-data analytic computing.

To maintain the safety, security, and effectiveness of the Nation's nuclear deterrent, DOE/NNSA requires a trusted supply of strategic radiation-hardened advanced microelectronics (broadly defined), including R&D capabilities. The supply chain for nuclear weapon microelectronics must meet formal standards of trust to protect against the potential for sabotage, malicious introduction of an unwanted function, or subversion of a function without detection. The Microsystems Science & Technology Center at Sandia National Laboratories produces custom, strategic, radiation-hardened microelectronics for nuclear weapons. NNSA is examining options to extend the life of the Silicon Fabrication facility at Sandia beyond 2025 to help meet microelectronics requirements.

To ensure a diversified supply chain and provide risk reduction, NNSA intends to fund a demonstration project to produce R&D microsystems at the DOD-owned fabrication facility at Massachusetts Institute of Technology's Lincoln Laboratory (MIT/LL) to validate the production of radiation-hardened electronics at 90 nm. This investment would provide contingency and R&D options to NNSA, and would be conducted in collaboration with Sandia National Laboratories.

Additive Manufacturing (AM) uses the three-dimensional printing of polymers and metals to shorten production schedules and design cycles for a variety of applications. To date, the use of additive manufacturing has provided multi-million-dollar cost benefits and significant schedule risk reduction in utilizing AM for tools, fixtures, and molds in NNSA's ongoing major modernization efforts, as well as the testing and evaluation programs. NNSA is continuing to develop and mature this technology to expand its applications to the NNSA mission where appropriate. Ultimately, NNSA's goal for AM is to exploit its capability for rapid response to emerging threats while significantly shrinking the footprint and time required for manufacturing. While working to achieve this long-term objective, NNSA is actively using additive manufacturing to supplement our existing manufacturing capabilities in order to increase our research, development and manufacturing flexibility for the benefit of our nation's nuclear deterrent.

Cybersecurity is a high priority of the current Administration and the Department. The NNSA Stockpile Stewardship Management Plan calls for a strong cybersecurity program that implements a flexible, comprehensive information technology and cybersecurity system to ensure the protection of NNSA's classified and sensitive information assets related to the nuclear weapons stockpile. Adequate funding is crucial to managing cybersecurity risks across the nuclear security enterprise. NNSA will need to explore how technologies such as quantum computing and additive manufacturing influence the cyber threat landscape and manage risk accordingly. Conversely, NNSA will also need to explore how these technologies can be leveraged to combat cyber threats.

RESPONSIBLE STEWARDSHIP OF THE ENVIRONMENT

The government's nuclear weapons and nuclear energy research programs made significant contributions to our nation's defense. The Office of Environmental Management (EM) is tasked with the disposition of radioactive wastes; the management of spent nuclear fuel and special nuclear material; the cleanup of contaminated soil and water; and the decontamination and

decommissioning of thousands of excess facilities. Since 1989, the federal government's investment in EM has resulted in a reduced risk that these materials and excess facilities may pose to the American people and the environment.

EM has completed cleanup activities at 91 sites across 30 states – with cleanup work remaining at 16 sites across 11 states. The remaining work is complex and challenging, and accomplishing the Department's cleanup goals will mean applying innovative strategies to one-of-a-kind challenges while ensuring the work is safely completed.

In 2017, EM made significant progress including the following:

- At WIPP, waste emplacement resumed and, to date, the repository has received more than 12,000 shipments of transuranic (TRU) waste for safe disposal.
- At Hanford, the Department safely and successfully completed remediation of the 618-10 burial ground, as well as continued to make progress on the Waste Treatment and Immobilization Plant.
- At Los Alamos National Laboratory (LANL), workers safely and successfully completed treatment of a set of nitrate salt drums to prepare for disposal of these drums at WIPP.
- Idaho workers completed a near-15-year effort to retrieve ~65,000 m3 of TRU waste.
- At Oak Ridge, the Department broke ground on the Mercury Treatment Facility, which will enable EM to carry out additional cleanup activities at the Y-12 National Security Complex.
- At the Savannah River Site, the Department completed the construction of the 33 million-gallon Saltstone Disposal Unit 6.
-

Over the past year, EM has continued to look for innovative ways to perform its cleanup mission in a safe and efficient manner while serving as a good steward of taxpayer resources.

The EM mission not only addresses cleanup of the environment, but also helps the Department continue its important national security and scientific and energy research missions. The new alignment of the Offices of Science and EM reporting to the Under Secretary for Science will add momentum to environmental cleanup. By further leveraging the expertise of the DOE National Laboratories, and exploring various Science and EM project management and contract approaches, the Department hopes to manage costs better and solve environmental management challenges, while ensuring the highest level of safety for Federal and contractor employees, the public, and protection of the environment.

Workforce Safety

DOE and EM are committed to ensuring the safety of our workforce, the public and protection of the environment. Safety is the top priority for the Office of Environmental Management. I am proud to say that EM has a lower rate of worker accident-related statistics than the Department of Energy as a whole and industries that perform similar work. We are also strongly committed to a workplace where all workers --- federal and contractor – are free to speak out, voice concerns or lodge complaints without fear of retaliation.

Project Management

The processes the Department has established for capital asset projects continue to mature and have brought significant improvements to the rigor and consistency in how EM oversees management of capital projects.

In 2017, the Project Management Institute (PMI) also recognized EM's track record of success. At Hanford, PMI recognized the AY-102 tank recovery effort as its international project of the year after the site completed work ahead of schedule and $8.7 million under budget. PMI also recognized the Savannah River Site's successful eighth underground liquid tank waste closure.

Regulatory-Cleanup Commitments

Generally, EM has worked successfully with state and Federal regulators in negotiating, updating and improving compliance agreements. The Department is actively working to meet its commitments. To the extent that milestones are delayed, DOE will follow the provisions in its cleanup agreements for making notifications and working with federal and state regulators regarding schedule adjustments if necessary.

REQUIREMENT AND RETENTION OF HIGHLY QUALIFIED PEOPLE

The Departments greatest asset will always be its workforce. DOE's challenging national security missions require it to recruit, train, and retain highly skilled and dedicated federal employees and Management and Operating (M&O) workforce. DOE and Congress must continue to provide these highly-talented men and women with the tools necessary to support their work as they carry out complex and challenging responsibilities.

The government-wide security clearance backlog is particularly acute at NNSA, where over 3,500 current employees are awaiting completion of their initial investigations and are unable to perform the duties for which they were hired. This number includes over 30 individuals designated as mission critical. NNSA has undertaken several measures to mitigate the impact of these delays and is working with the National Background Investigation Bureau to expedite mission-critical background investigations. However, more needs to be done. This backlog is making it difficult to recruit the technical talent we need in our highly classified programs essential to DOE/NNSA missions.

A skilled federal workforce is required for appropriate program and project oversight as NNSA enters the next phase of nuclear modernization efforts, including LEPs and major infrastructure project management. However, as of February 2018, NNSA on-board staffing levels were 10% lower than FY 2010 Full Time Equivalent (FTE) levels, while funding increased 50% in the same period for Weapons Activities and Defense Nuclear Nonproliferation, primarily for the nuclear modernization program. To help manage growing program requirements, NNSA's FY 2019 request includes funding for additional federal FTEs.

Succession planning is an important part of NNSA workforce planning, since 44% of the current NNSA workforce will be eligible to retire by FY 2023. Thus, NNSA uses career developmental initiatives such as the NNSA Graduate Fellowship Program, and the U.S. Office of Personnel Management (OPM) Pathways and Presidential Management Fellows programs to recruit, hire, and retain the federal workforce needed for the NNSA national security mission. Working with

OPM experts, NNSA is developing a Human Capital Management Plan that will institutionalize a consistent staffing analysis and career development methodology to support NNSA's mission and address projected retirements.

FY 2019 BUDGET REQUEST

The President's budget for FY 2019 requests $30.6 billion for the Department of Energy to advance U.S. national security and economic growth through transformative science and technology innovation that promotes affordable and reliable energy through market solutions and meets our nuclear security and environmental cleanup challenges. The FY 2019 budget request provides: $15.1 billion to modernize and restore the nuclear security enterprise, a $2.2 billion increase over FY 2017 enacted levels, which makes necessary investments consistent with the NPR and National Security Strategy; and, $6.6 billion to continue our commitment to cleaning up the Cold War nuclear legacy.

This budget request demonstrates the Administration's strong support for NNSA and EM. Decades of underfunding has left the nuclear security enterprise's infrastructure in a brittle state that requires significant and sustained investments over the next decade to correct. There is no margin for further delay in modernizing NNSA's scientific, technical, and engineering capabilities, and recapitalizing our infrastructure needed to produce strategic materials and components for U.S. nuclear weapons.

The FY 2019 budget request for NNSA's Infrastructure and Operations is $3.0 billion, an increase of $199.6 million, or 7.1% above the FY 2018 request. The request provides funding to sustain, operate, and modernize the NNSA enterprise. The FY 2018 National Defense Authorization Act provided NNSA and its M&O partners with added flexibility to address the challenges of modernizing the enterprise by increasing the minor construction threshold to $20 million. This reform supports efforts to address deferred maintenance through recapitalization projects that improve the condition and extend the design life of structures, capabilities, and systems to meet NNSA's nuclear weapons and nonproliferation program needs.

The FY 2019 budget request for EM provides the resources to make progress on cleanup activities across the complex. At the Savannah River Site, the request will enable DOE to increase significantly the production of canisters of vitrified high-level waste at the Defense Waste Processing Facility, as well as support planned operation rates for the Salt Waste Processing Facility, and continued construction progress for necessary Saltstone Disposal Units. As a result, Savannah River will be able to build substantially on its record of successfully emptying and closing underground waste tanks.

The WIPP investment the request supports will have wide-ranging benefits across the EM program, with the planned infrastructure improvements at WIPP intended to enable increased TRU waste shipments from other EM sites.

We will continue to make steady progress on those portions of the Hanford Waste Treatment and Immobilization Plant necessary to initiate tank waste treatment through the Direct Feed Low Activity Waste (DFLAW) approach; and complete design and launch site preparations for the Oak Ridge Mercury Treatment Facility, which will help address mercury contamination and aid

in the eventual decontamination and decommissioning of deteriorating facilities at the Y-12 National Security Complex. We also will complete buried waste exhumation at the Idaho National Laboratory and continue with preparations to transfer cesium and strontium capsules at Hanford from wet storage to a dry storage configuration. We will also implement an interim measure to address chromium groundwater contamination at LANL.

PROJECT MANAGEMENT EXECUTION – SAFE QUALITY CONSTRUCTION ON BUDGET:

NNSA is driving continued improvement in contract and project management practices. This includes policies and procedures that employ rigorous analyses of alternatives (AoAs); provide clear lines of authority and accountability for federal and contractor program and project management; and improve cost and schedule performance.

Since 2011, NNSA has delivered its $1.4 billion project portfolio 8% under original budget.

NNSA fosters competition beyond the M&O contractors through "best value acquisition solutions." NNSA's diversified approach allows qualified contractors, other than the traditional M&Os, to compete in fixed price, non-nuclear contracts. Contractors have included the U.S. Army Corps of Engineers, the Tennessee Valley Authority, and others to meet mission requirements when a better value to government was demonstrated. The competition creates motivation among the parties to strive for exceptional performance, operate within budget, and execute on time.

Additional oversight of M&O contractors involves aligning contract structures and incentives with taxpayer interests to encourage further contractor performance. For example, the contract for the TRU Waste Facility at LANL was structured so the contractor could earn more fees if it delivered under budget. Conversely, the contractor could lose all fees and pay for the overrun if the project delivered over budget. This contract model proved successful, and the TRU Waste Facility was the first nuclear facility NNSA delivered under budget. We are using this model at other locations.

A final point on effectively managing and overseeing M&O contractor operations is that NNSA developed a systematic process to conduct independent third-party project peer reviews to ensure that all projects are tracking on budget and schedule. As part of this process, NNSA issued a 90% design policy requiring nuclear projects to achieve final design completion prior to starting construction. NNSA also has issued a Project Management Business Operating Procedure clarifying roles, responsibility, authorities, and accountability for the Programs, Field, and Functional offices across NNSA to ensure stakeholders are aligned to deliver safe quality construction on budget and schedule. Several of these policies and processes were later exported to the Department and codified in DOE Order 413, Program and Project Management for the Acquisition of Capital Assets.

CONCLUSION

DOE's diverse missions are critical to the national security of these United States: maintaining the safety, security, reliability, and effectiveness of the nuclear weapons stockpile; reducing the threat of nuclear proliferation and nuclear terrorism around the world; and providing naval nuclear propulsion to the U.S. Navy's fleet of aircraft carriers and submarines. By investing in our nuclear security enterprise and continuing our efforts to modernize our scientific, technical, and engineering capabilities and infrastructure, the Department will continue to meet its national

security missions while supporting other national and international stakeholders that also use our national assets. We are mindful of our obligation to improve our business practices continually, be responsible stewards of the environment, and use in a responsible manner the resources that Congress and the American people have entrusted to us. The investments in our nuclear security and environmental management missions pay abundant dividends across the DOE mission, and for the American people.