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U.S. Department of Energy

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Chairman Reed, Ranking Member Wicker, and esteemed members of the Committee, thank you for the opportunity to appear before you today on behalf of the Department of Energy (DOE) and the National Nuclear Security Administration (NNSA). We recognize and appreciate the Committee's consistent support for DOE's enduring national security missions.

As the Secretary of Energy and Under Secretary for Nuclear Security, we recognize the unique challenges posed by a deteriorating international environment and remain committed to strengthening our nuclear deterrent while reducing global nuclear and cyber risks, promoting the peaceful use of nuclear technology to combat climate change, strengthening the cybersecurity of our critical energy infrastructure, and engaging in responsible environmental stewardship and cleanup.

The nation's nuclear weapons stockpile remains the cornerstone of our strategic deterrent and a key tool in reassuring our allies. The Department is aware that we have no margin for error and that we must remain committed to our nuclear modernization efforts. This commitment must be paired with further progress on nonproliferation and counterterrorism measures to prevent terrorists from acquiring nuclear and radiological material and expertise. This is especially significant as the global civilian nuclear power sector expands, and new nuclear technologies are introduced as a means of providing secure, clean power and fighting climate change. Additionally, the Department will continue to provide the U.S. Navy's submarines and aircraft carriers with militarily effective nuclear propulsion plants and is looking forward to being an effective contributor to the new trilateral Australia-U.K.-U.S. (AUKUS) partnership.

We are also actively addressing the increasing cyber threat to U.S. energy infrastructure. The recent cyber activity called "Volt Typhoon" conducted by state-sponsored cyber actors from the People's Republic of China (PRC) should alarm all of us. The U.S. government assesses that PRC state-sponsored cyber actors are seeking to pre-position themselves for disruptive or destructive cyberattacks against U.S. critical infrastructure in the event of a major crisis or conflict with the United States.

The FY 2025 Budget reflects the Administration’s commitment to these priorities, allowing the Department to enhance our national security, engage in cleanup from our legacy nuclear activities, and promote American leadership on the safe and peaceful use of clean energy.

NNSA’s Fiscal Year 2025 Budget Overview

The FY25 budget request reflects the urgent demands on the nuclear security enterprise to deliver and adapt while exercising fiscal restraint and increasing efficiency. NNSA’s FY25 budget request is \$25B. The FY25 budget request prioritizes executing the nuclear weapon program of record, including the development of the B61-13, advancing naval nuclear propulsion systems, and revitalizing the infrastructure across the enterprise. In addition, our requested budget supports development and application of emerging technologies such as digital engineering and artificial intelligence (AI) that will increase our efficiency and innovation. The FY25 budget request affirms the Administration’s steadfast commitment to a strong national defense and NNSA’s critical and evolving missions.

Weapons Activities Appropriation

The Weapons Activities FY25 budget request of \$19.8B, supports stockpile management; production modernization; stockpile research, technology, and engineering; infrastructure and operations; defense nuclear security and secure transportation; and information management and cyber security.

Stockpile Management

The Stockpile Management budget request of \$5.14B, supports stockpile modernization, stockpile sustainment, weapons dismantlement, production operations, and nuclear enterprise assurance.

The stockpile modernization program budget request of \$2.84 billion supports six systems in the expanded program of record: B61-12 LEP, B61-13, W88 Alt 370, W87-1, W80-4, and W93. Although SLCM-N is not in the budget request due to the timing of the FY24 NDAA and FY24 budget enactment compared to the development and submittal of the FY25 budget request, NNSA will continue to work with DoD and Congress to assure accordance with FY 2024 NDAA Section 1640.

NNSA has achieved 100% on-time delivery of the W88 Alteration (Alt) 370 Program and B61-12 Life Extension Program (LEP) to DoD. This represents consistent production progress since our announcement of First Production Units (FPU) in FY21 and FY22, respectively.

Starting with the FY24 budget enactment, NNSA began the B61-13 program in response to the decision to strengthen deterrence and assurance by providing the President with additional options against certain harder and large-area military targets. In coordination with DoD, NNSA

will decrease the number of B61-12s built by the number of B61-13s manufactured, resulting in no change to the number of weapons in the stockpile. NNSA appreciates Congress' authorization and appropriation of \$52 million in FY 2024 for the B61-13, allowing us to take advantage of active B61 production capabilities. In FY 2025, the B61-13 program will progress into Phase 6.4, *Production Engineering*, with FPU expected in FY 2026.

The W80-4 warhead for the long-range standoff missile entered Phase 6.4, *Production Engineering*, in FY23 and remains on track for FPU in September 2027, aligned with the Air Force schedule for initial and final operational capability dates.

In FY 2023, the W87-1 entered Phase 6.3, *Development Engineering*, a major milestone. The W87-1 will replace the aging W78 warhead, one of the oldest in the stockpile. The FPU for the W87-1 is currently scheduled for FY31-32. The W87-1 is the first modernized weapon that will have a newly manufactured pit, which will be built at Los Alamos National Laboratory and certified by Lawrence Livermore National Laboratory.

In May 2022, the W93 entered Phase 2, *Feasibility Study and Design Options*, and remains on track for production starting in the mid-2030s. The Nuclear Weapons Council has directed effort to accelerate the W93 FPU and the FY25 budget request supports this effort. The W93 is a new warhead program based on existing designs that will not require new underground nuclear explosive testing. The W93 will meet DoD requirements to enhance operational effectiveness of the U.S. ballistic missile submarine force. The W93 will have new pits produced at Savannah River. The program is being undertaken in parallel with the United Kingdom's Replacement Warhead program continuing our coordination through the U.S.-U.K. Mutual Defense Agreement.

The FY24 NDAA required a SLCM-N as part of NNSA's program of record. As mentioned earlier, NNSA is coordinating with DoD to determine warhead requirements and meet congressional direction for this new program. We will continue to keep Congress informed as program offices in NNSA and the Navy are stood up and requirements are better defined.

In addition to the seven modernization programs mentioned here, NNSA has also requested \$69 million in the Stockpile Research, Technology, and Engineering program to support two "Phase 1" system studies for early exploration of hard and deeply buried target defeat and non-ballistic reentry systems.

In order to continue to increase efficiency and enable future on-time delivery of weapons, NNSA has initiated two efforts: digital engineering and agile product realization. It is our intent to lower the time and cost to deliver a new weapon as we improve our processes and increase the experience level within the enterprise.

The Stockpile Management budget request for Stockpile Sustainment and Production Operations reflects the increased demands of the existing and modernized stockpile efforts. The Nuclear

Enterprise Assurance budget request reflects a response to growing threats associated with cyber and digital advances. NNSA has requested over a 50% increase since FY23 to respond to this growing reality. Lastly, the FY 25 budget request for Weapons Dismantlement balances the needs of the enterprise.

Production Modernization

NNSA's \$5.9B budget request for production modernization reflects disciplined priority decisions in the portfolio and the overall Weapons Activities budget, as well as the availability of carryover to address FY 2025 requirements. The FYNSP includes production modernization budget requests that grow at a faster pace in future years to meet stockpile modernization demands as the program spends down excess carryover, particularly in major projects.

NNSA's highest production modernization priority is re-establishing the capability to produce new plutonium pits that was lost in 1989 when production at Rocky Flats was halted. The pit production plan includes a redesign and refurbishment of Los Alamos plutonium facilities to support a production capacity of 30 pits per year (ppy) while simultaneously establishing the processes to achieve war reserve (WR) qualified pits for the W87-1.

As work continues at Los Alamos, the building designed and constructed to house the Mixed Oxide Fuel Fabrication Facility at Savannah River is being modified and re-purposed to manufacture at least 50 ppy. The W93 pits will be the first manufactured at Savannah River. Although the W87-1 and W93 programs are setting the quantity and schedule of pit production now, other future weapons will also require newly produced pits. Pit production will be needed to support the stockpile as long as nuclear weapons exist.

The FY25 budget request for plutonium modernization is \$2.89B. The request for Los Alamos reflects the use of carryover funding to support increased activity in FY25. The budget request for Savannah River offsets the decreased request for Los Alamos. Additionally, the request for Infrastructure and Operations supports increasing operations and maintenance requirements associated with the pit production mission.

The FY25 \$1.5B budget request for Los Alamos pit production and the associated line-item projects reflects the use of carryover balances and consistent with projected execution rates of the line-item projects.

In FY23, more development pits were produced at Los Alamos than ever before - nine full W87-1 development pit builds, with five more partial builds. Los Alamos is on track to "diamond stamp" the first fully qualified WR pit in the second half of this year. The budget request supports the increased pace of manufacturing work associated with the ramp from FPU to rate production, as well as the increased pace planned for equipment installation. It is expected that

Los Alamos will achieve the minimum capability needed to produce 30 ppy in or near 2028 with increasingly dependable capability attained each year through 2032.

The requests for Savannah River Pit Production and Savannah River Plutonium Processing Facility (SRPPF) sum to \$1.28B. The request for SRPPF supports the increasing pace of work to support completion of construction and turnover to operations in 2032. We thank Congress for the strong support of this critical project. FY23 funding was used for contract awards for the first set of gloveboxes on the critical path for construction, as well as significant early site and building preparation work. FY24 funding will be used for contract awards for additional long-lead critical-path procurements and preparations. SRPPF's Process Design is now 90% complete with the 60% overall project Preliminary Design completion anticipated before the first quarter of FY25.

Last year NNSA committed to generating an updated SRPPF cost and schedule estimate, recognizing that there would be large uncertainties because the 60% design is not yet complete. Savannah River Nuclear Solutions (SRNS) has produced a "bottom-up" cost and schedule estimate based on information that was available near the end of FY23. SRNS estimates turnover to operations will occur in 2032 or 2033, with a total project cost of \$18.5B. NNSA's cost range for Savannah River based on the SRNS estimate, an independent estimate from our Cost Estimating and Project Evaluation (CEPE) office, and our Office of Infrastructure cost review is \$18B-\$25B. These figures represent the macro-level results of the review. The details continue to be refined and will be briefed to the Nuclear Weapons Council in the coming months.

Finally, the successful transition of SRS management to NNSA is important to our efforts on SRPPF. NNSA is working closely with our colleagues at the Department of Energy's Office of Environmental Management, the Savannah River Field Office, the SRNS leadership team, and local stakeholders to ensure a smooth transition.

The NNSA Integrated Master Schedule (NIMS) has been updated and improved as requested by Congress. Additional logic and linkages are included for LAP4, schedules between LAP4 and SRPPF are better integrated, and the paths to FPU and rate production at SRPPF are incorporated. The NIMS contains integrated detailed site schedule logic from Los Alamos, Lawrence Livermore, and the Kansas City National Security Campus (KCNSC) for program scope focused on pit manufacturing and production efforts to attain first production unit at Los Alamos. There is less detail in the schedule for SRPPF projects and the later phases of equipment installation at LAP4 since equipment and system designs for this work are less mature. NIMS will continue to integrate higher fidelity schedule logic for those programs and projects as their designs and schedules mature. The current NIMS makes it an effective management tool for the program and continuous updates will allow NIMS to continue to be an effective tool.

Additionally, NNSA has directed an external review of our Plutonium program by the Advisory Committee for Nuclear Security, a Federal Advisory Committee Act group reporting to the Administrator. The initial report from this committee is expected in May 2024.

Alongside pit production, the Uranium Processing Facility (UPF) at Y-12 is a top priority. The FY25 budget request for UPF is \$800M. We greatly appreciate Congressional actions to support reprogramming in FY23.

The construction of the overall UPF project is now over 60% complete. Gloveboxes are installed in the main process building, and over 97% of all procurements have been delivered. The current focus of work is bulk electrical installation, with over 60 miles of electrical conduit and cable installed in the last half of calendar year (CY) 2023. However, due to a variety of issues, including direct and indirect impacts from COVID, deficiencies in contractor performance and planning, overly optimistic assumptions on productivity, repeated delays on procurements, and funding uncertainties, the most current UPF project cost estimate is \$10.3B and the estimated date for construction completion is late FY 2027 with beginning of operations expected in October 2031.

In addition to making progress on UPF, NNSA is advancing its development of centrifuges and cascades for domestic uranium enrichment and its production of tritium with a FY25 budget request of \$662M.

Other large-scale projects are either starting or moving forward in line with NNSA's weapon modernization and/or safety and security needs. In late CY23, NNSA broke ground on the Lithium Processing Facility (LPF) at Y-12 with construction expected to start in FY26 and a FY25 budget request of \$260M. The High Explosives Science and Engineering facility at Pantex continues construction with a FY25 budget request of \$15M, and the Power Sources Capability at Sandia has a budget request of \$50 million. The Kansas City Non-Nuclear Expansion Transformation (KCNExT), a new real estate acquisition approach to meet NNSA's space needs that will break ground in Summer 2024. KCNExT is critical to increase capacity of the non-nuclear components. Each of these projects is key to modernizing facilities to avoid infrastructure failure and to increase capacity.

NNSA recognizes the FY24 NDAA statutory language for completion of the High Explosives Synthesis, Formulation, and Production Facility (HESFP) at the Pantex Plant, and the Tritium Finishing Facility (TFF) at SRS. Funding for these project schedules was not factored into the FY25 request as NNSA's strategy was to prioritize funding of a reduced number of critical projects, and both HESFP and TFF are of a lower priority.

Science, Research, Technology, and Engineering

The Stockpile Research, Technology, and Engineering (SRT&E) portfolio develops and delivers the tools used every day for design, certification, and assessment of the stockpile without underground nuclear explosive testing; evaluates and accelerates future concepts; improves understanding of weapon response to environmental conditions; and matures technologies for warheads and manufacturing processes. The SRT&E budget supports the infrastructure and workforce to deliver scientific and engineering advances, including both experimental and computational capabilities. The FY25 budget request for SRT&E is \$3.17B.

In FY23 and FY24, Lawrence Livermore repeated its 2022 fusion ignition breakthrough at the National Ignition Facility (NIF) four times, improving gains and achieving a yield of 5.2 MJ in February 2024. We were excited to have the first NNSA Ignition result highlighted by Google as the “most searched breakthrough” in the past 25 years. Also, in In FY23 and FY24, NNSA started significant efforts to mature technologies to manufacture radiation cases, evaluate new explosives formulations, implement AI in science and engineering programs, and establish AI models and testbeds for unclassified and classified work.

The FY25 budget request of \$880M for Advanced Simulation and Computing enables transitioning LANL’s Crossroads system to classified service for weapons assessment and certification, bringing on line the first exaflop computer *El Capitan* at Lawrence Livermore, and expanding the application of Artificial Intelligence to stockpile stewardship.

The FY25 budget request for Inertial Confinement Fusion (ICF) program of \$683M will allow NNSA to address near-term weapons physics challenges and build on its repeated success of reaching fusion ignition in the laboratory. The ICF program gives NNSA experimental access to extreme temperature and pressure regimes characteristic of nuclear weapons to support design, certification, and assessment of the stockpile without resuming underground nuclear explosive testing. NNSA is currently recapitalizing and sustaining existing facilities in line with the ICF 10-Year Facility and Infrastructure Plan delivered to Congress in March 2023. The highly visible successes of the ICF program enhances the deterrent by demonstrating world-leading expertise in high energy density science and technology and providing experimental access to weapons-relevant physical conditions previously unattainable in the laboratory.

The FY25 budget request for Enhanced Capabilities for Subcritical Experiments (ECSE) of \$240M coupled with the \$73M U1a Complex Enhancements Project (UCEP) request will support expansion, construction, and system installations at the Principal Underground Laboratory for Subcritical Experimentation (PULSE) at the Nevada National Security Site. ECSE includes development of the Z-pinch Experimental Underground System (ZEUS) and Advanced Sources Detectors (ASD) Scorpius instruments. Experiments with these tools at PULSE will provide capabilities for system-level plutonium aging experiments at the end of the decade and will provide an important capability to assess system designs for ongoing modernization programs.

Academic Programs and Community Support

The budget request for Academic Programs and Community support is \$128M. It is critical for NNSA to support external mission-relevant research, generate a talent pipeline in key areas of science and engineering, and support our communities. This funding is targeted at workforce needs projected to be the most critical.

Infrastructure and Operations

The NNSA budget request for Infrastructure and Operations is \$3.3B, including \$3.16B for operations and \$144M for a portfolio of smaller infrastructure projects. The Operations request, which includes operations of facilities, safety and environmental operations, maintenance and repair of facilities, and recapitalization, is essential to be able to deliver our stockpile program from our legacy infrastructure base, especially while revitalization and new construction are underway. As noted above, significant investments in both operations of facilities and maintenance and repair of facilities are tied to increased requirements associated with plutonium pit production. The Operations request also reflects the transition of management of the Savannah River Site from Environmental Management to NNSA. Funding throughout operations of facilities, maintenance and repair of facilities, and recapitalization is critical to ensure that NNSA can transition SRS to an enduring mission site to support pit production and the broader nuclear modernization program. Additionally, \$240M of the \$778M requested for Recapitalization will fund the second phase of KCNEXT, including real estate acquisition of the first manufacturing facility in the KCNEXT portfolio.

NNSA continues to innovate on mission-enabling construction of commercial-like projects to save time and taxpayer dollars while upgrading key capabilities. In CY23, NNSA successfully completed the final three projects initiated under the 2019 Enhanced Minor Construction and Commercial Standards (EMC²) pilot project: new emergency operations centers at Y-12 and Sandia National Laboratories and a new fire station at Y-12. NNSA experienced up to a 30% cost avoidance on these pilot projects. In August 2023, NNSA established a new policy institutionalizing the streamlined oversight and management practices from EMC² for line-item construction projects up to \$100M, opening the door for future cost and time savings in smaller-scale non-nuclear construction.

To better understand, synchronize, and communicate the enterprise's infrastructure needs, NNSA is developing an Enterprise Blueprint. The Blueprint will describe in detail the facilities needed across the enterprise and their ties to mission needs. This will help reinforce NNSA's underlying philosophy of responsiveness, flexibility, and resiliency required to meet dynamic demands. A fully developed Enterprise Blueprint is expected in the latter half of 2024. The Blueprint will guide future investment priorities and budget requests.

Defense Nuclear Security and Secure Transportation

The FY25 budget request of \$1.18B for Defense Nuclear Security reflects both the transition of responsibility for safeguards and security at the Savannah River Site from EM to NNSA, as well

as the need to keep pace with new threats, particularly uncrewed aerial systems. The budget request also includes funding for the West End Protected Area Reduction (WEPAR) project. NNSA is transitioning to a next-generation counter uncrewed aerial system (CUAS) that will employ an open architecture systems-based approach to address the evolving threat uncrewed aircraft systems present to NNSA facilities and personnel. Open architecture provides the data fusion and integration of open and proprietary sensors to allow NNSA to select the best available mitigation capabilities: radio frequency, directed energy, kinetic, and radar. Combining these approaches will prevent NNSA from relying on a single capability and allows for swift adjustments to incorporate advanced technology. The flexibility gained by this approach allows security planners to customize systems for each management and operating contract mission partner lab, plant, or site, based on unique location conditions. In FY25, NNSA will finalize the development of a permanent facility at the Idaho National Laboratory for CUAS testing and evaluation to help security planners identify possible next-generation solutions, outline continuous testing requirements, and improve NNSA's existing CUAS platform.

The FY25 budget request for Secure Transportation is \$371M. NNSA's Secure Transportation is essential to assure the security of weapons during delivery and return from the DoD and to meet our schedule commitments.

Information Technology and Cybersecurity

The FY25 budget requests \$646M for Information Technology (IT) and Cyber Security recognizes the increasing threats to cyber security and the ever increasing needs to improve information technology, including technology to support our digital engineering initiative. This request is 45% above the FY23 enacted to provide increased security to this high security enterprise.

NNSA faces an increasingly sophisticated and targeted cyber threat environment. We are recapitalizing our information technology (IT) and cybersecurity environments to provide a more resilient and flexible set of capabilities. The FY25 budget request prioritizes investments in the IT and cybersecurity workforce, enterprise-scale cyber infrastructure, implementation of zero trust architecture, digital transformation, classified and unclassified commercial cloud-based technologies, and classified wireless systems to improve mission outcomes across the nuclear security enterprise. NNSA is also conducting cyber exercises, including red teaming, to stress test NNSA's cybersecurity posture. We are making these investments to remain poised to address any cyber threat.

Defense Nuclear Nonproliferation

The Defense Nuclear Nonproliferation budget request of \$2.46B continues critical investment for our nonproliferation, counterterrorism, and emergency response programs at this difficult time in global strategic stability.

The Material Management and Minimization FY25 budget request is \$377M. The budget reflects the decision to delay the design and construction of a Pit Disassembly and Processing (PDP) Facility as part of the Surplus Plutonium Disposition (SPD) program. The PDP delay, to be re-evaluated in ten years, allows us to prioritize the removal of material from South Carolina. Real progress in SPD has been made. We are especially pleased that, following years of extensive planning and coordination, last year the first shipment of down-blended surplus plutonium was transported from K-Area at the SRS in South Carolina to Waste Isolation Pilot Plant in New Mexico for final disposition, and shipments have continued regularly. A total of 111.6 kgs of NNSA surplus plutonium was dispositioned during FY23.

Another key activity over the past several years has been assisting the final major global producer of the medical isotope molybdenum-99 to convert from using highly enriched uranium (HEU) to low enriched uranium, helping to ensure a stable supply of a critical medical isotope while eliminating an associated proliferation risk. A related effort to establish a reliable supply of domestically produced Mo-99 in the United States received a one-time increase in FY24, and a plan to execute is being established in consultation with Congress.

NNSA continues to work with partners who have converted research reactors and medical isotope production processes by supplying the high-assay, low-enriched uranium (HALEU) they need to operation. This increasingly includes countries that are looking to wean themselves from Russian supplies of HALEU.

In FY25, we plan to use the Mobile-Melt-Consolidate system developed by NNSA to begin to eliminate inventories of excess HEU in Norway that previously lacked a disposition pathway. To date, NNSA has eliminated over 7,340kg of HEU and plutonium globally; the material equivalent to eliminating hundreds of nuclear weapons.

The FY25 budget request for Global Material Security is \$544M. The GMS request prioritizes funding for the nuclear smuggling detection and deterrence portfolio. NNSA has increased focus on Southeast Asia, the Middle East, and Africa to counter Russian and Chinese activity and influence in those regions. NNSA began cooperation with 16 new partners in the past two years, and by the end of FY25, NNSA will deploy 78 new counter nuclear smuggling systems.

NNSA also remains on track to meet the congressionally mandated deadline to replace all cesium-based blood irradiators in the United States by 2027. NNSA's success here goes beyond just cesium-based blood irradiators. In fact, NNSA removed over 100 devices in FY23, with another 85 removals expected by the end of FY24. NNSA has expanded its work to find technical capable tools to replace those materials posing the greatest risk of radiological terrorism with a greater focus on alternatives to cobalt-60 replacements.

The FY25 budget request for Nonproliferation and Arms Control is \$225M. The budget request will support new activities to improve safeguarding uranium enrichment plants and develop policy and technical solutions to address risks associated with the global expansion of nuclear energy.

The budget includes funding for Project Carousel, a unique multilateral capability that will allow the IAEA to test and validate technologies and train safeguards inspectors.

NNSA personnel have been closely involved in efforts to counter Russian and Chinese disinformation and illegal actions while promoting U.S. and allied interests. This includes working with the Department of State (DOS) and other interagency partners to counter Chinese disinformation campaigns aimed at undermining the AUKUS security partnership. NNSA will continue collaborating with the DOS and DoD to advance the goals of the partnership while adhering to our obligations as both a responsible nuclear power and under the Nuclear Nonproliferation Treaty. NNSA has also lent its expertise to the Global Export Control Coalition to improve the detection of Russia's attempted sanctions evasion to acquire war material to support its ongoing invasion against Ukraine.

NNSA supports the expansion of civil nuclear energy to responsible partners globally. Last year, NNSA was instrumental in forging a civil nuclear cooperation agreement between the United States and the Philippines and provides support to DOS on the negotiation and implementation of these agreements. NNSA also helps U.S. companies manage their international engagements without sharing sensitive technology. Finally, NNSA is working directly with nuclear reactor developers to build in international safeguards concepts from the beginning, lowering the costs to long term deployment, increasing safeguards effectiveness and improving the competitiveness of American industry for foreign deployment.

The FY25 budget request for Nuclear Nonproliferation Research and Development is \$803 million.

The FY25 request will continue to support the Nonproliferation Stewardship Program and the Forensics R&D research life-cycle plans

NNSA delivered to the U.S. Space Force (USSF) the first newly completed next-generation Global Burst Detector (GBD IIF) payload for space-based nuclear detonation monitoring. This new sensor will provide an order of magnitude increase in capabilities at reduced size, weight, and power.

Building from this sensor capability, the R&D budget in FY25 request includes support for monitoring and verification capabilities for space situational awareness to reinforce arms control and verification missions in support of current treaties, like the Outer Space Treaty. This work protects our national interests and assets, providing information on activities all the way to the lunar surface and beyond.

While Russia routinely violates its arms control commitments and exhibits norm-violating behavior and China has been unwilling to engage in meaningful bilateral or multilateral arms control, NNSA continues to invest in developing infrastructure, human capital, and advanced technologies to meet current and future monitoring and verification needs and prepare for potential future arms control negotiations. Last year, NNSA reached an important scientific and

engineering milestone by successfully conducting a chemical explosive test in P Tunnel at the Nevada National Security Site. This experiment advanced our ability to detect very low-yield underground nuclear explosive tests around the world.

The R&D request also includes \$15M for developing capabilities to produce assessments of how AI models may present nuclear proliferation risks and provide recommendations for mitigating the potential AI threats to national security in light of the rapid pace of rapid technological advancement and innovation.

Nuclear Counterterrorism and Incident Response

Counterterrorism and Counterproliferation's (CTCP) core capabilities are to counter nuclear terrorism and nuclear proliferation and respond to any nuclear or radiological incident or accident worldwide. The FY25 budget request of \$536M for the Nuclear Counterterrorism and Incident Response program supports planned investments for the second phase of the Capability Forward initiative by developing a standardized Nuclear Emergency Support Team technical training program focused on actions to secure and defeat weapons of mass destruction (WMD) devices for Federal Bureau of Investigation field office responders. The FY 2025 request also supports technical and policy solutions to counter nuclear proliferation, capability enhancements to counter nuclear and radiological threats – including improved tools to locate, characterize, defeat and conduct forensics on these threats – and training delivery and capacity building for domestic and international partnerships on nuclear counterterrorism and emergency preparedness and response.

NNSA is advancing the Administration's Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence. As outlined in the Executive Order, NNSA is working with our colleagues across DOE to tools to better understand and mitigate the risk of AI being misused to assist in the development or use of CBRN threats. As Russia's full-scale invasion against Ukraine enters its third year, DOE/NNSA's Ukraine Task Force, comprised of experts from DNN and CTCP, is working to reduce nuclear risks in Ukraine. This includes providing equipment, training, and technical guidance to enable the safe and secure operation of Ukraine's nuclear power plants remaining under its control, protect its critical infrastructure, particularly the electric grid, provide situational awareness of any nuclear emergency that occurs in the country, and enhance the emergency preparedness and response capacity of our Ukrainian partners to respond to a nuclear event.

Naval Reactors Appropriation

The Naval Reactors budget request of \$2.1B supports NNSA's close partnership with the U.S. Navy in key areas. The agency is advancing naval nuclear propulsion capabilities to keep the U.S. nuclear fleet on the cutting edge of warfighting capability, maintaining the assured second-strike capability of the sea-based leg of the nuclear triad, and building the next generation of infrastructure to enable continued operational success.

With 78 warships, or more than 40% of the U.S. Navy’s major combatants¹, maintaining and expanding the United States’ competitive edge in the field of naval nuclear propulsion remains critical to our national security. Providing the Nation’s submarines and aircraft carriers with unparalleled mobility, flexibility, responsiveness, and endurance is vital in today’s geopolitical environment. Continued support for the Naval Reactors program in the FY 2025 request enables the Navy to project robust fleet capabilities on long-term missions that are essential to the security of the nuclear triad, continued global presence, and the security of global trade and free navigation of international waters.

The FY25 request supports technology development work critical to delivering improvements in reactor performance and reliability, and to support in-service and future submarines and aircraft carriers’ obsolescence and capability needs. The FY25 request for Naval Reactors Development is \$868.4M.

The FY25 request supports the continued safe and reliable operations, maintenance, and oversight at Naval Reactors’ four Naval Nuclear Laboratory sites and the associated contractor workforce. The FY25 request for Naval Reactors Operations and Infrastructure is \$763.2M. Funding also supports requirements for major initiatives: *Columbia*-class reactor systems development; development of future advanced submarine technology to support next generation designs; and continued progress on base technology development, infrastructure recapitalization at program sites, and decontamination and decommissioning efforts.

Finally, Naval Reactors continues to support the trilateral AUKUS partnership with work through reimbursable agreements with Australia and the U.K. NNSA will continue its collaboration with DOS and DoD to advance the goals of the agreement while adhering to our obligations as both a responsible nuclear power and under the Nuclear Nonproliferation Treaty.

NNSA Workforce

The Federal Salaries and Expenses budget request of \$565M, supports the recruiting, retention, and development of high-quality federal staff required to meet NNSA’s growing mission requirements and commitments, maintain the overall health of the federal workforce, and ensure NNSA is able to provide effective oversight, which is essential to controlling costs and schedule. The increased request helps address the perennially lowest score that NNSA receives in the Federal Employee Viewpoint Survey question that states “my workload is manageable.”

A portion of the increased request is associated with the SRS landlord transition from DOE Environmental Management (EM) to NNSA. We anticipate the SRS transition will include a transfer of 85 FTEs.

¹ “Major combatants,” in this instance, include aircraft carriers, submarines, and surface combatants based on the “Active in Commission” column from the Naval Vessel Register

NNSA aims to recruit and retain a highly skilled workforce by offering a compelling mission, collaborative work environment, and incentives to compete with the private sector for a limited pool of in-demand talents. NNSA is adjusting its hiring practices to be more proactive to get the right people in the right time frame.

NNSA appreciates Congress's support to raise the Excepted Service cap in the FY24 NDAA.

Steady Progress in Environmental Management Mission

As important as the missions of today and tomorrow are, the Cold War left an indelible mark on America. It is the mission of the Office of Environmental Management (EM) to address the legacy of nuclear weapons development and government-sponsored nuclear energy research that has played a significant role in domestic security and prosperity.

As the largest environmental cleanup program in the world, EM plays a key role in the Department's overarching mission to protect the planet. The Department's FY 2025 budget request of \$8.2 billion will help EM continue to make progress in fulfilling the government's responsibility to clean up the environment in communities that supported nuclear weapons programs and government-sponsored nuclear energy research. EM's vital mission also helps to support and enable DOE's ongoing national security and scientific research missions. For nearly 35 years EM has achieved significant progress for the environment, completing cleanup at 92 out of a total of 107 sites. That progress continues today. In 2023, EM teams across the country crossed the finish line on key demolitions, treated and relocated millions of gallons of waste, and deepened our engagements with local Tribes and communities all while curbing pollution.

Deactivation and demolition work at the Oak Ridge National Laboratory and the Y-12 National Security Complex is reducing environmental risks and enabling research and national security missions. In Washington state, EM has treated radioactive and chemical waste from large underground tanks at the Hanford Site where work is progressing towards startup of a system that will convert this waste into glass for disposal. Both Waste Treatment Plant melters have been successfully heated to operational temperature and the first container of nonradioactive test glass has been poured. The Integrated Waste Treatment Unit has treated over 68,000 gallons of tank waste in Idaho since the start of operations in 2023. At the Savannah River Site in Aiken, South Carolina, EM is processing record amounts of tank waste and continues to construct the Advanced Manufacturing Collaborative facility which will help meet the needs of the Department's cleanup mission and help develop a diverse and talented next generation workforce.

More than 400 transuranic waste shipments were received last year at the Waste Isolation Pilot Plant in New Mexico, double the amount from 2022. Demolition of the West Valley Demonstration Project's Main Plant Process Building is underway, will continue this year and will further advance under the Fiscal Year 2025 budget request. The Nevada National Security

Site completed demolition of four buildings that supported development and testing of nuclear rocket engines during the Cold War Era and will continue to reduce the cleanup footprint there in Fiscal Year 2025.

The FY 2025 request includes \$7.1 billion for defense environmental cleanup activities, which covers most major EM sites, and \$385 million for the Uranium Enrichment Decontamination and Decommissioning Fund contribution. The request builds on recent progress, reflects the Department's strong commitment to protecting the environment, enabling national security and scientific research missions, as well as delivering for communities most impacted by the legacy of the past. The request supports a ramp up in EM's ability to tackle tank waste -- one of the Department's largest environmental challenges and financial liabilities. The request will also enable continued progress in infrastructure improvements at the Waste Isolation Pilot Plant and support waste shipments from across the EM program. In addition, EM will continue to advance facility demolition and risk reduction projects across the program.

The request of \$2 billion for the Office of River Protection will enable EM to advance commissioning and startup of the Direct Feed Low Activity Waste system and includes a \$608 million investment to ramp up work on the Waste Treatment Plant's High Level Waste facility. Also at Hanford, the request of \$1.1 billion for the Richland Operations Office will enable continued risk reduction activities including advancing the transfer of cesium and strontium capsules to dry storage and treating another 2 billion gallons of contaminated groundwater.

At the Savannah River Site, the request of \$1.6 billion supports continued efforts to fully utilize capabilities to advance the tank waste mission. The request also supports continued progress in disposition of nuclear materials stored at the Site and maintains a high state of readiness for H Canyon, the only chemical separations facility remaining in operation in the United States. In recognition of the maturation of cleanup at the Savannah River Site and the increasing role the Site will play in ongoing national security missions, EM will transfer Site responsibilities to the National Nuclear Security Administration in FY25, while remaining focused on completing the remaining legacy cleanup activities there. At the Idaho Cleanup Project, the request of \$471 million supports the Department's continued commitment towards operations of the Integrated Waste Treatment Unit which will ultimately treat about 900,000 gallons of liquid waste by turning it into a granular solid. Along with providing for continued Waste Isolation Pilot Plant operations, the budget request supports key modernization and infrastructure recapitalization priorities. Shipments of defense transuranic waste to the Waste Isolation Pilot Plant will progress from sites across the DOE complex, including the Los Alamos National Laboratory in New Mexico.

EM's FY 2025 budget also facilitates the Department's broader national security and scientific research missions. Perhaps nowhere is this more evident than in Tennessee where large-scale cleanup operations are firmly underway at the Oak Ridge National Laboratory (ORNL) and the Y-12 National Security Complex (Y-12). Building on previous demolition work, EM transferred

the Biology Complex at Y-12 to NNSA which is using it to build a new Lithium Processing Facility. In 2023, EM tore down the Low Intensity Test Reactor located in ORNL's central campus. This year EM will initiate demolition of Y-12's Alpha 2 Building. With \$658 million for Oak Ridge, the FY 2025 budget request supports additional cleanup of high-risk excess facilities at the ORNL and Y-12. This steady progress is part of a broader vision focused not only on cleaning up the past, but also helping prepare for expanding national security and research missions in Oak Ridge, Tennessee.

In addition to enabling impactful progress at EM sites, the FY 2025 request helps position EM for the future. Recognizing the EM mission will span several decades at some sites, the budget request invests in building a workforce for the future that promotes diversity, equity, inclusion, and accessibility. That includes high quality jobs in environmental cleanup where workers from all backgrounds can make a living and make a difference. The budget request includes \$56 million to continue EM's Minority Serving Institutions Partnership Program. The budget request also supports science-based advancement that provide opportunities to meet the Department's cleanup commitments safely, quickly and efficiently. The request supports an integrated approach to EM technology development, targeted R&D investments, the continued evaluation of additional waste treatment options, and partnerships with regulators and engagement with communities to apply effective solutions.

While the mission is rooted in the environmental legacy of the past, EM is also focused on the possibilities for the future. As cleanup progresses, EM is opening up possibilities for a clean energy future, good paying jobs and thriving communities and Tribal Nations. The FY 2025 request represents a significant investment in helping these communities grow and thrive. The budget request includes support for the Tribal Nations, Alaska Native communities, and communities near EM sites ensuring they are safe, providing opportunities for local input into cleanup priorities and helping build a vibrant future. The request includes Payment in Lieu of Taxes funding for communities near Hanford and Savannah River to support schools, roads and other local priorities. A \$40 million investment is also included for the Community Capacity Building Grant initiative. The Department will continue to work hand-in-hand with workers, unions, Tribal Nations, local communities, and Congress to protect the environment, plan for continued cleanup and foster successful visions for the future.

Conclusion

At DOE, we continue to make progress in fields that enhance American national security during a time of significant global challenges. NNSA's weapons activities, nonproliferation and counterterrorism, and naval reactors programs all play key roles in reducing global nuclear threats and supporting our nuclear deterrent which remains the cornerstone of our national defense. The Department faces an expanded mission at a time of supply chain disruptions, inflation, great power competition, and increased impacts from climate change. We are determined to succeed and continue providing for the American people. We appreciate the trust

and resources the Committee has placed in us to meet this moment and are thankful for the continued support of the public and the rest of Congress.