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U.S. Department of Energy
Before the
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Chairman Alexander, Ranking Member Feinstein, and Members of the Subcommittee, it is an honor to appear before you today to discuss the President's Fiscal Year (FY) 2021 Budget Request for the Department of Energy (DOE).

It is a great privilege to serve as the Secretary of Energy. This is my first hearing as Secretary with your Committee and I am thankful for the opportunity to be here to testify in this role on the President's Budget Request for DOE. The Department is grateful for the support of this Committee for DOE's mission and we look forward to a full-year appropriation.

Introduction

The President's FY 2021 Budget Request is $35.4B for the Department of Energy to meet the challenges of today and tomorrow by promoting energy independence, progressing scientific research, and protecting the Nation.

The President's and the Department's focus is on delivering to the Nation the technology, innovation, and capabilities necessary for energy independence, scientific progress, and national security. The Department continues to increase stewardship, accountability, and commitment to excellence. This budget request demonstrates the effective and efficient management of tax payers dollars entrusted to us.

The FY 2021 Budget Request invests in DOE's mission to advance economic growth and support United States national security through transformative science and technology innovation that promotes affordable and reliable energy through market solutions, and meets nuclear security and environmental cleanup challenges.

America's position in the global energy system is as a leading producer, consumer, and innovator. Access to domestic sources of clean and reliable energy will underpin a prosperous, secure, and powerful America for decades to come. Abundant and reliable energy is central to a flourishing economy. The Nation must take advantage of domestic resources and energy efficiency to promote competitiveness across industries. Using the

Nation's energy resources of coal, natural gas, petroleum, renewables, and nuclear, stimulates the economy while building a foundation for future growth.

As other countries continue to advance, the U.S. must advance as well and DOE prioritizes emerging technologies critical to economic growth and security, such as advanced computing technologies and artificial intelligence (AI).The U.S. must lead in research, technology, and innovation to maintain competitive advantage. To do this, supporting research and development (R&D), including at the Department's 17 National Laboratories, is critical. The National Laboratories have served as leading institutions for scientific innovation in the U.S. for more than 75 years. American ingenuity at the Laboratories can drive tremendous technological breakthroughs leading to improvements across all aspects of American life.

To understand and address threats to national security, and given the geopolitical environment, it is crucial that the U.S. have capabilities to address the challenges presented. The return to great power competition coupled with an unprecedented range and mix of threats requires the U.S. to maintain a diverse set of nuclear deterrent and nonproliferation capabilities that can provide flexible and tailored options to enhance deterrence and to achieve objectives should deterrence fail.

Key to this effort is sustaining the current stockpile of U.S. nuclear weapons, modernizing nuclear forces and infrastructure, and maintaining deterrence in light of increasingly capable opponents. National security also depends on a resilient electric grid and successfully countering evolving and increasing cyber-attacks on networks, data, facilities, and infrastructure.

The budget request advances global leadership in scientific and technological innovation in part through the National Laboratories, including basic research to support the Administration's Industries of the Future initiative. DOE also remains committed to managing and cleaning up the Nation's spent nuclear fuel and materials, and aggressively modernizing the nuclear security enterprise for the safety and security of America.

Promoting Energy Independence, Progressing Scientific Research, and Protecting the Nation

Within the $35.4B budget request there is $3.6B for technologies that will make the Nation's energy supply more reliable and efficient for promoting energy independence and dominance.

Additionally, $5.9B is dedicated to progressing cutting-edge scientific R&D, including quantum information science (QIS) and AI. The budget request will fund key technologies such as advanced manufacturing, biotechnology, and technology transfer. The request also supports state-of-the art scientific tools and facilities keeping U.S. researchers at the forefront of scientific innovation.

To support national security the budget requests $26.9B. Of that, $6.1B will continue cleanup of sites resulting from six decades of nuclear weapons development and production and Government-sponsored nuclear energy research. There is $19.8B for sustainment and modernization of the U.S. nuclear stockpile and deteriorating infrastructure, reduction of global nuclear threats, and resources to propel the nuclear Navy fleet of aircraft carriers and submarines.

Focusing on results, the Department prioritizes intradepartmental collaboration to advance crosscutting initiatives such as energy storage, critical minerals, harsh environment materials, advanced manufacturing, exascale computing, QIS, AI, energy-sector cyber security, and microelectronics.

The budget request also continues investment in early-stage research and development at the National Laboratories to guarantee that the U.S. is at the forefront of technology and innovation through investments in the Administration's Industries of the Future initiative.

As part of that initiative the budget request provides over $250M for Artificial Intelligence (AI) across the DOE enterprise. Researchers are applying AI to challenges in ways that will alter energy, science, and national security landscapes. AI is being applied to data collection in the Office of Science (SC), used by the Office of Fossil Energy (FE) for carbon storage through incorporation of autonomous monitoring and big data management. AI is also being used for materials discovery within the Hydrogen and Fuel Cells Technology research consortia efforts. AI is a tool used by the National Nuclear Security Administration (NNSA) nuclear proliferation analysts to sort through massive volumes of data from current and next-generation sensor systems, as well as integrating data from disparate sources to identify anomalies that need further investigation. Research using AI is critical for advanced computing associated with development of models for simulation of nuclear weapons and their components, enhancing weapons codes and a variety of other applications. The Office of Cyber Security, Energy Security, & Emergency Response (CESER) will apply AI for R&D and demonstration of innovative tools and technologies to prevent, detect, and mitigate cyber-attacks on energy delivery systems. To support all of these efforts DOE established the

Artificial Intelligence and Technology Office (AITO) to coordinate and oversee efforts across DOE and implement the vision for cross-cutting mission relevant AI projects.

In FY 2021, the budget request provides $249M -- $237M from SC and $12M from NNSA -- in support of QIS research. Supporting the National Quantum Initiative and the Administration's Industries of the Future initiative, the budget request has funding for research activities including strategic partnerships in quantum computing and data intensive applications, development of quantum sensors based on atomic-nuclear interactions, development of quantum computing algorithms, and early-stage research associated with the initial steps to establish a dedicated Quantum Network.

The budget request also emphasizes coordinated crosscutting research and seeks innovation of technologies for energy storage. The request includes $190M for the Advanced Energy Storage Initiative (AESI) to support the Energy Storage Grand Challenge (ESGC) -- a holistic approach to accelerate the development, commercialization, and use of next-generation energy storage technologies. In doing so the Department took existing dispersed storage efforts from the SC, Grid Modernization Initiative, AESI, Beyond Batteries, and others into ESGC for an integrated, comprehensive DOE-wide strategy. The vision for the ESGC is to create and sustain global leadership in energy storage usage and exports, with a secure domestic manufacturing supply chain that is independent of foreign sources of critical materials.

The budget request invests $131M to establish a Critical Minerals Initiative (CMI) to coordinate research across the Department. Funds will be used from program offices including, the Office of Energy Efficiency and Renewable Energy (EERE) with $53M, FE with $32M, the Office of Nuclear Energy (NE) with $1M, and SC with $45M, to initiate a National Laboratory-led team approach modeled after the Grid Modernization Laboratory Consortium to elevate and coordinate research activities.

To promote efficiency and maximize impact, the budget request of $58.5M maintains momentum on the Harsh Environment Materials Initiative (HEMI) launched in FY 2020. This funding includes $6.5M from EERE, up to $22M from FE, and $30M from NE. The initiative aligns materials and component manufacturing process research for advanced thermoelectric power plants. Building on current applied energy programs, HEMI uses activities related to advanced reactor technologies and high efficiency low emission modular coal plants to support R&D of novel materials, integrated sensors, and manufacturing processes.

To maintain U.S. leadership in supercomputing, the budget requests nearly $710M including $475M from SC and $235M from NNSA ($235M). In FY 2021, funding will support continued development of two SC exascale systems. The first of these two exascale systems will be deployed in calendar year 2021 at Argonne National Laboratory, with the second coming on line in the 2021 – 2022 timeline at Oak Ridge National Laboratory. In addition, the FY 2021 Budget Request supports the procurement of and site preparation for a third exascale system delivered to NNSA at Lawrence Livermore National Laboratory in FY 2023. The SC and NNSA partnership will bolster America's national security by strengthening the next generation of scientific breakthroughs and also support to the nuclear stockpile not possible with today's fastest computing systems.

Funding in the budget request invests $176M in next-generation microelectronics research from SC ($45M), NE ($12M), and NNSA ($119M).

To support fiscal responsibility and streamline DOE activities, the budget request eliminates the Advanced Research Projects Agency—Energy (ARPA-E) program, the Title XVII Innovative Technology Loan Guarantee Program, the Advanced Technology Vehicle Manufacturing Loan Program, and the Tribal Energy Loan Guarantee Program.

The phasing out of ARPA-E facilitates opportunities to integrate the positive aspects of ARPA-E into DOE's applied energy research programs, including through changes to the implementation of the Small Business Innovation Research and Small Business Technology Transfer program.

Loan programs are proposed for phase out as well because the private sector is better positioned to finance deployment of commercially viable projects.

To further achieve fiscal discipline and reduce taxpayer risk the request proposes to repeal the Western Area Power Administration's borrowing authority that finances the construction of electricity transmission projects. Investments in transmission assets are best carried out by the private sector with appropriate market and regulatory incentives.

Promoting Energy Independence

Recognizing that the U.S. is the leader in energy technology and has among the most abundant and diverse energy resources in the world, including oil, gas, coal, nuclear, and renewables, the FY 2021 Budget Request supports a variety of efforts that emphasize and

strengthen the country's unique advantage, including establishing a uranium reserve, to promote energy independence.

The budget requests $3.6B for energy and related programs, funding early-stage applied R&D, and specifically targeted later-stage R&D to address unique challenges. DOE is committed to supporting energy initiatives that attract investments, safeguard the environment, and strengthen energy security.

The budget requests $719.6M for Energy Efficiency and Renewable Energy (EERE). In FY 2021, EERE will prioritize core lab activities, particularly in renewables and energy efficiency. The budget also maintains funding at the National Renewable Energy Laboratory. EERE's efforts invest in early-stage research to spur private-sector research, development, and commercialization of critical energy technologies such as: sustainable transportation technologies to increase fuel diversity and improve efficiency across the transportation sector ($161M); renewable power generation technologies to compete with other electricity sources without subsidies ($160M); and energy efficiency to improve affordability, energy productivity, and resiliency of homes, buildings, and manufacturing sectors ($164M). The budget request invests in the Plastics Innovation Challenge and continues to support Advanced Energy Storage Initiative in support of the energy Grand Storage Challenge, Harsh Environment Materials Initiative, Critical Minerals Initiative, and other cross-cutting activities.

The budget request divests from Weatherization and State Energy subprograms which are more appropriately funded at the state level.

Innovation investments in clean energy technologies are more competitive than ever before and examples include: utility-scale PV solar which achieved the DOE goal of 6 cents/kWh in 2017, three years ahead of schedule; onshore wind cost has declined by 55% since 2008; EV battery costs have declined by 80% since 2008; and, the cost of LED lightbulbs have declined by over 90% since 2008.

The request for the Office of Cyber Security, Energy Security, & Emergency Response (CESER) is $184.6M. CESER will invest in an all hazards approach to energy-sector cybersecurity. The budget request supports development of capabilities to identify, prevent, protect against, mitigate, and respond to cybersecurity threats during an emergency event that pose risk to energy delivery system operations. To do so the budget

request funds R&D, public and private-sector partnerships, and emergency preparedness and response.

The budget requests $195M for the Office of Electricity to support the mission of secure and resilient sources of electricity. The investment addresses the challenges of increased threats to energy infrastructure, changes in supply mix and location of the Nation's electricity generation portfolio, and increased variability and uncertainty of supply and demand. The budget request will support four priorities: to develop and implement an integrated North American Energy Resiliency Model; pursue a megawatt-scale storage; revolutionize sensing technology; and pursue transmission permitting and technical assistance.

The Office of Nuclear Energy (NE) budget request is $1.2B to fund a diverse set of programs to advance nuclear energy technologies that are critical to the Nation's mix of energy sources. The budget request supports early-stage R&D and targeted later-stage R&D to address unique challenges. The request has funding for the Reactor Concepts R&D, Fuel Cycle R&D, and Nuclear Energy Enabling Technologies as well as critical laboratory infrastructure and safeguards needed to support nuclear energy R&D.

Of the $1.2B for NE, $295M is for the Versatile Test Reactor (VTR) project, one of the Department's highest priorities. The VTR is a first-of-a-kind fast reactor that will assist the private sector to develop and demonstrate new energy technologies. This effort reinforces the Administration's commitment to re-energize the U.S. nuclear sector with funds to support design and construction of the VTR.

For the Interim Storage and Nuclear Waste Fund Oversight program, the budget requests $27.5M to fund the development and implementation of a robust interim storage program, DOE's fiduciary responsibility for maintaining a safe and secure Yucca Mountain facility, and oversight of the Nuclear Waste Fund. Coupled with DOE's funding for storage, transportation, and disposal R&D, the budget request supports the development of a durable, predictable yet flexible plan that addresses efficiently storing waste temporarily in the near term, followed by permanent disposal. In doing so the Administration will establish an interagency working group to develop this plan in consultation with States. The Department is committed to fulfilling the Federal Government's legal and moral obligations to properly manage and dispose of the nation's spent nuclear fuel and high-level waste.

To address the immediate challenges facing the domestic uranium mining and conversion industries, the budget invests $150M to establish a Uranium Reserve. The Uranium Reserve reflects the Administration's priority for availability of uranium in the event of a market disruption and supports strategic U.S. fuel cycle capabilities.

For Fossil Energy R&D, the budget requests $730.6M to conduct research that supports the clean, affordable, and efficient use of domestic fossil energy resources. The program funds early-stage R&D with academia, the National Laboratories, and the private sector to generate knowledge that industry can use to develop new products and processes. Funding will improve the reliability, availability, efficiency, and environmental performance of advanced fossil-based power systems.

The budget requests $200M net amount for the Office of Petroleum Reserves, with $187M for the Strategic Petroleum Reserve (SPR). The SPR is for strategic and economic security against potential interruptions in U.S. petroleum supplies, and this request supports operational readiness and drawdown capabilities. The budget request further proposes a sale of 15 million barrels of SPR crude oil to raise funds for other Departmental priorities, including $242M needed to fund the completion of remediation work at the NPR-1 site. The Naval Petroleum and Oil Shale Reserves will be funded at $13M.

Consistent with prior budget requests, the Administration is re-proposing the sale and closure of the Northeast Gasoline Supply Reserve (NGSR), which has not been used since establishment in 2014. Proceeds from the sale from the NGSR contribute to deficit reduction and will fund current law SPR sales. The Department is also proposing to close the Northeast Home Heating Oil Reserve which has also never been used for the intended purposes and is not a good use of taxpayer funds.

The Energy Information Administration (EIA) budget request of $128.7M will continue supporting the collection, analysis, and dissemination of independent and impartial energy information and analysis to promote sound policymaking, efficient markets, and public awareness and understanding. EIA will also begin a multi-year effort to modernize energy modeling capabilities. Expected benefits include greater agility in EIA's modeling system to address key current and emerging trends. The budget request also bolsters EIA to continue planned cybersecurity initiatives for information security.

Office of Indian Energy Policy and Programs (IE) supports energy development and deployment on Indian lands, reduction of energy costs, assistance in economic development,

and electrification in tribal communities where unemployment and poverty rates far exceed national averages. The budget requests $8M for these important IE efforts.

The budget requests $78.6M for the four Power Marketing Administrations (PMA) to sell electricity primarily generated by federally owned hydropower projects to public entities and electric cooperatives. The budget again proposes to repeal Western Area Power Administration's (WAPA) borrowing authority that finances the construction of electricity transmission projects. Investments in transmission assets are best carried out by the private sector with appropriate market and regulatory incentives that support resiliency and reliability. The request again proposes to sell the transmission assets owned and operated by the PMAs, and authorize the PMA's to charge rates comparable to those charged by for-profit investor owned utilities.

Reducing the government's role in electricity transmission infrastructure ownership, and introducing market-based incentives for power sales from Federal dams will encourage an efficient allocation of economic resources and mitigate risk to taxpayers.

Progressing Scientific Research

The FY 2021 Budget Request includes $5.9B to progress scientific research continuing U.S. dominance in research and science. The budget request funds the Department's science mission by focusing on early-stage research, operating the National Laboratories, and continuing high priority construction projects. The budget includes ongoing investments for Exascale and QIS for creating new ways of processing and analyzing information.

The request has $475M for exascale computing to secure a global leadership role in exascale, $237M for quantum information science (QIS), $125M for Artificial Intelligence (AI) and machine learning, and $45M to enhance materials and chemistry foundational research to support U.S.-based leadership in microelectronics. The Office of Science (SC) efforts in QIS include development of quantum computing and quantum sensor technology. QIS will benefit national security, economic competitiveness, and secure America's continued leadership in science. SC's work, particularly in the areas of QIS and AI, is fundamental for the Industries of the Future Initiative.

The SC request includes $988M for Advanced Scientific Computing Research (ASCR) to strengthen and further U.S. leadership in strategic computing, the foundations of AI and QIS, and the infrastructure for data-driven science. To meet SC's high performance

computing mission for the exascale project, the budget request prioritizes basic research in Applied Mathematics and Computer Science with emphasis on the challenges of data intensive science, including AI and machine learning, and computing technologies. The budget request increases support for ASCR's Computational Partnerships focusing on developing partnerships in quantum computing and data intensive applications, and new partnerships in exascale and data infrastructure. The budget request also provides support for ASCR user facilities operations for the availability of high performance computing, data, and networking to the scientific community. Specifically, funds provide for exascale computing, QIS, and operation of user facilities.

The request for Basic Energy Sciences (BES) is $1.9B. BES supports fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels providing foundations for new energy technologies, to address the environmental aspect of energy use. BES also supports DOE missions in energy, environment, and national security.

The budget requests $516.9M for Biological and Environmental Research (BER) to support fundamental research to understand complex biological, biogeochemical, and physical principles of natural systems at scales extending from the genome of microbes and plants to the environmental and ecological processes at the scale of the planet Earth. This effort supports research in biological systems science, earth and environmental systems science, and new efforts in translating biodesign rules to functional properties of novel biological polymers. The budget request also supports and continues operation of three BER scientific user facilities: the Joint Genome Institute, the Atmospheric Radiation Measurement Research Facility, and the Environmental Molecular Sciences Laboratory.

Fusion energy is a carbon-free energy source with enormous potential, such as combatting climate change, serving as a vast energy source, providing economic benefits, and promoting national security. The Office of Fusion Energy Sciences request is $425.1M for research to develop a fusion energy source and to understand matter at very high temperatures and densities. The budget continues to support research and facility operations, including research at international facilities with unique capabilities, research in QIS, and research in high-density laboratory plasma science. Funding for facilities operations includes DIII-D National Fusion Facility for magnetic fusion, the National Spherical Torus Experiment Upgrade facility repairs, and upgrades at the Matter in Extreme Conditions Petawatt facility project. The budget request also funds U.S. in-kind hardware contribution for the ITER international research project.

The budget requests $818.1M for High Energy Physics (HEP) for research to understand at the fundamental level how the universe works by discovering the most elementary constituents of matter and energy, probing interactions between and exploring basic nature of space and time. HEP underpins and advances DOE mission and objectives through this research. This effort contributes to core research activities including QIS, AI, exascale computing, and next-generation microelectronics. The request further funds the Accelerator Traineeship Program to expand workforce development in advanced technology and HEP facilities.

The Nuclear Physics request is $653.2M to support research to discover, explore, and understand all forms of nuclear matter. The budget request funds world class nuclear physics, QIS, the DOE Isotope program. The budget request also supports new initiatives in AI and Strategic Accelerator R&D in relationship nuclear physics.

The budget requests $20.5M for Workforce Development for Teachers and Scientists which provides for a sustained pipeline of science, technology, engineering, and mathematics (STEM) professionals to meet current and future national goals and objectives. Maintaining U.S. leadership requires specialized computer scientists and applied mathematicians to develop supercomputing methods to solve real world problems today and develop technology of the future. The budget funds programs that place highly qualified applicants in authentic STEM learning and training opportunities at DOE laboratories, as well as supports the National Science Bowl® competition.

The request for Science Laboratories Infrastructure is $174.1M. These funds will sustain mission-ready infrastructure and safe and environmentally responsible operations by providing the infrastructure necessary to support leading edge research at ten national science laboratories. The budget request funds the new and ongoing construction projects that will address inadequate core infrastructure and utility needs.

The budget invests $5M for operations of the Artificial Intelligence and Technology Office (AITO). AI is a foundational technology that is a key effort for influencing and steering decades of innovation. AITO leads Department-wide efforts to evaluate the scope and effectiveness of DOE's AI programs and identify gaps not addressed by programs, functional offices, sites, or associated National Laboratories. The DOE AITO is uniquely situated to develop and lead collaborative solutions across the Department that are consistent with the Administration and Secretary's priorities and objectives. The

office will also be instrumental in supporting the Administration's Industries of the Future Initiative.

The budget requests $12.6M for the Office of Technology Transitions to support ongoing activities, including the Technology Commercialization Fund, Lab Partnering Service, Energy I-Corps, and Innovation XLab summits. The budget request will fully implement the Empowering Novel American Businesses with Laboratory Embedding competition.

Protecting the Nation

Environmental Management

The Department must continue to manage nuclear waste in all forms including some of the most dangerous materials known. The FY 2021 Budget Request includes $6.1B for Environmental Management (EM) to continue cleanup resulting from six decades of nuclear weapons development and production and Government-sponsored nuclear energy research. EM is responsible for cleanup at 16 remaining sites in 11 states. Funds requested will support cleanup of millions of gallons of liquid radioactive waste and thousands of tons of spent nuclear fuel and nuclear materials. Over time this effort will dispose of large volumes of transuranic and mixed/low-level waste, and huge quantities of contaminated soil and water. To date, EM has completed cleanup activities at 91 sites in 30 states and in the Commonwealth of Puerto Rico.

Within the EM request, $1.7B will support the Liquid Waste Program at Savannah River Site (SRS) to achieve additional risk reduction through stabilization and immobilization of high activity radionuclides with vitrification into canisters at the Defense Waste Processing Facility and disposition of decontaminated salt waste. To do so, the request supports continuing construction of saltstone disposal units. Of note, the Salt Waste Processing Facility is poised to start in FY 2020 and in FY 2021 will begin 24-7 operations. The budget request for SRS also includes $25M for the design and construction of the Advanced Manufacturing Collaborative Facility.

The budget request includes $1.3B for the Office of River Protection to safely manage and treat approximately 56 million gallons of radioactive liquid and chemical waste currently stored in 177 underground storage tanks at Hanford. The budget supports construction, start up, and commissioning of facilities that are integral to begin treating Hanford low-activity tank waste by December 2023 as required by the 2016 Amended Consent Decree.

For the Richland site, the budget requests $655M to support continued achievement of important progress required by the Tri-Party Agreement for cleanup activities separate from tank waste managed by the Office of River Protection. The request will maintain safe operations, provide Hanford site-wide services, and conduct critical site infrastructure projects, as well as startup preparation activities for the Integrated Disposal Facility to support Direct Feed Low Activity Waste commissioning and startup.

To continue cleanup at the Idaho site the request includes $271M. These funds support Integrated Waste Treatment operations and additional treated sodium bearing waste storage capacity. The request also supports completing buried waste exhumation activities, and continued progress in characterizing, packing, and shipping stored contact-handled and remote handled transuranic waste, as well as spent nuclear fuel activities in order to meet the Idaho Settlement Agreement milestone for 2023.

For cleanup activities at the Oak Ridge site the budget requests $432M. These funds support continued slab and soil remediation at the East Tennessee Technology Park, mercury characterization and remediation technologies, planning for construction of the mercury treatment facility at the Y-12 National Security Complex, as well as continued design for the On-Site Disposal Facility to support Y-12 National Security Complex and Oak Ridge National Laboratory.

For the Waste Isolation Pilot Plant, the Nation's only mined geologic repository for permanent disposal of defense-generated transuranic waste, the budget requests $390M to safely continue waste emplacement. This effort includes $50M for continued progress on the utility shaft project to increase underground airflow for simultaneous mining and waste emplacement operations, as well as $10M to begin the Hoisting Capability Project.

The budget requests $491M for the decontamination and decommissioning of the Portsmouth Gaseous Diffusion Plant facilities, including construction and design of on-site waste disposal facilities.

The budget requests $282M for the Paducah site to continue environmental remediation and further stabilize the gaseous diffusion plant.

To continue focus on surface and groundwater management at Los Alamos National Lab$120M is requested. The request also continues activities to control migration of a hexavalent chromium plume beneath Montana and Sandia Canyons.

Legacy Management

The budget request provides $317M for Legacy Management (LM) to support long-term activities, administer an interagency agreement addressing abandoned defense related uranium mines, execute the Department's Uranium Leasing Program, develop applied studies and technology to reduce scope and costs, and close the Grand Junction, Colorado Disposal Site. Within this total, the budget request includes $150M to support and expand the Reform Proposal to consolidate funding for the administration for Formerly Utilized Sites Remedial Action Program under LM.

National Nuclear Security Administration

NNSA is responsible for maintaining a safe, secure, and effective nuclear weapons stockpile that preserves a credible nuclear deterrent; for preventing, countering, and responding to evolving and emerging nuclear proliferation and terrorism threats; safe, reliable, and long-term nuclear propulsion to the Nation's Navy as it protects American and allied interests around the world; and for the highly skilled workforce.

To support these activities the budget request proposes $19.8B for NNSA consistent with the nation's nuclear deterrence mission and the policy set forth in the 2018 Nuclear Posture Review (NPR).

Weapons Activities

The budget includes $15.6B for Weapons Activities to maintain the safety, security, and effectiveness of the nuclear stockpile, continue the nuclear modernization program, and modernize and recapitalize nuclear security infrastructure.

Of the $15.6B, $4.3B is for Stockpile Management to include stockpile sustainment, dismantlement, and nuclear warhead modernization.

The Weapons Activities request also includes $2.5B for Production Modernization to support strategic materials production capabilities for nuclear weapons, including primaries, canned subassemblies, radiation cases and non-nuclear components needed to sustain the nuclear stockpile near- to long-term. The budget request funds equipment, facilities, and personnel required to reestablish the Nation's ability to produce pits with the goal of producing 80 pits per year by 2030 at Los Alamos National Lab and Savannah River Site (SRS).

Further, the Weapons Activities funds include $2.8B for Stockpile Research, Technology, and Engineering to provide the scientific foundation for science-based stockpile decisions and actions, including the capabilities, tools, and components enabling assessment of the active stockpile and certification of warhead modernization programs. The budget request for FY 2021 supports the continued implementation of the Enhanced Capabilities for Subcritical Experiments (ECSE). Funding includes $235M for activities and research leading to deployment of exascale capability for national security applications, of which $114M is for a multi-year non-recurring engineering collaboration focusing on advanced system engineering efforts and software technologies to make the 2023 exascale system a capable and productive computing resource for the Stockpile Stewardship Program.

The request is for $4.4B to support Infrastructure and Operations to continue the long-term effort to modernize NNSA infrastructure, improve working conditions and capabilities of deteriorating facilities and equipment, and address safety and programmatic risks. The request specifically includes increased funding for the construction of the Uranium Processing Facility project and design of the Lithium Processing Facility at Y-12 and the Tritium Finishing Facility at SRS. The budget request also continues construction of the Chemistry and Metallurgical Research Replacement project to sustain plutonium science activities.

Defense Nuclear and Nonproliferation

For Defense Nuclear Nonproliferation at NNSA, the budget requests $2B to address nuclear threats by preventing the unwanted acquisition of nuclear weapons or weapons-usable materials, countering efforts to acquire such weapons or materials, and responding to nuclear or radiological incidents. The budget request also supports design, long lead procurements, and site preparation for the Surplus Plutonium Disposition project at SRS, increases in funding for nuclear forensics, and continues support of non-Highly Enriched Uranium-based Molybdenum-99 production facilities in the U.S.

Naval Reactors

To continue funding for delivery of the reactor core for the Columbia-class submarine and refueling of the S8G prototype reactor the budget requests $1.7B for Naval Reactors. The budget request also supports recapitalizing the capability to handle naval spent nuclear fuel and continued work to keep the U.S. Navy’s Nuclear fleet as the most advanced, well-maintained, and capable nuclear fleet in the world.

Federal Salaries and Expenses

The budget request includes $454M to invest in the recruitment, training and retention of the highly skilled workforce vital to DOE's national security mission within the NNSA.

Cybersecurity

Cyberattacks pose an increasing threat to the Nation's energy infrastructure. Recognizing the seriousness of the threat against critical infrastructure, the budget request supports increased funding for cyber and energy security initiatives. DOE will improve energy infrastructure security by addressing the emerging threats of tomorrow while protecting the reliable flow of energy to Americans today. The budget request includes $158.8M in program office budgets to support improved energy-sector cybersecurity, in addition to $375M for the information technology and cybersecurity of NNSA.

Other Defense Activities

The FY 2021 budget request provides $1.1B to support defense activities conducted by the Department, including $317M for Legacy Management. These include Environment, Health, Safety and Security, Enterprise Assessments, Specialized Security Activities, Hearings and Appeals, and Defense Related Administrative Support (DRAS). Funding from DRAS is used to offset administrative expenses for work supporting defense-oriented activities.

Administration and Oversight

The FY 2021 budget request includes $215M for Administration and Oversight activities, including Departmental Administration (DA), International Affairs, the Inspector General, and offsets.

DA requests $123.5M for management and mission support organizations that have enterprise-wide responsibility for administration, accounting, budgeting, contract and project management, human resources, congressional and intergovernmental liaison, energy policy, information management, life-cycle asset management, legal services, workforce diversity and equal employment opportunity, ombudsman services, small business advocacy, sustainability, and public affairs.

In January 2020, the Department began a restructuring of the Office of Policy to the Office of Strategic Planning and Policy (OSPP). OSPP will be a direct report to the

Office of the Secretary for a more efficient and effective approach to the analysis, formulation, development, and advancement of all policy across the Department.

The budget requests $33M for International Affairs to coordinate the Department's international work and promote global market opportunities for U.S. energy companies and technology exports.

The Office of the Inspector General is funded at $58M to review the integrity, economy, and efficiency of DOE programs and operations, including NNSA and the Federal Energy Regulatory Commission (FERC).

The Department will realize -$722M in savings and receipts including from the sale of the Northeast Gasoline Supply Reserve (-$75M), sale of oil from Strategic Petroleum Reserve (-$589M), offsets based on the reduced Title 17 credit subsidy (-$49M) and savings from FERC fees and recoveries in excess of annual appropriations (-$9M).

Achieving goals established in the request requires an exceptional workforce. The Department will invest in attracting, training, and retaining the Nation's best talent.

Conclusion

The Department of Energy is focused on the bottom line – delivering real benefit for the resources provided by Congress on behalf of the American people. The FY 2021 President's Budget Request provides for America's future by promoting energy independence, progressing scientific research, and protecting the Nation. The budget demonstrates fiscal discipline and commitment to an efficient and effective Federal government. To that end, DOE will focus spending in areas with the highest return on investment of tax payer dollars. The President's Budget Request supports the critical role the Department of Energy has in energy independence and dominance, economic growth, and the safety and security of the Nation. Finally, I want to thank the committee for the support for DOE's mission in FY 2020, and your hard work to pass a full year appropriation for FY 2019. The certainty provided the Department is appreciated, and we are seeking that same certainty this year. I look forward to working with each of you and your staffs to support and achieve the important Department of Energy mission.