Testimony of Dr. Kathryn Huff

Assistant Secretary for Nuclear Energy

U.S. Department of Energy

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Introduction

Thank you, Chairman Manchin, Ranking Member Barrasso, and distinguished Members of the Committee. It is an honor for me to appear before you today and represent the Department of Energy (DOE) at this hearing related to the nuclear fuel cycle and supply chain.

Nuclear Energy

To meet our ambitious carbon reduction goals and rebuild U.S. leadership globally, the Biden-Harris Administration is prioritizing activities that keep the existing fleet of nuclear power plants in operation, deploy advanced reactor technologies, secure and sustain the nuclear fuel supply, strengthen nuclear safety, security, and safeguards, and expand international nuclear energy cooperation and non-proliferation. Nuclear energy will play a major role in the transition to a carbon-free energy economy by fundamentally underpinning our nation's target for carbon-free electricity as well as non-electric energy markets. New nuclear reactor deployments also have the potential to decarbonize many industrial sectors in the United States and abroad. Ensuring this future for our nation and our allies must include a secure and reliable source of fuel for today's nuclear power plants and those of tomorrow. As prioritized by President Biden in his recently released National Security Memorandum on *Countering Weapons of Mass Destruction Terrorism and Advancing Nuclear and Radioactive Material Security*, the United States is committed to lead the way in the responsible development and deployment of advanced nuclear reactors by championing the development and export of technology that incorporates the highest standards of safety, safeguards, and security by design while minimizing the use and accumulation of weapons-usable nuclear materials. I greatly appreciate the committee's support of these important programs and other policies that support the continued deployment of clean energy that nuclear energy provides.

The Russian Federation's brutal invasion of Ukraine has demonstrated the grave threat to global energy security posed by dependence on Russian-supplied fuels. This is also the case in the nuclear area. Russia, the largest global enricher of uranium, currently supplies a significant portion of the nuclear fuel supply chain to the United States and our international allies and partners. In particular, conversion and enrichment services from trusted sources are insufficient to replace current U.S. imports from Russia. Without expansion of the domestic and international allies' and partners' fuel cycle capacity, the United States cannot reliably make sufficient low enriched uranium (LEU) or high-assay LEU (HALEU) available to support the needs of today's power reactor fleet, advanced reactors, research reactors, and medical isotope production facilities. This strategic vulnerability is unsustainable.

In addition, Russia's military attacks on and subsequent seizure of Ukraine's Zaporizhzhya Nuclear Power Plant (ZNPP) and the associated heightened risks of a nuclear incident underscore the nuclear safety, security, and nonproliferation concerns of doing business with Russia in the nuclear energy area.

The Department is working to address these energy security challenges in the face of ongoing global events. As noted, the United States currently purchases a significant amount of enriched uranium from Russia. We cannot continue to infuse the Russian state with this source of income and must begin to reduce and ultimately eliminate U.S. reliance on Russia in the nuclear energy area, especially as it irresponsibly engages in strikes that disregard nuclear safety and security and a nuclear incident in Ukraine.

I want to thank this Committee for its leadership in the development of proposed legislation aimed at tackling this critically important issue facing our nation and the world. As you know, there is no quick, easy path to reduce our dependence on Russian-supplied fuels. Expanding our domestic fuel capacity will require strategic investments coupled with import restrictions that protect those investments well into the future. We must act swiftly to support domestic enrichment capabilities and prepare our industry for this transition. The Department welcomes the opportunity to work with Congress to address this national security vulnerability.

HALEU

We are developing an acquisition strategy for HALEU pursuant to Section 2001 of the Energy Act of 2020 within the context of a broader uranium strategy for the Department. The investments provided in the Inflation Reduction Act for HALEU are allowing the Department to begin helping the private sector establish a commercial U.S. HALEU production and supply chain capability for the long term, and thus begin mitigating U.S. reliance on Russia for various uranium products, including both low enriched uranium and HALEU needed to support the current fleet and future advanced reactors. The nuclear industry's response to the Department's planned acquisition strategy and financial assistance opportunities under development has helped inform the Department's uranium strategy. We are working closely with our colleagues in the National Nuclear Security Administration and Department of Defense with an eye to enabling national security missions over the longer-term.

The Department has now established a HALEU Consortium as directed by the HALEU Availability Act with over 50 members from across the nuclear industry. In addition, the Department has awarded a contract to continue the demonstration of a U.S. technology for producing HALEU and the production of a minimum of 900 kg of HALEU in the form of uranium hexafluoride. We understand that the project is on schedule to meet a milestone for completion of the demonstration and beginning of additional production later this calendar year. Finally, the Department is preparing to issue its draft HALEU acquisition strategy and will consider comments from industry in preparing the final funding announcement. In addition, we have initiated the National Environmental Protection Act (NEPA) process review for the program to establish a U.S. domestic supply chain for HALEU.

The Department supports the continued safe operation of our existing reactors, and we support a very robust and aggressive uranium strategy for low enriched uranium and HALEU. We appreciate the Committee's leadership on this issue.

Nuclear Waste

The promise of new advanced reactors can most responsibly be realized in conjunction with progress on the management of their spent nuclear fuel. The Department believes a consent-based siting process should be used for developing interim storage and disposal options to fulfill our obligations to safely and securely dispose of spent nuclear fuel and high-level radioactive waste generated by these reactors. Consistent with direction provided by Congress in the Consolidated Appropriations Act, 2023 report language, DOE is making progress on consent-based siting for one or more Federal consolidated interim storage facilities under existing authority. In December 2021, DOE issued a request for information on consent-based siting and received over 200 responses. A summary of those responses was published in September 2022 and is available at Energy.gov/consent-based-siting. The feedback DOE received recommended that funding and technical assistance be provided to enable communities and Tribes to build internal capacities to meaningfully engage with DOE in a consent-based siting process. In September of 2022, DOE issued a $16 million funding opportunity to provide resources for communities and other stakeholders interested in learning more about consent-based siting, management of spent nuclear fuel, and interim storage facility siting considerations. Applications were due in January of 2023, and we now expect to release up to $26M toward 6-16 corresponding awards this year. While the Department is working to make as much progress as it can under existing authorities, further constraints need to be addressed before DOE can construct and operate a federal interim storage facility and begin removing spent nuclear fuel from nuclear power plant sites.

Additionally, DOE is actively working with National Laboratory experts and reactor designers to collect data on proposed advanced reactor fuel forms - which typically possess multiple advantages over standard LWR fuel forms- to prepare to manage spent nuclear fuel from those reactors. More work in this area will be needed to fully understand how fuels from advanced reactors can be safely and securely incorporated into an integrated waste management system.

Price-Anderson Report

As noted in the Department's 2023 Price-Anderson Report, we recommend that the broad and mandatory coverage of the DOE indemnification remain unchanged and undiminished with respect to contractual activity within the United States and be expanded to include additional contractual activity by DOE contractors on behalf of DOE outside the United States to reflect changed circumstances. The Department stands ready to assist in extending The Price-Anderson Act (PAA), which has been a cornerstone of nuclear activities in the United States since the 1950s. In particular, the DOE indemnification of its contractors pursuant to the PAA has been a longstanding and critical component of DOE's ability to achieve its statutory missions. The PAA provides a comprehensive and equitable system of financial protection to address the concerns of both participants in nuclear activities and persons who may be injured by a nuclear incident. The PAA expires on December 31, 2025. In its recent Report to Congress on the need for continuation or modification of the PAA, the Department recommended that: (1) the PAA should continue; (2) the DOE indemnification of our nuclear enterprise should continue and expand

upon its broad and mandatory coverage; and (3) the PAA should continue in effect in a manner compliant with the Convention on Supplementary Compensation for Nuclear Damage. The Report found that renewal of the PAA would be in the best interests of DOE, its contractors, its subcontractors and suppliers, and the public. I would be happy to work with you as you consider renewal of this important Act.

Conclusion

Thank you for the opportunity to appear before the Committee today. I look forward to continuing to work with you toward a more sustainable, equitable, reliable, affordable, safe, and secure energy system for our nation. I look forward to your questions.