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Chairwoman Capito, Ranking Member Whitehouse, and esteemed members of the Committee, I appreciate the opportunity to testify today on behalf of the American Nuclear Society (ANS). ANS represents over 12,000 nuclear technology professionals who enable clean, reliable electricity generation, cancer detection and treatment through nuclear medicine, power systems for deep-space exploration and many other civil applications of nuclear technology. America's nuclear professionals also possess the skills and expertise to manage the nation's used nuclear fuel through the safe and secure storage, transportation and, ultimately, geologic disposal.

Currently, I chair the ANS Nuclear Waste Policy Task Force, but I have worked in the nuclear field for six decades and remain active as an independent consultant. I also serve as a special advisor to Japan on the Fukushima Daiichi recovery, and I recently served terms on the U.S. Nuclear Waste Technical Review Board and the Secretary of Energy's Nuclear Energy Advisory Committee.

Before retiring from federal service, I led the U.S. Department of Energy's (DOE's) Office of Civilian Nuclear Waste Management and the Yucca Mountain repository program through presidential designation and congressional approval. Earlier in my career, I was at the Nuclear Regulatory Commission (NRC), where I served as site director during the cleanup of Three-Mile Island, and I've also worked in engineering and management at DOE Defense Programs, Bechtel Power, and General Dynamics' Electric Boat division. I hold degrees in mechanical and nuclear engineering and I'm a Fellow of the American Nuclear Society.

All energy-producing technologies generate waste we must manage responsibly. The good news is that used nuclear fuel from electricity generation is a robust, compact and stable form that the nuclear industry has a strong record of storing and transporting safely. High-level radioactive waste from the reprocessing of spent nuclear fuel can also be immobilized in robust and stable forms suitable for disposal. However, these materials remain highly radioactive for many years and must be isolated from the environment for millennia. The long-standing international consensus is that such materials should

ultimately be disposed of in stable geologic formations, and several countries are making good progress toward siting and constructing repositories.

Today, U.S. electricity demand is rising rapidly, making nuclear energy more important than ever. The U.S. nuclear enterprise is responding: pursuing license renewals and uprates for existing plants, restarting shut down reactors, building new advanced reactors, and expanding domestic fuel-cycle capabilities.

This growth creates an opportunity to break America's longstanding stalemate over permanent disposal of the nation's used nuclear fuel. Growing state interest in integrated nuclear fuel-cycle and disposal projects offers Congress an opportunity to advance U.S. disposal policy, help fuel the next generation of nuclear reactors, and strengthen the U.S. nuclear industrial base, all at the same time.

ANS supports DOE's Nuclear Lifecycle Innovation Campus (NLIC) initiative. This effort has helped bring the significant economic opportunities of the full nuclear fuel cycle into focus. NLIC states are now exploring campuses that combine fuel-cycle, recycling, and disposal activities needed to support nuclear expansion, while creating high paying jobs in a growing industry sector.

Congress can assist this work through a stepwise approach that sustains willing-state participation, begins to fulfill federal obligations for used nuclear fuel, supports fuel-cycle innovation, and protects affordability, while maintaining geologic disposal as an essential part of this effort as recycling technologies and markets develop.

So as this Committee and the rest of Congress considers its near-term nuclear policy agenda: ANS recommends focusing on six priorities:

1. Enabling DOE to develop durable campus partnerships with willing host states and private partners through agreements that define activities, milestones, benefits, responsibilities and ultimate disposal pathways.
2. Authorizing the investigation of permanent-disposal pathways beyond Yucca Mountain and advance the regulatory framework needed to support them. We have learned much from Yucca Mountain and international regulatory experiences, and this knowledge can be applied to improve evaluation and regulatory processes for new potential geologic disposal sites moving forward.
3. Enabling DOE to begin accepting and removing used nuclear fuel, including fuel remaining at permanently shut-down reactor sites, through the authorities and resources

needed to take title to, transport, and store it, including for potential recycling, within a program to permanent passive geologic disposal.

4. Supporting recycling research, demonstration, and early commercial deployment as technologies and markets mature, including approaches that improve management of waste requiring geologic disposal.

5. **Providing adequate resources for DOE to carry out its statutory disposal mission**, while relying on private investment and other federal and state support for broader campus activities. This should include near term robust appropriations.

6. **Establishing clear organizational guidance for contractual performance steps** and sustainable durable partnership arrangements for host states and private industry partners utilizing our nation's exceptional commercial free market capabilities. Congress should support a dedicated office within the DOE, led by a senior official with clear authority and accountability, to develop and negotiate long-term NLIC partnership agreements with willing host states, communities, and private businesses. This organization should have the staff and resources needed to coordinate federal participation and negotiate agreements that define each party's responsibilities, obligations, milestones, and deliverables. Establishing this capacity now would help provide the continuity and predictability needed for durable partnerships, private investment, and commercially viable NLIC operations.

A key aspect for a forthcoming fruitful DOE host state and community dialogue will be that there is a clear publicly understandable appropriate regulatory framework of safety and environmental standards that can be used for the evaluation and licensing of any potential geologic disposal site that a host state may suggest for consideration. The only U.S. modern national regulatory framework that exists today is only applicable for the Yucca Mountain tuff geology and would be inappropriate for use in other geologic settings that may need to be evaluated in NLIC states.

Our existing generic EPA and NRC regulatory geologic disposal framework for used nuclear fuels and high-level radioactive wastes from recycling is over 40 years old and inconsistent with international norms, such as those being used at all other countries that are making geologic disposal progress. Thus, to support the forthcoming NLIC process disposal site evaluations, our country needs to update our standards and regulations for a clear public understanding of the substantial safety and environmental precautions that will be in place for any type of disposal facility site in any geologic setting.

Here in the U.S., we have learned much from the evaluation and licensing process of Yucca Mountain and other recent international experiences as well. These experiences need to

be applied to improve past regulatory processes for efficiency and public understanding of the extensive safety and environmental protections being applied to all nuclear disposal facilities that may be evaluated, selected, licensed, constructed, operated, and decommissioned in any state in any geologic media setting.

Historically, many organizations and studies have highlighted the need for updated U.S. generic repository standards. To address the need for modern scientifically based geologic disposal standards for spent nuclear fuel and high-level wastes from possible recycling, the American Nuclear Society in 2022 established a Special Committee on Generic Standards for Disposal of High-Level Radioactive Waste to produce a scientific report to serve a catalyst for EPA and NRC to update their geologic disposal standards and regulations which would be applicable for any type of design or geologic media setting. I had the personal honor of serving on that special committee and our comprehensive report was published in 2023, which is available here: https://www.ans.org/policy/repositorystandard/.

We recommend that Congress work with DOE, EPA and NRC to support the development of a final safety and environmental regulatory framework that can be used by the DOE, states, communities, and the public at large, as they work together to establish safe and environmentally protective operational geologic disposal facilities in appropriate locations.

We strongly urge timely action because development of such a regulatory framework is a time-consuming process. EPA took more than a decade to put the previous generic repository standard in place and more than a decade and a half to promulgate a Yucca Mountain-specific standard. Because developing new standards can take many years, EPA and NRC should begin this effort now.

In closing, our Society believes tangible near term progress on these six key priorities is within Congress's near-term reach. Action now can help accelerate the safe and effective expansion of nuclear energy. Our nation is now at a point to be able to finally break out of our 16-year doldrum and move forward with willing state and private industry partners to create a revised integrated innovative nuclear waste management policy that can serve all American's now and for hundreds of generations into the future. Together, we can do this.

Thank you for the opportunity to testify. I look forward to your questions.