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**Testimony of Dr. Jeff Waksman
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Before the Committee on Energy and Natural Resources
United States Senate
November 30, 2023**

(U) Thank you, Chairman Manchin, Ranking Member Barrasso, and distinguished Members of the Committee for the opportunity to testify before you today on the Department of Defense's efforts associated with advanced nuclear reactor commercialization. It is an honor and privilege for me to appear before you today.

(U) My name is Dr. Jeff Waksman, and I am the Program Manager for Project Pele, a prototype transportable micro nuclear reactor, within the Strategic Capabilities Office (SCO) of the Office of the Secretary of Defense (OSD). Project Pele is a 1-5 megawatt nuclear reactor prototype demonstration designed to fit within four 20-foot shipping containers, capable of being transported by truck, rail, boat, and plane, able to be set up and moved within several days. Using tri-structural isotropic (TRISO) fuel, Pele is designed to be passively safe in all failure modes.

(U) The Department of Defense, through SCO, initiated Project Pele in the fall of 2018. I have been the program manager for this program since its inception. Modern warfare is critically dependent on large quantities of electricity to power almost everything, from missile defense radars, to command and control systems, to uncrewed weapons systems and platforms. There are significant mission impacts to the Department without access to reliable, resilient 24/7 power. The strategic need for electrical power at Defense installations is critical, yet today that electricity is largely dependent upon the delivery of large volumes of fossil fuels to power generators.

(U) Moving fossil fuels safely was a significant challenge even in Iraq and Afghanistan, leading General Mattis to declare a desperate need to "unleash us from the tether of fuel"¹. When the Department plans for future competition and conflict with near-peer adversaries, the challenge to move fossil fuel across thousands of miles of ocean is immense. Consistent with the *2022 National Defense Strategy*, innovative clean energy technologies such as nuclear power are a true potential gamechanger. Additionally, transportable nuclear microreactors provide the capability to support remote outposts or to respond quickly when natural disasters destroy existing power generation infrastructure.

¹ (U) Nomination Hearing: James Mattis Secretary of Defense, U.S. Senate Committee on Armed Services, January 12, 2017

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(U) SCO undertook a design competition for Project Pele, with three companies initially selected in early-2020 to develop preliminary designs. We eventually down-selected to a single prime contractor, BWXT Advanced Technologies LLC, which is currently working to finalize the last details of the design while manufacturing fuel and purchasing long-lead hardware. SCO is working with the Department of Energy to gain approval of the Pele engineering design by mid-2024. We have already begun fabricating fuel, making moderator blocks, and forging the containment vessel. Our team is on pace to have the Pele reactor assembled by mid-2025.

(U) As part of the Administration's *Strategy for Re-Establishing U.S. Leadership in Nuclear Energy*, the United States is focused on the development of markets for U.S. nuclear technology exports to provide reliable, always-on, emissions-free electricity and power and with bipartisan support is working to scale up U.S. technology deployment, including small modular reactors and microreactors, secure and sustain the nuclear fuel supply chain, enhance energy security and resilience, strengthen nuclear safety, security, safeguards, nonproliferation, and compete globally.

(U) Given current and emerging threats, the military has a need for reliable 24/7 resilient power without a long logistics tail, and may be willing to pay a little extra per kilowatt-hour to make that happen. By demonstrating the Pele reactor, we can collect the data and perform the safety analyses to help inform the regulatory and supply chain pathways to commercial reactor variants.

(U) In closing, I would like to thank Congress for its continued strong bipartisan support of Project Pele. And in light of Chairman Manchin's announced retirement at the end of the 118th Congress, I would like to personally thank him for his steadfast support of Project Pele. I can state definitively that this program would not have proceeded to where it is without his support.

(U) Thank you to the entire Committee for calling this hearing and for the opportunity to testify. I look forward to your questions.