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BEFORE THE

U.S. SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

FULL COMMITTEE HEARING ON NUCLEAR ENERGY

I. INTRODUCTION

My name is Scott Melbye and I am the Executive Vice President of Uranium Energy Corp (UEC) with operations in the states of Wyoming and Texas. As a second-generation American uranium miner, I am proud to serve as the President of the Uranium Producers of America (UPA), the trade association representing the domestic uranium mining and conversion industry. It is an honor to testify before the Senate Energy and Natural Resources Committee on restoring American leadership in the global nuclear energy industry. I have been fortunate to have been involved in the nuclear industry for the past 36 years in every facet of the international fuel cycle from the production and global marketing of uranium to its use as clean-energy fuel in the three-unit Palo Verde Nuclear Station near Phoenix, Arizona.

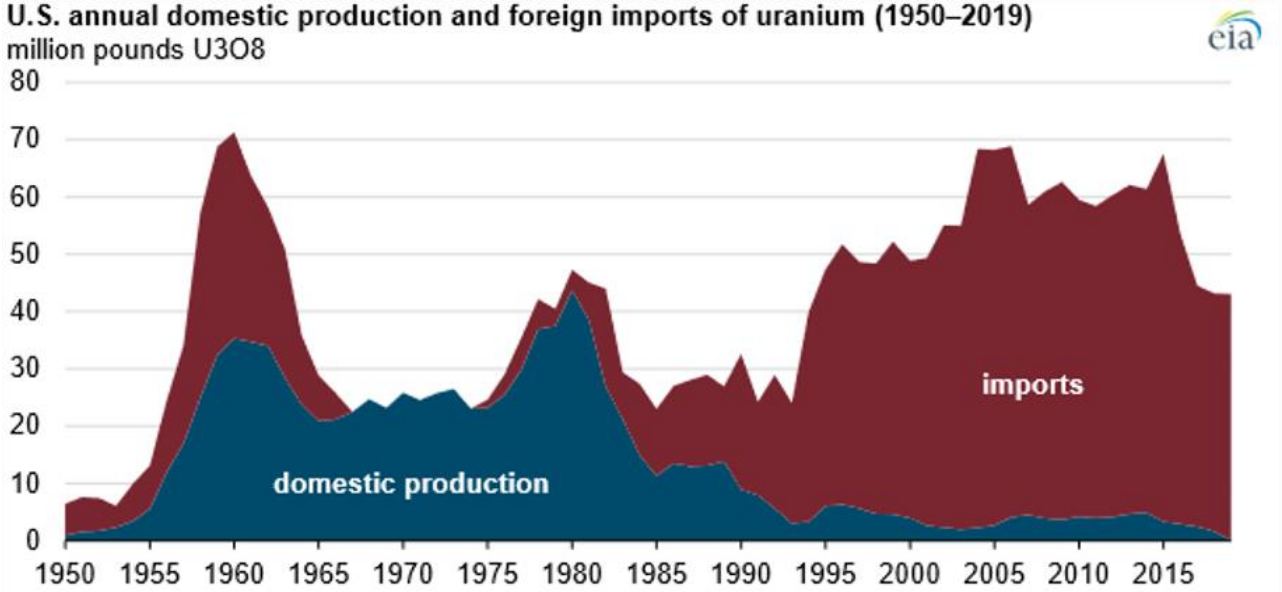
UPA's mission is to promote the viability of the nation's uranium industry, while being good stewards of the environments in which we work and live. UPA members conduct uranium exploration, development and mining operations in Arizona, Colorado, Nebraska, New Mexico, Texas, Utah, and Wyoming. Our membership also includes the lone remaining conversion facility in the United States in Illinois and the last operating conventional uranium mill in the United States in Utah. The UPA is committed to the preservation and expansion of America's capacity to produce its own uranium in support of clean energy and national security objectives.

This is an exciting time for nuclear energy, which is already providing electricity to 1 in 5 American homes and businesses and over half of our nation's carbon-free power. With the incredible potential of small modular and advanced reactors, nuclear power can work hand in hand with other green technologies, like wind and solar, to lead the clean energy revolution. But to fully unlock nuclear power's ability to help us achieve our clean energy goals, the United States must re-establish its global nuclear leadership, including restoring a robust domestic nuclear fuel cycle that has been eroded by Russia, China, and state-owned uranium production entities in recent years. Building on Congress' recent appropriation to begin uranium purchases to fill the Strategic Uranium Reserve by ensuring full funding for the program moving forward is a necessary step towards ensuring our nuclear energy self-sufficiency.

II. STATE-OWNED ENTITIES THREATEN U.S. CLEAN ENERGY SELF-SUFFICIENCY

America is dangerously close to losing our uranium fuel cycle expertise and industrial base. We currently lack a domestic uranium enrichment capacity that is completely free of control by foreign powers. The sole remaining U.S. conversion facility, located in Illinois, has been idle since 2017 and will restart full operations in 2023. U.S. nuclear utilities are almost completely dependent on foreign imported uranium and the uranium mining industry is on the verge of disappearing.

The U.S. was once a global leader in uranium production, producing more than 40 million pounds annually in the early 1980s at a time when the domestic industry employed more than 21,000 Americans. Despite the existence of vast uranium resources in the United States, the lack of commercial purchasing of domestic uranium has driven production and employment to historic lows not seen since the dawn of the industry in the 1940s. U.S. uranium production in 2019 fell to 174,000 pounds, the lowest amount since the U.S. Energy Information Administration (EIA) began collecting this data in 1949. This is only a fraction of the material needed to power even one of the United States' 94 commercial nuclear reactors. The EIA's quarterly reports for 2020 have continued to show record low production levels.



As the domestic industry has been forced to downsize, we have lost considerable talent and expertise that will become increasingly difficult to replace. Operating these facilities requires trained, experienced, and skilled engineers, geologists, scientists, technicians, and operators. Several of these facilities are in economically challenged regions. However, EIA reports that the total employment in the uranium mining and milling industry is approximately only 265 people as total employment fell by over 83% between 2008 and 2019.[1]

Price-insensitive imports from state-owned entities (SOEs) threaten the continued existence of the U.S. domestic industry, especially uranium imported from the countries of the Former Soviet Union (FSU) – Russia, Kazakhstan, and Uzbekistan. In response to adverse market conditions, U.S. mine production of uranium dropped more than 95 percent between 2010 and 2019.[2] This was not the case from SOEs; they ignored the market, increased their total supply, and further suppressed prices at the expense of free market competition in the United States, Canada, and Australia. SOEs engage in predatory pricing designed to drive competition out of a market. The Department of Commerce's June 2020 Post Preliminary Analysis Memorandum regarding the Russian Suspension Agreement determined that Russian imports to U.S. utilities were contributing to the suppression and undercutting of domestic price levels.[3]

U.S. companies are not competing with free market companies in the FSU; we are competing with their governments who are taking advantage of our free market system. Displacing U.S. supply, imports from SOEs in Russia, Kazakhstan and Uzbekistan have averaged over 40 percent of U.S. commercial reactor requirements since 2010. As of 2019, uranium imports from

[1] 2019 Domestic Uranium Production Report, EIA May 2020, Table 6
[2] 2019 Domestic Uranium Production Report, EIA May 2020, Table 9
[3] Post Preliminary Analysis Memorandum in the 2017 – 2018 Administrative Review of the Agreement Suspending the Antidumping Investigation on Uranium from the Russian Federation, Joseph A. Laroski Jr., U.S. Department of Commerce, June 17, 2020

the FSU climbed to over 47 percent of U.S. reactor demand, the highest percentage over the last decade.[4]

Chinese SOEs are also working to increase their share of the global market. Chinese entities own large inventories and subsidize large uranium mines that are expanding production despite having costs that are far above the current market price of uranium. When a Chinese government-backed entity takes a controlling interest in uranium mines, as it has done in Africa for example, this takes supply out of the free-market and puts it under Beijing's control. This is reminiscent of China's success in taking control of other critical supply chains, such as rare earth elements. Data from the International Trade Commission (ITC) show that imports of enriched uranium from China have been occurring since 2015 and U.S. nuclear utilities have spent more than $200 million on Chinese enriched uranium.[5] Expanding Chinese enriched uranium imports would further displace U.S. uranium supply.

Russia and China leverage energy dominance to their geopolitical advantage. The federal interagency Nuclear Fuel Working Group's (NFWG) April 2020 report stated: "The ability of foreign state-owned enterprises to utilize the nuclear fuel cycle to establish dominant market positions and enduring bilateral relationships can pose significant geopolitical challenges for the United States."[6] The NFWG further stated that "[t]his reality threatens American energy security, narrows or eliminates foreign policy options and erodes American international influence to set strong non-proliferation, safety and security standards … Russia – a nation that has 'weaponized' its energy supply as an instrument of coercion – dominates nuclear markets." Russia and China are playing a long game in a way America is not, using their nuclear energy clout to strengthen geopolitical ties with energy-starved countries around the world.

III. DOMESTICALLY MINED URANIUM IS CRITICAL FOR CLEAN ENERGY SECURTY AND NATIONAL SECURITY

The U.S. Department of the Interior defines uranium as a critical mineral "essential to the economic and national security of the United States, the supply chain of which is vulnerable to disruption, and that serves an essential function in the manufacturing of a product, the absence of which would have significant consequences for the economy or national security." Nuclear energy provides 20 percent of our electricity and over half of our carbon-free power, bolstering clean air initiatives across the country. The domestic uranium infrastructure and nuclear fuel supply chain are crucial for today's fleet of commercial nuclear reactors as well as the nuclear technologies of the future.

Uranium is also key to our naval propulsion program and nuclear deterrence, underpinning its status as a critical mineral. The small modular reactors in our fleet of aircraft carriers and submarines have defended our interests safely, efficiently, and reliably for decades. These reactors must be fueled by U.S.-origin uranium that is unobligated to the controls of foreign nations and we must retain our ability to independently refuel them. The production of tritium at the Tennessee Valley Authority (TVA) also requires U.S.-origin uranium, as would the fueling of small modular reactors and micro-reactors under consideration by the U.S. military to provide more secure and resilient power sources for military facilities. Absent a renewed federal commitment to a robust

[4] EIA Uranium Marketing Annual Reports - Tables 3 and 18
[5] Imports of Uranium Products from China (Customs Value), U.S. International Trade Commission, 2020
[6] Restoring America's Competitive Nuclear Energy Advantage: A strategy to assure U.S. National Security (Department of Energy, April 23, 2020).

American nuclear fuel cycle infrastructure, we are jeopardizing our defense capabilities and the contribution of nuclear technologies to our clean energy goals.

IV. THE STRATEGIC URANIUM RESERVE WILL PRESERVE THE URANIUM INDUSTRIAL BASE

The similarities of the challenges facing the uranium industry to our rare earth mineral dependance on China are startling. The NFWG determined that "America is on the brink of losing its ability to provide U.S.-origin nuclear fuel, threatening our national interest and national security."[7] But it is not too late to take control over our clean energy future.

American's uranium producers are cost-competitive globally but for the price undercutting tactics of SOEs. Given a level global playing field, the domestic uranium industry has the capacity to produce significant quantities of cost-competitive uranium. According to the EIA, currently licensed/partially licensed operating and standby in situ recovery production capacity is about 22 million pounds of uranium concentrate production per year. Licensed conventional mill capacity equates to approximately 24 million pounds of uranium concentrate production per year. This annual capacity of 46 million pounds is almost the same amount of the average amount of uranium loaded into U.S. reactors from 2010-2019 (46.6 million pounds).[8] There are also significant uranium resources for the future. The U.S. Geological Survey reports that the U.S. holds approximately 1.2 billion pounds known, reasonably assured, and inferred resources, and that it has more than three times that amount in prognosticated undiscovered resources.[9]

[7] Restoring America's Competitive Nuclear Energy Advantage: A strategy to assure U.S. National Security (Department of Energy, April 23, 2020).
[8] EIA Uranium Marketing Annual Reports – Table 18
[9] Critical Analysis of World Uranium Resources, U.S. Dept. of Interior, U.S. Geological Survey, Susan Hall and Margaret Coleman, 2012

With swift action to level the playing field for free market companies, we can take advantage of the licensed infrastructure, human resources, and production capacity we still have on standby by implementing the Strategic Uranium Reserve at the Department of Energy (DOE). Congress appropriated $75 million for uranium purchases to fill the reserve on a bipartisan basis in the December 2020 omnibus appropriations bill. We urge DOE to move quickly to begin purchasing uranium this year, serving the three-part purpose of preserving the industrial base, creating a fuel reserve to guard against global supply disruptions, and creating a source of U.S.-origin uranium for future defense needs. We also urge Congress to grant the uranium reserve the full $150 million in annual funding over the next ten years, as recommended by the NFWG report as well as DOE in its Fiscal Year 2021 budget request. $150 million per year is a modest and sound investment considering it will procure a valuable, strategic asset for the federal government and preserve the nuclear fuel cycle in the U.S. instead of ceding it to Russia, China, and their allies.

V. CONCLUSION

In closing, I applaud the Committee for exploring ways to advance America's nuclear leadership and capabilities in support of clean energy goals, national security, and our global competitive presence. We look forward to working with the Committee to preserve today's nuclear infrastructure and supply chain, while also advancing a clean, reliable, and safe energy future for the U.S. in the form of advanced nuclear energy technologies.