THIRD WAY

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Building the Nuclear Workforce: Unleashing American Nuclear Home and Abroad

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Takeaways

- Over the past decade, Congress has enacted a number of new laws, with broad bipartisan support, to facilitate the deployment of new nuclear reactors in the United States and abroad. Meeting these ambitious goals will require a sizable and well-trained workforce to enable scaled nuclear deployment.

- Growing the nuclear workforce will also enable US leadership in international markets; doing so requires both programs and funding that are appropriated but not currently available.

- The Administration and Congress should partner to release the funds already appropriated in FY2024 for the Nuclear Safety Training and Workforce Development Program, designed to establish regional workforce consortia, and then establish this as a new permanent budget line. They should then expand the use of these workforce consortia beyond domestic programs to support international development through programs such as the Department of State FIRST Program.

The Maturation of an Advanced Nuclear Ecosystem

The nuclear energy ecosystem in the United States has changed dramatically over the last decade. Emerging from what had been a research-focused approach were a set of new, commercially funded, and entrepreneurial-focused companies. First recognized in 2015, the number of these companies tripled by 2022. Federal programs were proposed and implemented to provide support for these new companies. New thinking emerged about what advanced nuclear energy could look like. Fresh ideas were recommended for bringing new communities into discussions of deploying nuclear energy. New tools were developed to support siting studies. Congress has passed legislation to facilitate the deployment of new nuclear energy facilities. Companies are now moving towards constructing new reactors and looking to demonstrate new concepts over the next few years. Over thirty countries agreed to support tripling the amount of nuclear energy used worldwide by 2050.

Unleashing American Nuclear Energy

The Trump Administration has strongly signaled its intention to build on the success of the last decade and accelerate the deployment of advanced nuclear. One manifestation of this was the issuance of four executive orders (EOs) in May to "unleash innovation, and restore America's position as the world's leading energy producer." The executive orders outlined a high-level objective of 400 GW of new nuclear energy in the US by 2050 and an explicit mandate to "create tens of thousands of high-paying jobs." The degree of ambition contained within these orders reflects the urgency of meeting spiraling load growth at home and making US companies the international vendors of choice when competing with reactor concepts from Russia and China.

There remain significant concerns and question marks regarding how policies articulated in the orders will be executed. While the administration may be well-intentioned with the goals it set out in the EOs, there is not a clear path towards achieving its ambitions with available funding and staffing resources. In some cases, the EOs put forth policy directives that are at odds with accelerating deployment: particularly the administration's present approach to implementation of NRC reform, which has elicited concerns regarding negative implications for the agency's independence, credibility, and capacity.

For example, current developments at NRC have underscored the scarcity of nuclear technical expertise and the importance of having sufficient workforce resources, amid the agency's ongoing loss of staff capacity. A robust US nuclear workforce is essential for both domestic and overseas deployments of American reactor technologies, to say nothing of the regulatory workforce necessary to carry out the NRC's vital roles in supporting these deployments.

Importance of Workforce

While the administration has emphasized the need to expand the American workforce, the federal government needs the resources and means to feasibly achieve such an expansion. Trained experts are needed to enable new nuclear growth, both at home and abroad. Specific guidance was given to the Secretaries of Labor, Education, and Energy to make nuclear engineering and nuclear energy-related careers a national priority. For example, the executive order on Reinvigorating the Nuclear Industrial Base makes it a priority for States and grantees to use funding provided by the Workforce Innovation and Opportunity Act (WIOA) "to develop nuclear engineering and other nuclear energy-related skills."

To successfully grow America's nuclear engineering workforce, we need to identify, train, and further develop skilled staff across a range of skills at the state and regional levels. For instance, WOIA "provides resources, services, and leadership tools for the public workforce system to help individuals find good jobs and stay employed and improves employer prospects for success in the global marketplace" and "ensures that the public workforce system operates as a comprehensive, integrated,

and streamlined system to provide pathways to prosperity for those it serves and continuously improves the quality and performance of its services." To meet the goals of the act, states developed processes for public and private sector leaders to share experiences and develop strategies to grow a strong workforce. These partnerships need to be specifically expanded for nuclear energy careers.

Similarly, for US vendors to deploy internationally, the US must establish and execute programs to train workers that can be leveraged to advance workforce development in countries new to nuclear energy. Workforce training is a critical component of international competitiveness, as China and other competitors are actively cultivating R&D and training partnerships with prospective international markets. In response, the US must be intentional in engaging in workforce training and capacity-building programs with countries interested in American nuclear technology; such activities can facilitate commercial partnerships over time. The US Department of State recognizes this need through its Foundational Infrastructure for Responsible Use of Small Modular Reactor Technology (FIRST) program. FIRST could be best supported by the same system of regional training programs envisioned in the Reinvigorating the Nuclear Industrial Base executive order.

Like other parts of these executive orders, the motivation may be sound, but the associated policy implementation details for workforce programs don't yet provide a path to meeting the goals of the order. How can the US quickly move forward on nuclear energy workforce programs?

Nuclear Safety Training and Workforce Development Program

Fortunately, the US has a runner in the starting gate for forming regional workforce programs, the Nuclear Safety Training and Workforce Development Program. This program was funded in the fiscal year 2024 budget at $100 million with a goal to "(1) ensure the nuclear fleet has a trained, dedicated workforce necessary to maintain safe and efficient operation; (2) create or expand upon one or more industry-recognized nuclear reactor safety credential; and (3) establish consortia to address gaps between skilled training needs and current nuclear workforce." Although proposals for the first $50 million have been submitted to the Department of Energy to create regional workforce consortia across the country that pair industry with registered apprenticeships and career/technical education programs, the administration has yet to issue decisions on these initial submissions and has not requested proposals for the remaining appropriated funds in the program. The administration could transform US workforce programs by making decisions on the current set of proposals, competing for the second tranche of funding, and then creating a new program to continually refresh these consortia.

Policy Implications and Recommendations

The administration's goal to expand the nuclear workforce is important, and it has a ready means to advance that goal through the funded Nuclear Safety Training and Workforce Development Program. The next steps are simple:

In the White House

- Make decisions on the proposals submitted in response to the first set of proposals submitted to this program's offer of up to $50 million for the creation of regional workforce consortia.
- Request proposals for the second $50 million to finish the job of establishing regional consortia.
- Create a new program at $20 million per year for competitive proposals to innovate and update the approaches used by the regional consortia.
- Make efforts to link US regional workforce consortia formed via the aforementioned actions to overseas regional nuclear training hubs and centers established by the US Department of Energy.

In Congress

Authorize, appropriate, and expand (i.e., double the budget) the FIRST program, encouraging use of the new regional consortia; this could potentially be achieved through the recently reintroduced *International Nuclear Energy Act of 2025*.

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