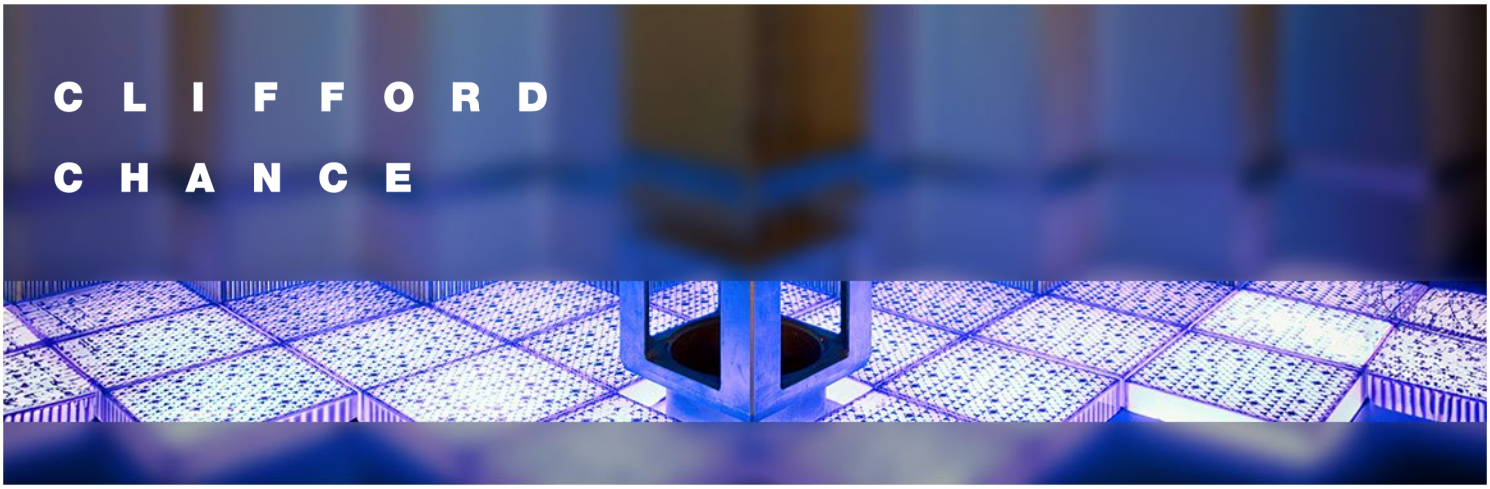

REFORMING, REINVIGORATING, DEPLOYING: NUCLEAR ENERGY IN THE US

Through a series of four Executive Orders[1] signed on May 23, 2025 (the Executive Orders), the Trump Administration has announced a new set of efforts to reform regulations for the nuclear energy industry in order to ramp up the development of nuclear supply chains and reactor deployment (both restarts and new deployments of large reactors and small modular reactors) in the US.[2] The Executive Orders reflect a broad approach to reinvigorating and "restarting" the US domestic nuclear energy industry, and have been met with enthusiasm in the US following earlier announcements that the Trump Administration would more actively support nuclear power project development. On June 11, 2025, the World Bank also announced that it would end its decades-long ban on the financing of nuclear energy projects, in part due to advocacy by the Trump Administration and the new German government's policy change on nuclear. Despite the US enthusiasm around nuclear power, the reality is that a gap remains between the Administration's rhetoric and the long-term nature of investing in nuclear projects. The US nuclear industry is a long way from achieving the goals set forth in the Executive Orders in the near term, and the Trump Administration likely will need to take additional action to inspire confidence in the US' long-term commitment to nuclear energy and catalyze investment in US nuclear projects.

The Executive Orders, as outlined below, call for coordination among cabinet-level agencies, including the Department of Energy (DOE) and the Department of Defense (DOD) to facilitate the siting and development of new nuclear fuel facilities, test reactors, and pilot projects for advanced reactor

[1] Reinvigorating the Nuclear Industrial Base; Reforming Nuclear Reactor Testing at the Department of Energy; Ordering the Reform of the Nuclear Regulatory Commission; Deploying Advanced Nuclear Reactor Technologies for National Security

[2] A summary of key points from each of the Executive Orders is included at the end of this briefing.

technologies. The Executive Orders also call for reforms at the DOE and the Nuclear Regulatory Commission (NRC) to support these efforts. Implementation of the Executive Orders, however, will require navigating and aligning the "push and pull" factors of numerous industry participants, regulators, and communities. Some key issues facing the sector include building and maintaining a skilled workforce, construction timelines and cost, regulatory reform, fuel supply, and financing.

Workforce and Construction

Designing and testing reactors, and the manufacturing and fabrication of reactors and reactor components, require skilled nuclear scientists, engineers, and technicians. The Executive Orders prioritize reestablishing and further developing a US "nuclear industrial base." This is critical, since construction timelines and budgets for traditional reactors have historically overrun estimates, and the industry is far from delivering consistent project development outcomes even for traditional large-scale reactors. For the new generation of small modular and micro-reactors, the challenge will be to scale from initial pilot project plans to "first of a kind" testing deployments to "Nth of a kind" commercial production at volumes sufficient to reach economies of scale sufficient to offset significant capital outlays. There is a concern among many in the industry that the US has limited construction expertise necessary to build and scale up new nuclear projects.

Regulatory Reform

Many of the directives in the Executive Orders are aimed at regulatory reform to streamline the nuclear project development and licensing regimes, including the environmental "NEPA" process and by siting reactors on federal land. While reform efforts at the NRC and DOE may jumpstart timelines for permitting and speed up the regulatory process, there may be limitations on what the Executive Orders can accomplish, e.g., whether siting reactors on federal land could bypass the NRC licensing regime. Although practical aspects of nuclear project development may continue to temper new deployment ambitions, the scope and application of the proposed regulatory reform efforts will be critical to shorten the timelines necessary to develop new projects.

Fuel Supply

The current fleet of reactors, and the next generation of reactors, operate with different forms of enriched uranium fuels, e.g., High-Assay Low Enriched Uranium (HALEU), and require complex supply chains for the mining, processing, conversion, and enrichment of uranium, which historically has been sourced globally. The Executive Orders acknowledge the reality of the complex global supply chain and prioritize the creation of policies and making investments in fuel supply development and disposal. Whether or not this shift in the nuclear supply chain can occur at the pace envisioned in the Executive Orders will be important to monitor.

Financing

The US nuclear industry has been navigating complex national and state-level market forces for many years, and there has been a "confidence gap" that the government would support nuclear. The demand signals provided by the Executive Orders for reactor testing and deployment align with the short- and long-term demand and growth for baseload energy in the US due to

electrification and the proliferation of AI and data centers. Nevertheless, the private sector alone has not been able to provide sufficient financing or offtake demand to maintain the growth of nuclear projects in the US. Bridging the financing gap, and aligning short- and long-term interests, will require federal government support and take significant effort and coordination between the public and private sectors. The Executive Orders highlight the role of private finance and some of the federal legislative tools available to provide public support. However, the federal agencies and energy development programs expected to carry out these plans, including financing that could be made available by the DOE's Loan Programs Office (LPO), face political headwinds, staffing shortages following deferred resignations, and budget pressure. The current version of the budget reconciliation bill passed by the US House of Representatives would maintain a tax credit available for nuclear projects (the 45U production tax credit), and, after lobbying from the Secretary of Energy, would maintain existing loan authority for the LPO; but eliminates unused credit subsidy funding from the Inflation Reduction Act, which could affect the LPO's ability to operate.

Conclusion

The development of nuclear projects requires long-term investment. The Executive Orders send a strong signal to the US energy sector regarding the Administration's commitment to ensuring the US will be a leader in the development and deployment of nuclear projects going forward. However, this is only a first step – to catalyze investment, the federal government will need to move swiftly and decisively in the short term and inspire confidence in its long-term commitment to nuclear energy in the US. The US can learn from other jurisdictions that have had recent experience in nuclear project development, including the United Kingdom and France, by ensuring continuity of industry support despite changes in government. The Clifford Chance team has experience in many of the jurisdictions where nuclear projects are currently being developed, is monitoring these developments, and will continue to provide updates.

Executive Orders

Ordering the Reform of the Nuclear Regulatory Commission[3]

1. Establishes a national policy to reassert the US as a global leader in nuclear energy and expand nuclear capacity from approximately 100 GW in 2024 to 400 GW by 2050.
2. Requires the NRC to reorganize its structure and staffing to expedite license processing and promote adoption of innovative technology, including reductions in workforce and creation of a dedicated team for regulatory drafting.
3. Mandates a comprehensive review and revision of NRC regulations and guidance, with fixed deadlines for license decisions and caps on hourly fees, and directs the adoption of science-based radiation limits, reconsidering the "linear no-threshold" model.
4. Instructs the NRC to revise its environmental review process, establish expedited pathways for certain reactor designs, and streamline licensing for microreactors and modular reactors.
5. Directs the facilitation of new nuclear reactor technologies, including "Generation III+ and IV reactors, modular reactors, and microreactors," by reducing regulatory and cost barriers.
6. Supports continued operation and potential reactivation of existing, prematurely shuttered, or partially completed nuclear facilities.
7. Calls for the use of emerging technologies to accelerate the modeling, simulation, testing, and approval of new reactor designs.
8. Requires the NRC to set stringent thresholds for design changes during construction, revise oversight and security rules, and extend license renewal periods as appropriate.
9. Directs the NRC to streamline the public hearings process and ensure that safety assessments focus on "credible, realistic risks."
10. Affirms that the NRC must consider the economic and national security benefits of nuclear power alongside safety, health, and environmental considerations.

Reforming Nuclear Reactor Testing at the Department of Energy[4]

1. Establishes a policy to accelerate domestic development and deployment of advanced nuclear technologies, emphasizing their importance for energy reliability, national security, and industrial applications.
2. Mandates the streamlining of environmental reviews, including reforming rules for compliance with the National Environmental Policy Act (NEPA), creating categorical exclusions, and utilizing alternative procedures where appropriate.
3. Requires the formation of a team to assist applicants with substantially complete applications for qualified test reactors, ensuring direct reporting to the Secretary of Energy and prioritization of such projects.

[3] https://www.whitehouse.gov/presidential-actions/2025/05/ordering-the-reform-of-the-nuclear-regulatory-commission/

[4] https://www.whitehouse.gov/presidential-actions/2025/05/reforming-nuclear-reactor-testing-at-the-department-of-energy/

4. Asserts that advanced reactors under the DOE's control, which do not produce commercial electric power, are for research purposes and fall within the DOE's jurisdiction.
5. Directs the Secretary of Energy to issue guidance on what constitutes a qualified test reactor within 60 days and to revise relevant regulations and procedures within 90 days to expedite review, approval, and deployment of advanced reactors.
6. Initiates a pilot program for reactor construction and operation outside of the National Laboratories, with a goal of approving at least three reactors and achieving criticality in each by July 4, 2026.
7. Instructs the Secretary of Energy to collaborate with other federal officials and offices to implement these measures, while clarifying that existing legal authorities and budgetary processes remain unaffected.
8. Defines key terms such as "advanced reactor," "Department," "qualified test reactor," and "Secretary" for the purposes of implementation.

Reinvigorating the Nuclear Industrial Base[5]

1. Establishes a national policy to expedite and promote the production and operation of nuclear energy, aiming to provide affordable, reliable, safe, and secure energy, and to build supply chains supporting industrial and digital dominance, energy independence, and national security.
2. Directs the Secretary of Energy, in coordination with other agencies, to prepare a report recommending national policy for managing spent nuclear fuel, developing advanced fuel cycle capabilities, and evaluating reprocessing and recycling processes, including legal and legislative considerations.
3. Requires the development of a plan to expand domestic uranium conversion and enrichment capabilities to meet projected civilian and defense reactor needs, with specific attention on low enriched uranium, high enriched uranium, and HALEU.
4. Halts the surplus plutonium dilute and dispose program, except for legal obligations to South Carolina, and establishes a new program to process surplus plutonium for use in advanced nuclear fuel fabrication.

   Updates the Department of Energy's excess uranium management policy to align with new policy objectives and prioritizes contracting for fuel fabrication facilities capable of supplying test or pilot reactors within three years.
5. Utilizes authority under the Defense Production Act to seek voluntary agreements with domestic nuclear energy companies for cooperative procurement of nuclear fuel and to enhance the capability to manage spent nuclear fuel, including recycling and reprocessing.
6. Prioritizes funding and support for restarting closed nuclear power plants, increasing output of operating plants, completing suspended construction, and building new advanced reactors, including through grants, loans, and other federal support.

[5] https://www.whitehouse.gov/presidential-actions/2025/05/reinvigorating-the-nuclear-industrial-base/

7. Calls for coordination amongst the DOE and DOD to assess the feasibility of repurposing closed nuclear plants as energy hubs for military microgrid support.
8. Expands support for nuclear energy workforce development by prioritizing nuclear engineering and related careers in federal education and training programs, increasing access to research infrastructure, and encouraging participation in apprenticeships and technical education.
9. Specifies that all actions must comply with applicable law, budgetary and procurement requirements, and nonproliferation obligations, and clarifies that no new rights or benefits are created for any party.

Deploying Advanced Nuclear Reactor Technologies[6]

1. Establishes a national policy to accelerate the development, deployment, and use of advanced nuclear technologies to support national security objectives, including the protection and operation of critical infrastructure and defense facilities.
2. Directs the DOD, through the Secretary of the Army, to create a program for utilizing nuclear energy at military installations and to commence operation of a nuclear reactor at a domestic military base or installation by September 30, 2028.
3. Assigns the Secretary of the Army as the executive agent for both installation and operational nuclear energy across the DOD.
4. Requires the DOE to provide technical advice on advanced nuclear reactor projects at military installations and to designate sites for deployment of advanced nuclear reactor technologies at DOE facilities, including national laboratories.
5. Instructs the DOE to identify and release uranium and plutonium materials for use as nuclear fuel, establish a fuel bank with at least 20 metric tons of HALEU, and ensure a long-term domestic supply of enriched uranium.
6. Calls for interagency coordination between the DOD and DOE to support research, development, construction, and operation of advanced nuclear reactor technologies for mission assurance and military readiness.
7. Directs compliance with NEPA by consulting on categorical exclusions, emergency permitting procedures, and alternative arrangements for siting and constructing advanced nuclear reactor technologies.
8. Tasks the Secretary of State with leading diplomatic engagement and negotiations for international nuclear cooperation agreements, pursuing at least 20 new agreements, and renegotiating those set to expire within the next decade.
9. Requires expedited review and adjudication of export authorization requests for nuclear technology, with a 30-day decision timeline after application completion, subject to necessary concurrences and assurances.
10. Mandates the development of strategies to optimize US government financing and trade promotion tools to support American nuclear technology exports and enhance global competitiveness.

[6] https://www.whitehouse.gov/presidential-actions/2025/05/deploying-advanced-nuclear-reactor-technologies-for-national-security/

11. Prioritizes the issuance of security clearances necessary for the rapid distribution and use of nuclear energy and fuel cycle technologies.
12. Specifies that all actions must adhere to applicable legal requirements, nonproliferation obligations, and the highest safety and security standards.

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