Insight

Trump’s Nuclear Executive Orders: Overview and Analysis

SHUTING POMERLEAU | JUNE 3, 2025

Executive Summary

- President Trump signed four executive orders (EOs) on May 23, 2025, intended to significantly boost U.S. deployment of advanced nuclear technologies through directives such as expediting regulatory review processes, promoting nuclear energy exports, and reforming the Nuclear Regulatory Commission.
- There are several existing policies that support the development of nuclear energy, including the 2024 bipartisan Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act (ADVANCE Act) and tax incentives in the 2022 Inflation Reduction Act for nuclear power production.
- Looking forward, several developments would determine the effectiveness of the EOs, including the interaction with the implementation of the ADVANCE Act, the administration’s pending action to repeal rules that require compliance with the National Environmental Policy Act, and other non-regulatory factors such as electricity demand and high upfront capital costs of nuclear energy projects.

Introduction

On May 23, 2025, the Trump Administration issued four executive orders (EOs) to direct relevant federal agencies to support the development and deployment of nuclear energy. These EOs are aimed at deploying advanced nuclear reactor technologies, reforming the Nuclear Regulatory Commission (NRC), reforming nuclear testing at the Department of Energy (DOE), and boosting the nuclear industrial base.

There are several existing policies that support the development of nuclear energy, including the 2024 bipartisan Accelerating Deployment of Versatile, Advanced Nuclear for

Clean Energy Act (ADVANCE Act) and tax incentives in the 2022 Inflation Reduction Act for nuclear power production.

Looking forward, several developments would affect how the EOs impact the U.S. nuclear energy industry, including the interaction with the implementation of the ADVANCE Act, the administration's pending action to repeal rules that require compliance with the National Environmental Policy Act, and other non-regulatory factors such as electricity demand and high upfront capital costs of nuclear energy projects.

Overview

President Trump signed four EOs on May 23, 2025, intended to significantly boost the U.S. nuclear energy industry. This section summarizes the policy goals and key provisions of each EO.

"Deploying Advanced Nuclear Reactor Technologies for National Security"

Policy Goal

The EO states that:

The Federal Government must utilize its full authority to accelerate the secure and responsible development, demonstration, deployment, and export of United States designed advanced nuclear technologies to bolster readiness and enhance American technological superiority.

It defines advanced nuclear reactors as new generation nuclear technologies, including:

…nuclear energy systems like Generation III+ reactors, small modular reactors, microreactors, and stationary and mobile reactors that have the potential to deliver resilient, secure, and reliable power to critical defense facilities and other mission capability resources.

Key Provisions

- **Deploying technologies at military installations:** This provision requires the secretary of Defense to work with the secretary of the Army to start operating an advanced nuclear reactor at a domestic military installation by September 30, 2028; within 240 days of the date of the EO, the secretary of Defense would need to work with relevant agencies to submit recommendations for legislative and regulatory proposals to the assistant to the president for National Security Affairs on further using advanced nuclear reactor technologies at military installations.

- **Prioritizing the development of data centers:** This provision requires the secretary of Energy to designate qualified artificial intelligence (AI) data centers in the 48 contiguous states and the District of Columbia as "critical defense facilities," and designate one or more sites owned by the DOE, including national laboratories, for the deployment of advanced nuclear reactor technologies within 90 days of the date of the EO.
- **Building up a fuel bank:** This provision directs the secretary of Energy to fill up a fuel bank of at least 20 metric tons of more efficient, new generation fuel, high assay low-enriched uranium (HALEU), to support generating nuclear power for AI facilities.
- **Easing the environmental review process:** This provision requests that the secretary of Defense and the secretary of Energy work with the chairman of the Council on Environmental Quality (CEQ) to expedite the environmental regulatory review process of the construction of advanced nuclear reactors on federal sites through the creation of categorical exclusions (CEs) under the National Environmental Policy Act (NEPA). CEs are applicable to certain actions that would not significantly affect the quality of the human environment.
- **Promoting nuclear exports:** The EO includes an extensive section to direct the secretary of State to lead efforts to "aggressively pursue at least 20 new 123 Agreements by the close of the 120th Congress" to boost U.S. nuclear energy and technology exports; the 123 agreements are a section under the Atomic Energy Act of 1954 that establish a peaceful nuclear cooperation agreement for "significant transfers of nuclear material or equipment from the United States," which would need to be approved by Congress. The United States has signed 25 of these 123 agreements with 49 countries.

"Ordering the Reform of the Nuclear Regulatory Commission"

Policy Goal

The NRC is an independent agency created by Congress in 1974 to regulate commercial nuclear power plants and materials. The EO states that the "NRC has failed to license new reactors even as technological advances promise to make nuclear power safer, cheaper, more adaptable, and more abundant than ever," and announces that the administration will reform the NRC, including "its structure, personnel, regulations, and basic operations" in order to "produce lasting American dominance in the global nuclear energy market, create tens of thousands of high-paying jobs, and generate American-led prosperity and resilience."

Key Provisions

- **Expanding U.S. nuclear energy capacity:** This provision aims to quadruple the U.S. nuclear energy capacity from about 100 gigawatts (GW) in 2024 to 400 GW by 2050.
- **Reforming the NRC:** The EO requests that NRC reform its culture, structure, and regulations. Culturally, it directs the NRC to consider the benefits of faster and wider deployment of nuclear power when implementing its licensing and regulatory functions. Structurally, it requests the NRC to work with President Trump's Department of Government Efficiency to "reorganize the NRC to promote the expeditious processing of license applications and the adoption of innovative technology" and "undertake reductions in force in conjunction with this reorganization." Regulatorily, the EO has two major directives: First, it sets an 18-month deadline for NRC's review and making a final decision on a new nuclear reactor application and a one-year deadline for making a final decision on an application to continue operation of an existing reactor. Second, it directs the NRC to update its "flawed" risk assessment models by "reconsider[ing] reliance on the linear no-threshold (LNT) model for radiation exposure and the 'as low as reasonably achievable' standard, which is predicated on LNT."

"Reforming Nuclear Reactor Testing at the Department of Energy"

Policy Goal

The EO states that, "with some rare and arguable exceptions, no advanced reactors have yet been deployed in America." It concludes that "commercial deployment of new nuclear technologies has all but stopped" in the past several decades due to "overregulated complacency," and it is important to reform nuclear testing to "foster nuclear innovation and bring advanced nuclear technologies into domestic production as soon as possible."

Key Provisions

- **Diversifying reactor testing authorities:** This provision directs the secretary of Energy to revise all relevant "regulations, guidance, and procedures and practices of the Department" and the National Laboratories to "expedite the review, approval, and deployment of advanced reactors under the Department's jurisdiction." It also requires DOE to establish a pilot program that would allow companies to build a test reactor outside of partnering with the national laboratories, which is common under current law.
- **Updating NEPA rules:** This provision requires the secretary of Energy to update the relevant NEPA rules by June 30, 2025, to align them with President Trump's "Unleashing American Energy" It also directs the secretary of Energy to "use all

available authorities to eliminate or expedite the Department's environmental reviews for authorizations, permits, approvals, leases, and any other activity requested by an applicant or potential applicant."

"Reinvigorating The Nuclear Industrial Base"

Policy Goal

The EO aims to "jumpstart America's nuclear energy industrial base" by "increasing fuel availability and production, securing civil nuclear supply chains, improving the efficiency with which advanced nuclear reactors are licensed, and preparing our workforce to establish America's energy dominance."

Key Provisions

- **Strengthening the recycling of nuclear waste:** This provision mandates that the secretary of Energy work with relevant federal agencies to submit a report to the president that includes recommended policies and strategies to manage, recycle, and process spent nuclear fuel and high-level waste within 240 days of the date of the order.
- **Prioritizing new nuclear projects:** This provision requires the DOE to prioritize work with nuclear energy developers on projects that would add five additional gigawatts of power to existing nuclear reactors and "have 10 new large reactors with complete designs under construction by 2030."

Current Policy Landscape

Nuclear energy is an important power generation source for the United States, accounting for nearly 20 percent of total electricity generation and half of the country's carbon-free power. Due to the stagnant public and legislative support over the past few decades, however, most of the nuclear reactors in the United States were built between 1970 and 1990.

There has recently been a renewed interest in nuclear energy in the United States. Last year, Congress passed the bipartisan Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024, or ADVANCE Act. The bill aims to support the deployment of nuclear energy through reducing regulatory compliance costs and removing some regulatory barriers for developers. It also mandates that the NRC expedite its regulatory review process for licensing, siting, and constructing advanced new reactors.

The American Action Forum published a primer that reviews the latest legislative, investment, and technological developments in nuclear energy, which includes more detailed analysis.

The Inflation Reduction Act of 2022 included multiple tax subsidies for nuclear energy developers such as the clean electricity production and investment tax credits and the nuclear power production credit. As lawmakers work on the 2025 reconciliation legislation, they are looking to pare back these tax credits. The House version of the bill passed last month includes some paring back of the nuclear tax credits by adding a phaseout schedule.

Looking Forward

It remains to be seen how implementation of the provisions in the nuclear EOs would interact with the implementation of the ADVANCE Act. Specifically, there are some overlaps between some of the EO provisions and the legislation, such as requiring NRC reforms and accelerating the nuclear reactor review and approval processes.

It is also unclear whether the recent developments of the CEQ and the NEPA would have any major implications on the policy goals in the EOs. As of June 2, 2025, the Trump Administration has not appointed a chair to the CEQ. Additionally, earlier this year, the administration issued an interim final rule repealing the CEQ's regulations that require compliance with NEPA, which creates uncertainty for energy companies as they plan for upcoming projects.

Aside from the regulatory environment, other factors, such as electricity demand and high upfront capital costs, also impact the growth of the nuclear energy industry. The EOs send a strong signal that the administration strongly supports the development and deployment of nuclear power by committing to improving the regulatory environment. But whether that would result in a fast expansion of nuclear power capacity in the United States also depends on those other factors.