



Congress Passes ADVANCE Act to Accelerate Deployment of Advanced Nuclear Reactors

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On June 18, the Senate [passed](#) the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act as a section of the Fire Grants and Safety Act ([S.B. 870](#)). The Senate approved House amendments to the bill with a vote of 88-2, opposed only by Senators Edward Markey (D-MA) and Bernie Sanders (I-VT). The ADVANCE Act has [diverse backing](#) from industry, government, and nonprofit stakeholders, and its passage reflects strong bipartisan support for promoting advanced nuclear reactors, which offer carbon-free dispatchable energy generation for both electricity and industrial applications. The ADVANCE Act now heads to President Biden, who is expected to sign the act into law.

The ADVANCE Act is the latest in a series of recent legislative and regulatory developments aimed at bolstering the development of a technology that may be necessary to meet the nation's growing energy demand. Advanced reactors promise improvements over conventional, much larger light water reactors. These improvements include additional safety features, lower waste yields, and operational flexibility that can complement integration with intermittent renewable energy or energy storage. One category of advanced reactors, small modular reactors (SMR), is of particular interest; SMRs hold the potential of fitting within the footprint of industrial applications.

In 2019, President Trump signed into law the [Nuclear Energy Innovation and Modernization Act \(NEIMA\)](#), which directed the Nuclear Regulatory Commission (NRC) to streamline its licensing process for advanced reactors and modified the fee structure for traditional and advanced reactors. The passage of the ADVANCE Act builds on NEIMA and provides even more support to deploy advanced nuclear reactors efficiently and successfully.

Key Provisions of the ADVANCE Act

Promoting New Nuclear Technologies

- **Reduced Fees for Advanced Nuclear Reactor Application Reviews.** The Act amends NEIMA and sets a specific fee reimbursement rate for NRC's review of advanced nuclear reactor licensing applications. While applicants are responsible for direct program salaries and benefits for the nuclear reactor safety program, the costs associated with indirect program and agency support expenses will not be passed onto applicants.
- **Prizes for Advanced Nuclear Reactors.** To incentivize the successful development and deployment of advanced nuclear reactors, the Act establishes multiple prizes. The first entities to successfully deploy the specified types of advanced nuclear reactors can receive federal funding to cover the licensing and permitting costs associated with deployment.

- **Development, Qualification, and Licensing of Advanced Nuclear Fuel Concepts.** The Act directs the NRC to improve its ability to qualify and license advanced nuclear fuel. The NRC must collaborate with the Department of Energy (DOE) to test and demonstrate accident-tolerant fuels and advanced nuclear reactor fuel concepts; operate a knowledge-sharing database for agencies and the private sector; and ensure both NRC and DOE have the technical expertise to support advanced nuclear fuel from the research stage through commercial application. A report detailing these efforts must be submitted to Congress within two years.
- **Licensing and Oversight for Nuclear Facilities on Brownfields and Retired Fossil-Fuel Plant Sites.** The Act directs the NRC to identify and report on regulatory, guidance, or policy changes to streamline licensing reviews and oversight for nuclear facilities at brownfields and retired fossil-fuel electric generation sites. Within two years, the NRC must adopt strategies and initiate rulemaking to achieve these efficiency improvements. This provision recognizes the advantage of using existing power grid infrastructure to bring nuclear facilities online and the potential of advanced reactor construction to create more high-paying jobs for former fossil-fuel industry workers.
- **Licensing and Regulation of Microreactors and Nonelectric Applications of Nuclear Technology.** The Act directs the NRC to develop strategies and guidance for licensing and regulating microreactors, covering items such as oversight and inspections, emergency preparedness, risk analysis methods, and the transportation of fueled microreactors. Additionally, the Act directs the NRC to submit a report to Congress detailing unique licensing issues or requirements for nonelectric applications of nuclear energy, along with a proposed budget and timeline for implementing regulatory guidance.

Strengthening the Nuclear Workforce, Fuel Cycle, Supply Chain, and Infrastructure

- **Nuclear Energy Traineeship Program.** The Act directs the NRC to coordinate with trade schools and institutions of higher education to establish a competitive nuclear energy traineeship program. The program must provide training that meets the critical mission needs of the NRC and nuclear workforce needs.
- **NRC Hiring and Compensation Improvements.** The Act includes provisions to ensure the NRC is prepared to review licenses safely and successfully should the demand for NRC licensing and oversight services increase. Specifically, the Act empowers the NRC Chair to appoint up to 120 exceptionally well-qualified individuals into the excepted service and up to 20 exceptionally well-qualified individuals into term-limited positions during each fiscal year. In addition, the Act allows the NRC to determine the compensation for these positions without regard to the General Schedule classification and pay rates, subject to some limitations. The NRC may also award hiring bonuses and performance bonuses.
- **Biennial Reporting on Spent Nuclear Fuel and High-Level Radioactive Waste.** The Act requires the Secretary of Energy to submit a report to Congress no later than January 1, 2026, and biennially thereafter, that describes spending related to (1)

breaches of contract under the Nuclear Waste Policy Act of 1982 and (2) storage, management, and disposal of spent nuclear fuel and high-level radioactive waste (including the projected lifecycle costs for such activities). The report must also describe mechanisms and recommendations to improve accounting of liabilities and lifecycle costs for spent fuel and radioactive waste. Additionally, the report must describe any activities taken in the previous fiscal year by DOE with respect to interim storage and the development and deployment of technologies that enhance the safe transportation and storage of spent nuclear fuel or high-level radioactive waste.

- **Report on Advanced Manufacturing and Construction Methods.** The Act directs the NRC to submit a report to Congress within 180 days on advanced manufacturing and construction techniques for nuclear energy projects. The report must, among other things, assess licensing issues, identify safety standard gaps, and provide recommendations to use the existing regulatory framework or engage in new rulemaking to support advanced manufacturing and construction methods.

Improving NRC Efficiency and Effectiveness

- **Updated NRC Mission Statement.** The Act provides that the NRC must update its mission within a year to include that licensing and regulation will be conducted “in a manner that is efficient and does not unnecessarily limit” the civilian use of radioactive materials, the benefits of civilian use of radioactive materials, or the benefits of nuclear energy technology to society.
- **Periodic Review of Performance Metrics and Milestones.** The Act amends NEIMA and directs the NRC to review its performance metrics and milestones at least once every three years and to revise them as necessary to reflect the most efficient metrics and milestones reasonably achievable.
- **Nuclear Licensing Efficiency.** The Act mandates that the NRC establish techniques and guidance for evaluating nuclear reactor license applications that support efficient, timely, and predictable regulatory reviews and the safe use of nuclear reactors.
- **Modernization of Environmental Reviews.** To streamline the approval of new nuclear reactor license applications, the Act directs the NRC to improve the efficiency, timeliness, and predictability of NEPA environmental reviews through the expanded use of categorical exclusions, environmental assessments, and generic environmental impact statements. The NRC must submit a report on these efforts to Congress within 180 days.
- **Report on Oversight and Inspection Program Improvements.** The Act requires the NRC to provide a report to Congress within a year that identifies potential improvements to NRC’s oversight and inspection programs for nuclear reactors and materials. The report must assess options to maximize program efficiency through the use of risk-informed, performance-based procedures; information technologies; staff training; improved planning; and licensee innovations that may advance nuclear reactor operational efficiency and safety.

Advancing International Nuclear Leadership

- **Export and Innovation Activities.** The Act directs the NRC to support interagency and international coordination related to nuclear reactor import and export licensing. Specifically, the Act directs the NRC to engage in international coordination to promote (1) international technical standards for licensing and regulating nuclear reactor design, construction, and operation; (2) competent nuclear regulatory organizations and frameworks in countries seeking to develop civil nuclear industries; and (3) exchange programs and training for foreign countries to improve their regulation and oversight of nuclear reactors and radioactive materials. The Act empowers the NRC to establish an “International Nuclear Export and Innovation Branch” to support these efforts.
- **DOE Global Nuclear Energy Assessment.** The Act directs the Secretary of Energy to conduct a study in consultation with the Secretary of State, Secretary of Commerce, the Administrator of the Environmental Protection Agency, and the NRC that evaluates the global status of the civilian nuclear energy industry and its supply chains. The study must provide recommendations to strengthen the United States’ engagement with nuclear energy in foreign policy and modernize regulatory requirements to improve domestic supply chains of civilian nuclear energy.
- **Prohibitions on Russian and Chinese Enriched Uranium.** The Act prohibits possession and ownership of enriched uranium fuel fabricated by an entity in Russia or China. A person may obtain a license to possess or own such fuel, but the Act provides that the NRC may only issue such a license in consultation with the Secretaries of Energy and State.
- **Foreign Ownership of Nuclear Facilities.** Under the Atomic Energy Act, nuclear reactor licenses could not be issued to foreign corporations and other entities. The Act modifies this restriction and allows the NRC to issue licenses to governments, corporations, citizens, and foreign nationals of Organization of Economic Cooperation and Development member countries and India if issuance is not contrary to national security or public health and safety.

Other Recent Developments

- **DOE Funding for Small Modular Reactors.** On June 17, DOE issued a [Notice of Intent](#) to distribute \$900 million to support the deployment of small modular reactors (SMRs). Part of the funding comes from President Biden’s Bipartisan infrastructure Law.
- **Reappointment of NRC Chair.** On June 18, the current Chairman of the NRC, [Christopher Hanson](#), was sworn in for a second term – running through 2029. In his confirmation hearings, Senators pressed him to work harder on NRC reform.
- **NRC Rulemaking for Advanced Reactors.** In response to NEIMA, the NRC has drafted [proposed revisions](#) to create a risk-informed, performance-based, and technology-inclusive framework for advanced reactors. An [analysis by Van Ness Feldman lawyers](#) found that the NRC has substantial headroom within its Congressional safety mandate to reduce the risk aversion and restrictiveness in its licensing and permitting process.

For More Information

Van Ness Feldman monitors and advises clients on the actions of the Administration and Congress and the implications for regulated businesses. The professionals at Van Ness Feldman help businesses understand and navigate federal policy and the complex intersection between business and government. If you have any further questions on the ADVANCE Act, please contact [Michael McBride](#), [Kyle Danish](#), or others in Van Ness Feldman's [Energy Transition team](#).

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