

***“Accelerating Deployment of Versatile Advanced Nuclear for Clean  
Energy Act of 2023”***  
***(ADVANCE Act)***

*Section-by-Section as Passed out of the Senate Environment and Public Works Committee on  
May 31, 2023*

**SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

**Sec. 1. Short title; table of contents.**

This section cites this Act as the “Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2023” or “ADVANCE Act of 2023” and provides the table of contents.

**Sec. 2. Definitions.**

This section defines the terms used in this Act.

**TITLE I—AMERICAN NUCLEAR LEADERSHIP**

**Sec. 101. International nuclear reactor export and innovation activities.**

This section requires the Nuclear Regulatory Commission (Commission) to coordinate all work of the Commission relating to: (1) nuclear reactor import and export licensing; and (2) international regulatory cooperation and assistance relating to nuclear reactors.

The Commission must also coordinate international activities with respect to the establishment of: (1) certain technical standards; (2) nuclear regulatory organizations and legal frameworks; and (3) exchange programs and training to other countries.

The Commission is authorized to establish the International Nuclear Reactor Export and Innovation Branch within the Commission’s Office of International Programs.

**Sec. 102. Denials of certain domestic licenses for national security purposes.**

This section defines “covered fuel” as enriched uranium that is fabricated into fuel assemblies by an entity that is: (1) owned or controlled by Russia or China; or (2) organized under the laws of Russia or China. The section prohibits the possession or ownership of covered fuel, unless the Commission specifically authorizes such possession or ownership.

The Commission shall notify the Secretary of Energy and Secretary of State within 30 days of receipt of an application to possess or own covered fuel. A license shall not be issued if the Secretary of Energy and Secretary of State jointly determine, within 180 days, that possession or ownership of covered fuel poses a threat to the national security of the United States.

**Sec. 103. Export license requirements.**

This section ensures advanced nuclear technologies approved for export are in compliance with nonproliferation standards.

**Sec. 104. Coordinated international engagement**

This section requires the Secretary of Commerce and Secretary of Energy establish an initiative to modernize civil nuclear outreach to embarking civil nuclear energy nations. Qualifying nations are nations that do not have a civil nuclear program, are developing or expanding a civil nuclear program, or are pursuing the development of advanced nuclear reactor technology.

The initiative requires the Secretary of Commerce to (1) coordinate outreach to the private investment community to create public-private financing relationships to help export civil nuclear technology to embarking civil nuclear energy nations; (2) coordinate the work of the Executive Branch; and (3) improve the regulatory framework for exporting and importing of items under the jurisdiction of the Secretary of Commerce.

The initiative requires the Secretary of Energy to (1) assist nongovernmental organizations and Federal agencies to provide education and training to foreign governments for nuclear safety, security and safeguards; (2) assist the International Atomic Energy Agency to expand support to embarking civil nuclear energy nations for nuclear safety, security and safeguards; and (3) assist U.S. nuclear energy companies to integrate security and safeguards into their international outreach.

## **TITLE II—DEVELOPING AND DEPLOYING NEW NUCLEAR TECHNOLOGIES**

### **Sec. 201. Fees for advanced nuclear reactor application review**

This section amends the Nuclear Energy Innovation and Modernization Act (NEIMA) to set a specific rate for fees assessed and charged to an entity that has submitted to the Commission a license application for an advanced nuclear reactor.

This section amends NEIMA to set the same rate for fees assessed and charged to an entity through Fiscal Year 2029 for pre-application activities for an entity that has submitted to the Commission a licensing project plan for the purposes of submitting a future license application for an advanced nuclear reactor.

The rate equals the hourly rate calculated by the Commission for mission-direct program salaries and benefits for the nuclear reactor safety program. Mission-indirect program support and agency support expenses that would otherwise be charged to the applicant are excluded from the Commission's fee recovery requirements.

### **Sec. 202. Advanced nuclear reactor prizes.**

This section authorizes the Secretary of Energy to award a prize in an amount equal to the regulatory fees assessed by the Commission for activities related to the first operating permit for an advanced nuclear reactor issued to a non-Federal entity or the Tennessee Valley Authority.

The Secretary is authorized to make additional awards for the first advanced reactors that: (1) use isotopes derived from spent nuclear fuel as fuel for the reactor; (2) is part of a nuclear integrated energy system; (3) is used for nonelectric application; or (4) is licensed under the new technology-inclusive regulatory framework required by NEIMA.

An eligible entity that receives an award shall not be required to repay that award, or pay a dividend, interest or other similar payment on the award.

**Sec. 203. Report on unique licensing considerations relating to the use of nuclear energy for nonelectric applications.**

This section directs the Commission to submit a report to Congress, not later than one year after the date of enactment, identifying unique licensing issues or requirements related to the: (1) flexible operation of nuclear reactors; (2) use of nuclear reactors for nonelectric applications; and (3) colocation of nuclear reactors with industrial plants or other facilities.

Nonelectric applications include hydrogen or other liquid and gaseous fuel or chemical production; water desalination and wastewater treatment; heat for industrial processes; district heating; energy storage; industrial or medical isotope production; and other applications as identified by the Commission.

**Sec. 204. Enabling preparations for the demonstration of advanced nuclear reactors on Department of Energy sites or critical national security infrastructure sites.**

This section excludes funding to support pre-application proceedings (or the review of an early site permit) associated with advanced nuclear reactor demonstrations that will be located on Department of Energy or critical national security infrastructure sites from the Commission's fee recovery requirements.

**Sec. 205. Clarification on fusion regulation**

This section amends NEIMA to exclude fusion reactors from the technology-inclusive regulatory framework for advanced nuclear fission reactors.

**Sec. 206. Regulatory issues for nuclear facilities at brownfield sites**

This section directs the Commission to identify and report on regulations, guidance, or policy necessary to license and oversee nuclear facilities at brownfield sites, including sites with retired fossil fuel facilities. The Commission must consider how existing site infrastructure can be reused and how early site permits, plant parameter envelopes, or standardized applications for similar sites may be used for the licensing of nuclear facilities at brownfield sites.

The Commission must also develop and implement strategies and must initiate a rulemaking to enable and support the licensing of nuclear facilities at brownfield sites. The Commission shall consider existing site infrastructure, existing emergency preparedness organizations and planning, the availability of historical site-specific environmental data, previously approved environmental reviews, potential decommissioning activities, and community engagement and experience with energy production.

**Sec. 207. Appalachian Regional Commission nuclear energy development**

This section authorizes the Appalachian Regional Commission to provide assistance to individuals or entities in the Appalachian region to (1) support siting, constructing and operating a nuclear facility at a brownfield site; (2) assist with workforce training or retraining for a nuclear facility at a brownfield site; and (3) engage with the Commission, the Department of Energy, and other Federal agencies.

This section authorizes \$5 million per year for fiscal years 2023 through 2026 to carry out the nuclear energy development program.

### **TITLE III—PRESERVING EXISTING NUCLEAR ENERGY GENERATION**

#### **Sec. 301. Investment by allies.**

This section allows certain foreign entities to receive a license described in section 103(d) or 104(d) of the Atomic Energy Act of 1954 (Public Law 83-703) (AEA) for a nuclear utilization facility if the Commission determines that issuing such license is not inimical to the common defense and security or the health and safety of the public. This section applies to an entity that is owned, controlled, or dominated by the government of a country that is a member of Organisation for Economic Co-operation and Development on the date of enactment or the Republic of India; a corporation that is incorporated in those countries; or an alien who is a national of those countries.

An entity that has been subject to sanctions under the Countering America's Adversaries Through Sanctions Act is still subject to the existing prohibition.

#### **Sec. 302. Extension of the Price-Anderson Act**

This section extends section 170 of the Atomic Energy Act of 1954, commonly known as the "Price-Anderson Act" to December 31, 2045.

### **TITLE IV—NUCLEAR FUEL CYCLE, SUPPLY CHAIN, INFRASTRUCTURE, AND WORKFORCE**

#### **Sec. 401. Report on advanced methods of manufacturing and construction for nuclear energy applications.**

This section directs the Commission to submit a report to Congress, not later than 180 days after the date of enactment, on licensing and safety issues for innovative nuclear energy applications related to manufacturing and construction.

#### **Sec. 402. Nuclear energy traineeship.**

This section establishes a new traineeship subprogram under the University Nuclear Leadership Program to provide focused training to meet critical mission needs of the Commission and nuclear workforce needs relating to nuclear safety and trade craft.

#### **Sec. 403. Report on Commission readiness and capacity to license additional conversion and enrichment capacity to reduce reliance on uranium from Russia.**

This section directs the Commission to submit a report to Congress, not later than 180 days after the date of enactment, on the readiness and capacity of the Commission to license additional conversion and enrichment capacity and fuel cycle facilities to reduce reliance on Russian nuclear fuel.

The report shall analyze how the capacity of the Commission to license additional conversion and new enrichment capacity and fuel cycle facilities may restrict the readiness of the Commission to review advanced nuclear reactor applications.

**Sec. 404 Annual report on the spent nuclear fuel and high-level radioactive waste inventory in the United States.**

This section directs the Secretary of Energy to annually submit a report to Congress that describes the annual and cumulative payments made by the United States to the holder of a standard contract due to a partial breach of the contract under the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 et seq.) resulting in financial damages to the holder, the amount spent to reduce projected legal payments, actions taken in the prior fiscal year with respect to interim storage, and activities to develop and deploy technologies and fuels that enhance the safe transportation and storage of spent nuclear fuel and high-level radioactive waste.

**Sec. 405 Authorization of appropriations for superfund actions at abandoned mining sites on Tribal land.**

This section authorizes appropriations for the Environmental Protection Agency Administrator to conduct response actions, including removal and remedial planning activities, studies and other action taken pursuant to Superfund authorities at abandoned mine land on Tribal land. It also authorizes appropriations for the Administrator to conduct remedial and removal actions under Superfund at similarly located eligible non- National Priorities List sites and sites listed on the National Priorities list. This section also directs the Agency for Toxic Substances and Disease Registry to perform one or more health assessments at each eligible non-National Priority List site that is located on Tribal land.

The Administrator may provide financial assistance to the governing body of an Indian Tribe or a legally established organization of Indians. Grant funds may be used for obtaining technical assistance.

The Administrator shall coordinate with the applicable Indian Tribe when selecting and prioritizing sites and carrying out response actions.

**Sec. 406. Development, qualification, and licensing of advanced nuclear fuel concepts.**

This section directs the Commission to establish an initiative to enhance preparedness and coordination to qualify and license advanced nuclear fuel.

The Commission is directed to enter into a memorandum of understanding with the Secretary of Energy to (1) share technical expertise and knowledge to support the testing and safety analysis of advanced nuclear fuel and (2) ensure that the Department of Energy and Commission have sufficient technical expertise and facilities to support the evaluation of regulatory approval for advanced nuclear fuel.

The Commission is directed, not later than one year after the date of enactment, to submit a report to Congress on the Commission's preparedness to review and qualify advanced nuclear fuels, activities undertaken under the memorandum of understanding, necessary research, and other challenges or considerations with respect to advanced nuclear fuels.

## **TITLE V – IMPROVING COMMISSION EFFICIENCY**

### **Sec. 501. Commission workforce.**

This section authorizes the appointment, without regard to the civil service laws, up to 15 permanent positions for fiscal year 2024 and 10 permanent positions for each fiscal year thereafter with highly specialized scientific, engineering, and technical competencies and 15 term-limited positions for fiscal year 2024 and 10 term-limited positions for each fiscal year thereafter for the same competencies. It authorizes the appointment of 15 permanent positions for fiscal year 2024 and 10 permanent positions for each fiscal year thereafter to be filled by exceptionally well-qualified individuals necessary to fulfill the mission of the Commission and 15 term-limited positions for fiscal year 2024 and 10 term-limited positions for each fiscal year thereafter for the same exceptionally well-qualified individuals. The positions appointed under this section may receive hiring bonuses. The hiring authority under this section is to be used to fill entry, mid, and senior levels of positions to the extent practicable.

This section also allows the establishment of positions to be filled with persons who may receive the basic rate of pay equal to level III of the Executive Schedule for up to 10 positions per Fiscal Year, not to exceed 50 positions total with highly specialized scientific, engineering, and technical competencies and up to 10 positions per fiscal year, not to exceed 50 positions total, to be filled by exceptionally well-qualified individuals necessary to fulfill the mission of the Commission. Employees who demonstrate exceptional performance may receive a 1-time performance bonus. An employee who receives a 1-time performance bonus may not receive the 1-time performance bonus for the five years thereafter.

Positions filled and the 1-time performance bonus must follow the Merit Systems Principles in section 2301 of title 5 of the United States Code to the maximum extent practicable.

The authority to establish positions and appoint persons to those positions in this subsection shall be delegated to the Executive Director of Operations, pursuant to the Reorganization Plan No. 1 of 1980.

The Commission must annually report on the total number and positions of persons appointed and compensated, including the 1-time performance bonus, under the authority provided in this section. The annual report must also include an assessment of critical workforce needs, other skillsets necessary for the Commission, and plans to assess, develop, and implement staff performance standards, training procedures, and schedules.

Not later than September 30, 2032, the Commission must submit a report to Congress with the Commission's views on the effectiveness of the authorities in this section and make recommendations with respect to whether the authorities provided should be continued, modified, or discontinued.

### **Section 502. Commission corporate support funding.**

This section directs the Commission to submit a report to Congress, not later than 3 years after the date of enactment, describing: (1) the Commission's implementation of the budgetary

authority caps for corporate support established under section 102(a)(3) of the Nuclear Energy Innovation and Modernization Act (42 U.S.C. 2215(a)(3)); and (2) whether the Commission is meeting and is expected to meet the total caps under that section.

The section also freezes corporate support limitations at 30 percent and excludes costs associated with unused office space or for salaries, travel, and support of the Office of the Commission from the corporate support cost definition.

**Section 503. Performance and reporting update.**

This section requires the Commission to periodically review and assess performance metrics and milestone schedules. The Commission must revise the metrics and schedules to be the most efficient as is reasonably achievable.

**TITLE VI —MISCELLANEOUS**

**Section 601. Nuclear closure communities.**

This section authorizes the Secretary of Commerce to establish a grant program to provide grants to assist with economic development and fund community advisory boards in communities that have been, or will be, impacted by a nuclear power plant that has ceased, or will cease operations as of the date of enactment.

**Sec. 602. Technical correction.**

This section makes a technical correction to the AEA to permit the Commission to issue a license for a research and test reactor if not more than 75 percent of the annual costs to the licensee of owning and operating the facility are devoted to the sale of non-energy services, energy services, or a combination of non-energy services and energy services.

**Sec. 603 Report on engagement with the Government of Canada with respect to nuclear waste issues in the Great Lakes Basin.**

This section requires the Commission to submit a report to Congress describing any engagement between the Commission and the Government of Canada with respect to nuclear waste issues in the Great Lakes Basin.