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118TH CONGRESS
2D SESSION

H. R. 9710

To amend the Energy Policy Act of 2005 to support a program to advance the research, development, demonstration, and commercial application of small modular reactors and micro-reactors in order to accelerate the availability of United States-based technologies, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 19, 2024

Mr. STRONG (for himself, Ms. ROSS, and Mr. ADERHOLT) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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A BILL

To amend the Energy Policy Act of 2005 to support a program to advance the research, development, demonstration, and commercial application of small modular reactors and micro-reactors in order to accelerate the availability of United States-based technologies, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Small Modular Reactor Demonstration Act of 2024''.

SEC. 2. SMALL MODULAR REACTOR DEMONSTRATION PROGRAM.

(a) IN GENERAL.—Subtitle E of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16271 et seq.) is amended by adding at the end the following new section:

"SEC. 959D. SMALL MODULAR REACTOR DEMONSTRATION PROGRAM.

''(a) DEFINITIONS.—In this section:

''(1) ADVANCED NUCLEAR REACTOR.—The term 'advanced nuclear reactor' has the meaning given such term in section 951 of the Energy Policy Act of 2005 (42 U.S.C. 16271).

''(2) DEMONSTRATION PROJECT.—The term 'demonstration project' means a small modular reactor or micro-reactor when operated as part of the power generation facilities of an electric utility system, or when operated in any other manner for the purpose of demonstrating the suitability for commercial application of such a reactor.

''(3) MICRO-REACTOR.—The term 'micro-reactor' means an advanced nuclear reactor that has an electric power production capacity that is not greater than 50 electrical megawatts.

''(4) SMALL MODULAR REACTOR.—The term 'small modular reactor' means an advanced nuclear

reactor with a rated capacity that is not greater than 700 electrical megawatts per unit.

''(b) PROGRAM.—In collaboration with industry partners, owners and operators of electric utilities, institutions of higher education, and the national laboratories, the Secretary shall support a program to advance the research, development, demonstration, and commercial application of small modular reactors and micro-reactors in order to accelerate the availability of United States-based technologies into domestic and international markets by carrying out the following:

''(1) Demonstrating a variety of small modular reactor and micro-reactor technologies, including those that could—

''(A) be used for power generation, processing steam or heat production, desalination, or other industrial and chemical uses;

''(B) be sited at locations not practicable for other new energy generation technologies as of the date of the enactment of this section;

''(C) offer distinct safeguards, security, or nonproliferation advantages;

''(D) use light water or non-light water coolants, such as gas, liquid metals, or molten salts;

"(E) supply remote or off-grid energy;

"(F) supply backup or mission-critical power supplies; or

"(G) supply power for data centers.

"(2) In coordination and furtherance of the Advanced Nuclear Energy Cost-Share Grant Program established pursuant to section 3 of the Nuclear Energy Innovation Capabilities Act of 2017 (42 U.S.C. 16280), accelerating certification, licensing, and siting of domestic small modular reactor and micro-reactor designs through competitive awards to support design, licensing, supplier development, and site preparation of designs that can be deployed by not later than September 30, 2034.

"(3) Reducing economic, technical, and regulatory barriers to deployment.

"(4) Identifying and resolving research, development, and demonstration areas that the private sector is unable or unwilling to undertake due to the cost of, or risks associated with, any of such areas.

"(5) Supporting small modular reactor and micro-reactor safety, training, and workforce development at institutions of higher education, including community colleges and trade schools.

''(6) Facilitating the access of the private sector to the following:

''(A) Federal research and development facilities and personnel.

''(B) National Laboratories.

''(C) The results of research and development relating to civil nuclear technology funded by the Federal Government.

''(c) DEMONSTRATION PROJECTS.—In carrying out demonstration projects under the program described in subsection (b), the Secretary, in coordination with the advanced reactor demonstration program established under section 959A may, not later than one year after the date of the enactment of this section, award not more than two near term utility demonstration projects of grid scale small modular reactor technology in the United States to applicants with, to the maximum extent practicable, an expected orderbook of deployments or an early site permit from the U.S. Nuclear Regulatory Commission for an advanced nuclear reactor.

''(d) REQUIREMENTS.—In carrying out demonstration projects under the program described in subsection (b) and in accordance with subsection (c), the Secretary shall—

''(1) require a non-Federal or utility cost share of not less than 50 percent for such demonstration projects pursuant to section 988 of the Energy Policy Act of 2005 (42 U.S.C. 16352);

''(2) include, as an evaluation criterion, diversity in designs for the small modular reactors and micro-reactors demonstrated under such projects, including designs using various—

''(A) estimated capital investments, with emphases on reduced construction costs and durations as compared to other advanced nuclear reactors;

''(B) end-use applications;

''(C) output of wastes requiring disposal;

''(D) abilities to utilize recycled spent nuclear fuel;

''(E) technology readiness levels; and

''(F) abilities to be co-located on existing power plant sites;

''(3) to the maximum extent practicable, utilize technologies and lessons learned from the National Reactor Innovation Center of the Idaho National Laboratory and the Department of Defense's and Department of Energy's pilot program for micro-reactors, commonly known as 'Project Pele'; and

''(4) to the maximum extent practicable, require adherence to milestone-based demonstration project authorities in accordance with section 9005 of the Energy Act of 2020 (42 U.S.C. 7256c; division Z of the Consolidated Appropriations Act, 2021 (Public Law 116–260)).

''(e) SITING.—The Secretary shall select at least one demonstration project under subsection (c)(1) to be located on or adjacent to a site on which a nuclear reactor operates, previously operated, or could operate in the future with existing energy infrastructure, including current, former, or underutilized facilities on Federal property or in the custody and control of the Tennessee Valley Authority established under the Tennessee Valley Authority Act of 1933 (16 U.S.C. 831 et seq.).

''(f) AUTHORIZATION OF APPROPRIATIONS.—To carry out this section, there is authorized to be appropriated the following:

''(1) For activities of the program established under subsection (b), $100,000,000 for each of fiscal years 2025 through 2027.

''(2) For demonstration projects established under subsection (c), the following:

''(A) $300,000,000 for fiscal year 2025.

''(B) $300,000,000 for fiscal year 2026.

''(C) $200,000,000 for fiscal year 2027.

''(g) REPORT.—Not later than two years after the date of the enactment of this section, the Secretary shall submit to the Committee on Science, Space, and Technology of the House of Representatives and Committee on Energy and Natural Resources of the Senate a report on activities carried out under this section, including relating to the progress and timeline of demonstration projects under subsection (c).''.

(b) SMALL MODULAR REACTOR SITING WITH EXISTING INFRASTRUCTURE.—

(1) IN GENERAL.—Not later than one year after the date of the enactment of this Act, as part of the program established under section 959D of the Energy Policy Act of 2005 (as added by subsection (a)), the Secretary of Energy shall identify priority sites for small modular reactors and microreactors (as such terms are defined in such section) at locations with existing energy infrastructure.

(2) SITE SELECTION.—The Secretary of Energy shall identify locations referred to in paragraph (1) by considering sites with the following attributes:

(A) Increased cost-effectiveness through measurable energy savings, water savings or

reuse, or infrastructure costs averted from using existing energy infrastructure.

(B) Expected replicability at similar sites in a variety of geographic regions.

(C) The ability to supplement existing energy load.

(D) Relevant permitting, workforce, or transmission to accommodate completion of construction on an expedited timeline as compared to traditional nuclear power.

(E) Existing relationships with an electric utility provider.

(F) Existing Federal infrastructure or workforce presence with unique energy supply challenges.

(G) Efforts to obtain early site permits or other recognition from the U.S. Nuclear Regulatory Commission for suitability to deploy advanced nuclear technologies.

(3) EXISTING SITES.—The Secretary of Energy shall include a list of Department of Energy sites or installations that are critical national security infrastructure (as such term is defined in section 327(d) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–

232)) that are determined to be practical sites for small modular reactors and micro-reactors.

(4) REPORT.—The Secretary of Energy shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report on sites identified pursuant to this subsection.

(c) CLERICAL AMENDMENT.—The table of contents of the Energy Policy Act of 2005 is amended by inserting after the item relating to section 959C the following new item:

"Sec. 959D. Small modular reactor demonstration program.".

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