

Union Calendar No. 362

117TH CONGRESS
2^D SESSION

H. R. 4819

[Report No. 117–466]

To require the Secretary of Energy to revitalize existing university infrastructure relating to nuclear science and engineering and establish new university-based nuclear science and engineering facilities, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 29, 2021

Mr. GONZALEZ of Ohio (for himself, Mr. FOSTER, Mr. CASTEN, and Mr. MELJER) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

SEPTEMBER 14, 2022

Additional sponsors: Ms. ROSS, Mrs. LURIA, Mr. GOTTHEIMER, Mr. CARTER of Georgia, Ms. JOHNSON of Texas, Mr. FITZPATRICK, Ms. WILD, Mr. LAMB, Mr. MICHAEL F. DOYLE of Pennsylvania, Mr. CARTWRIGHT, Ms. DEAN, Mr. PHILLIPS, and Mr. DONALDS

SEPTEMBER 14, 2022

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in *italie*]

[For text of introduced bill, see copy of bill as introduced on July 29, 2021]

A BILL

To require the Secretary of Energy to revitalize existing university infrastructure relating to nuclear science and engineering and establish new university-based nuclear science and engineering facilities, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “National Nuclear Uni-*
5 *versity Research Infrastructure Reinvestment Act of 2021”.*

6 **SEC. 2. PURPOSES.**

7 *The purposes of this Act are—*

8 *(1) to upgrade the nuclear research capabilities*
9 *of universities in the United States to meet the re-*
10 *search requirements of advanced nuclear energy sys-*
11 *tems;*

12 *(2) to ensure the continued operation of univer-*
13 *sity research reactors;*

14 *(3) to coordinate available resources to enable the*
15 *establishment, including the start and efficient com-*
16 *pletion of construction, of new nuclear science and en-*
17 *gineering facilities; and*

18 *(4) to support—*

19 *(A) workforce development critical to main-*
20 *taining United States leadership in nuclear*
21 *science and engineering and related disciplines;*
22 *and*

23 *(B) the establishment or enhancement of nu-*
24 *clear science and engineering capabilities and*
25 *other, related capabilities at historically Black*

1 colleges and universities, Tribal colleges or uni-
 2 versities, minority-serving institutions, EPSCoR
 3 universities, junior or community colleges, and
 4 associate-degree-granting colleges.

5 **SEC. 3. UNIVERSITY INFRASTRUCTURE COLLABORATION.**

6 Section 954(a) of the Energy Policy Act of 2005 (42
 7 U.S.C. 16274(a)) is amended—

8 (1) in paragraph (2), by amending subpara-
 9 graph (D) to read as follows:

10 “(D) promote collaborations, partnerships,
 11 and knowledge sharing between institutions of
 12 higher education, National Laboratories, other
 13 Federal agencies, industry, and associated labor
 14 unions; and”;

15 (2) by amending paragraph (4) to read as fol-
 16 lows:

17 “(4) **STRENGTHENING UNIVERSITY RESEARCH**
 18 **AND TRAINING REACTORS AND ASSOCIATED INFRA-**
 19 **STRUCTURE.**—

20 “(A) **IN GENERAL.**—In carrying out the
 21 program under this subsection, the Secretary
 22 may support—

23 “(i) converting research reactors from
 24 high-enrichment fuels to low-enrichment

1 *fuels and upgrading operational instrumen-*
2 *tation;*

3 “(ii) *revitalizing and upgrading exist-*
4 *ing nuclear science and engineering infra-*
5 *structure that support the development of*
6 *advanced nuclear technologies and applica-*
7 *tions;*

8 “(iii) *regional or subregional univer-*
9 *sity-led consortia to—*

10 “(I) *broaden access to university*
11 *research reactors;*

12 “(II) *enhance existing university-*
13 *based nuclear science and engineering*
14 *infrastructure; and*

15 “(III) *provide project manage-*
16 *ment, technical support, quality engi-*
17 *neering and inspections, manufac-*
18 *turing, and nuclear material support;*

19 “(iv) *student training programs, in*
20 *collaboration with the United States nuclear*
21 *industry, in relicensing and upgrading re-*
22 *actors, including through the provision of*
23 *technical assistance; and*

24 “(v) *reactor improvements that empha-*
25 *size research, training, and education, in-*

cluding through the Innovations in Nuclear Infrastructure and Education Program or any similar program.

“(B) *AUTHORIZATION OF APPROPRIATIONS.*—Of any amounts appropriated to carry out the program under this subsection, there is authorized to be appropriated to the Secretary to carry out clauses (ii) and (iii) of subparagraph (A) \$55,000,000 for each of fiscal years 2022 through 2026.”.

**SEC. 4. ADVANCED NUCLEAR RESEARCH INFRASTRUCTURE
ENHANCEMENT SUBPROGRAM.**

Section 954(a) of the Energy Policy Act of 2005 (42 U.S.C. 16274(a)), as amended by section 3, is further amended—

(1) by redesignating paragraphs (5) through (8) as paragraphs (6) through (9), respectively;

(2) by inserting after paragraph (4) the following:

“(5) *ADVANCED NUCLEAR RESEARCH INFRASTRUCTURE ENHANCEMENT.*—

“(A) *IN GENERAL.*—The Secretary shall carry out a subprogram to be known as the Advanced Nuclear Research Infrastructure Enhancement Subprogram in order to—

1 “(i) demonstrate various advanced nu-
2 clear reactor and nuclear microreactor con-
3 cepts;

4 “(ii) establish medical isotope produc-
5 tion reactors or other specialized applica-
6 tions; and

7 “(iii) advance other research infra-
8 structure that, in the determination of the
9 Secretary, is consistent with the mission of
10 the Department.

11 “(B) NEW NUCLEAR SCIENCE AND ENGI-
12 NEERING FACILITIES.—In carrying out the sub-
13 program, the Secretary shall establish—

14 “(i) not more than 4 new research re-
15 actors; and

16 “(ii) new nuclear science and engineer-
17 ing facilities, as required to address re-
18 search demand and identified infrastructure
19 gaps.

20 “(C) LOCATIONS.—New research reactors
21 and facilities established under subparagraph
22 (B) shall be established in a manner that—

23 “(i) supports the regional or sub-
24 regional consortia described in paragraph
25 (4)(C); and

1 “(ii) encourages the participation of—

2 “(I) historically Black colleges
3 and universities;

4 “(II) Tribal colleges or univer-
5 sities;

6 “(III) minority-serving institu-
7 tions;

8 “(IV) EPSCoR universities;

9 “(V) junior or community col-
10 leges; and

11 “(VI) associate-degree-granting
12 colleges.

13 “(D) *FUEL REQUIREMENTS*.—New research
14 reactors established under subparagraph (B)
15 shall not use high-enriched uranium, as defined
16 in section 2001 of division Z of the Consolidated
17 Appropriations Act of 2021.

18 “(E) *AUTHORIZATION OF APPROPRIA-*
19 *TIONS*.—Of any amounts appropriated to carry
20 out the program under this subsection, there are
21 authorized to be appropriated to the Secretary to
22 carry out the subprogram under this para-
23 graph—

24 “(i) \$10,000,000 for fiscal year 2022;

25 “(ii) \$45,000,000 for fiscal year 2023;

1 “(iii) \$60,000,000 for fiscal year 2024;

2 “(iv) \$65,000,000 for fiscal year 2025;

3 “(v) \$80,000,000 for fiscal year 2026;

4 “(vi) \$140,000,000 for fiscal year 2027;

5 “(vii) \$120,000,000 for fiscal year

6 2028; and

7 “(viii) \$80,000,000 for fiscal year

8 2029.”; and

9 (3) by amending paragraph (9), as redesignated
10 by paragraph (1) of this subsection, to read as fol-
11 lows:

12 “(9) *DEFINITIONS.—In this subsection:*

13 “(A) *ASSOCIATE-DEGREE-GRANTING COL-*
14 *LEGE.—The term ‘associate-degree-granting col-*
15 *lege’ means an institution of higher education*
16 *(as determined under section 101 of the Higher*
17 *Education Act of 1965 (20 U.S.C. 1001)) that—*

18 “(i) *is a nonprofit institution that of-*
19 *fers a 2-year associate-degree program or a*
20 *2-year certificate program; or*

21 “(ii) *is a proprietary institution that*
22 *offers a 2-year associate degree program.*

23 “(B) *JUNIOR FACULTY.—The term ‘junior*
24 *faculty’ means a faculty member who was*
25 *awarded a doctorate less than 10 years before re-*

1 *ceipt of an award from the grant program de-*
 2 *scribed in paragraph (2)(B).*

3 “(C) *JUNIOR OR COMMUNITY COLLEGE.*—
 4 *The term ‘junior or community college’ has the*
 5 *meaning given the term in section 312 of the*
 6 *Higher Education Act of 1965 (20 U.S.C. 1058).*

7 “(D) *EPSCoR UNIVERSITY.*—*The term*
 8 *‘EPSCoR university’ means an institution of*
 9 *higher education located in a State eligible to*
 10 *participate in the program defined in section*
 11 *502 of the America COMPETES Reauthoriza-*
 12 *tion Act of 2010 (42 U.S.C. 1862p note).*

13 “(E) *HISTORICALLY BLACK COLLEGE OR*
 14 *UNIVERSITY.*—*The term ‘historically Black col-*
 15 *lege or university’ has the meaning given the*
 16 *term ‘part B institution’ in section 322 of the*
 17 *Higher Education Act of 1965 (20 U.S.C. 1061).*

18 “(F) *MINORITY-SERVING INSTITUTION.*—*The*
 19 *term ‘minority-serving institution’ means a His-*
 20 *panic-serving institution, an Alaska Native-serv-*
 21 *ing institution, a Native Hawaiian-serving in-*
 22 *stitutions, a Predominantly Black Institution,*
 23 *an Asian American and Native American Pa-*
 24 *cific Islander-serving institution, or a Native*
 25 *American-serving nontribal institution as de-*

1 *scribed in section 371 of the Higher Education*
 2 *Act of 1965 (20 U.S.C. 1067q(a)).*

3 “(G) *TRIBAL COLLEGE OR UNIVERSITY.*—
 4 *The term ‘Tribal college or university’ has the*
 5 *meaning given such term in section 316 of the*
 6 *Higher Education Act of 1965 (20 U.S.C.*
 7 *1059c).’.*”

8 **SEC. 5. SCIENCE EDUCATION AND HUMAN RESOURCES**
 9 **SCHOLARSHIPS, FELLOWSHIPS, AND RE-**
 10 **SEARCH AND DEVELOPMENT PROJECTS.**

11 *(a) IN GENERAL.—The purpose of this section is to*
 12 *support a diverse workforce for the complex landscape asso-*
 13 *ciated with effective and equitable development of advanced*
 14 *nuclear energy technologies, including interdisciplinary re-*
 15 *search to enable positive impacts and avoid potential nega-*
 16 *tive impacts across the lifespan of nuclear energy tech-*
 17 *nologies.*

18 *(b) NONTECHNICAL NUCLEAR RESEARCH.—Section*
 19 *313 of the Omnibus Appropriations Act, 2009 (Public Law*
 20 *111–8; 42 U.S.C. 16274a) is amended:*

21 *(1) in subsection (b)(2), after “engineering”, by*
 22 *inserting “, which may include nontechnical nuclear*
 23 *research”;*

24 *(2) in subsection (c), by inserting after para-*
 25 *graph (2) the following:*

1 “(3) *NONTECHNICAL NUCLEAR RESEARCH.*—*The*
2 *term ‘nontechnical nuclear research’ means research*
3 *with specializations such as social sciences or law*
4 *that can support an increase in community engage-*
5 *ment, participation, and confidence in nuclear energy*
6 *systems, including the navigation of the licensing re-*
7 *quired for advanced reactor deployment, aligned with*
8 *the objectives in section 951(a)(2) of the Energy Pol-*
9 *icy Act of 2005 (42 U.S.C. 16271(a)(2)).’; and*
10 (3) *in subsection (d)(1), by striking*
11 “\$30,000,000” *and inserting “\$45,000,000”.*

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