

## Union Calendar No. 419

115<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

# H. R. 4378

[Report No. 115-557]

To direct the Secretary of Energy to carry out the construction of a versatile reactor-based fast neutron source, and for other purposes.

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### IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 13, 2017

Mr. WEBER of Texas (for himself, Ms. EDDIE BERNICE JOHNSON of Texas, Mr. SMITH of Texas, Mr. LIPINSKI, Mr. KNIGHT, and Mr. HULTGREN) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

FEBRUARY 13, 2018

Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

# **A BILL**

To direct the Secretary of Energy to carry out the construction of a versatile reactor-based fast neutron source, 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 “Nuclear Energy Re-  
5 search Infrastructure Act of 2017”.

6 **SEC. 2. VERSATILE NEUTRON SOURCE.**

7       (a) IN GENERAL.—The Secretary of Energy shall  
8 provide for a versatile reactor-based fast neutron source,  
9 which shall operate as a national user facility. The Sec-  
10 retary shall consult with the private sector, universities,  
11 National Laboratories, and relevant Federal agencies to  
12 ensure that the versatile neutron source is capable of  
13 meeting Federal research needs for neutron irradiation  
14 services.

15       (b) FACILITY CAPABILITIES.—

16           (1) CAPABILITIES.—The Secretary shall ensure  
17 that the facility described in subsection (a) will pro-  
18 vide, at a minimum, the following capabilities:

19                   (A) Fast neutron spectrum irradiation ca-  
20 pability.

21                   (B) Capacity for upgrades to accommodate  
22 new or expanded research needs.

23       (2) CONSIDERATIONS.—In carrying out para-  
24 graph (1), the Secretary shall consider the following:

1 (A) Capabilities that support experimental  
2 high-temperature testing.

3 (B) Providing a source of fast neutrons at  
4 a neutron flux higher than that at which exist-  
5 ing research facilities operate, sufficient to en-  
6 able research for an optimal base of prospective  
7 users.

8 (C) Maximizing irradiation flexibility and  
9 irradiation volume to accommodate as many  
10 concurrent users as possible.

11 (D) Capabilities for irradiation with neu-  
12 trons of a lower energy spectrum.

13 (E) Multiple loops for fuels and materials  
14 testing of different coolants.

15 (F) Capabilities that support irradiating  
16 and processing targets for isotope production.

17 (G) Additional pre-irradiation and post-ir-  
18 radiation examination capabilities.

19 (H) Lifetime operating costs and lifecycle  
20 costs.

21 (c) START OF OPERATIONS.—The Secretary shall, to  
22 the maximum extent practicable, ensure that the start of  
23 full operations of the facility under this section occurs be-  
24 fore December 31, 2025.

1           (d) FUNDING.—Out of funds appropriated to the Of-  
2     fice of Nuclear Energy, there shall be made available to  
3     the Secretary to carry out activities, including design and  
4     construction of the facility, under this section—

- 5           (1) \$35,000,000 for fiscal year 2018;  
6           (2) \$100,000,000 for fiscal year 2019;  
7           (3) \$200,000,000 for fiscal year 2020;  
8           (4) \$260,000,000 for fiscal year 2021;  
9           (5) \$340,000,000 for fiscal year 2022;  
10          (6) \$350,000,000 for fiscal year 2023;  
11          (7) \$350,000,000 for fiscal year 2024; and  
12          (8) \$350,000,000 for fiscal year 2025.

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