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103D CONGRESS
1ST SESSION

S. 646

[Report No. 103-62]

A BILL

To establish within the Department of Energy an international fusion energy program, and for other purposes.

JUNE 22, 1993

Reported with amendments

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To establish within the Department of Energy an international fusion energy program, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 24 (legislative day, MARCH 3), 1993

Mr. JOHNSTON introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

JUNE 22, 1993

Reported by Mr. JOHNSTON, with amendments

[Omit the part struck through and insert the part printed in italic]

A BILL

To establish within the Department of Energy an international fusion energy program, 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 “International Fusion
5 Energy Act of 1993”.

1 **SEC. 2. FINDINGS, PURPOSES AND DEFINITIONS.**

2 (a) FINDINGS.—Congress finds that—

3 (1) fusion energy has the potential to be a safe,
4 environmentally attractive, secure and economically
5 affordable source of energy;

6 (2) the United States Department of Energy's
7 magnetic fusion energy program has made signifi-
8 cant progress toward realizing fusion as a viable
9 source of energy;

10 (3) other industrial nations have also invested
11 in significant magnetic fusion energy programs;

12 (4) an integrated program of international col-
13 laboration will be necessary for continued progress
14 to demonstrate the scientific and technological fea-
15 sibility of magnetic fusion energy;

16 (5) there is international agreement to proceed
17 with the engineering and design of the International
18 Thermonuclear Experimental Reactor to prove the
19 scientific and technical feasibility of fusion energy
20 and to lead to a demonstration reactor;

21 ~~(6) the United States should focus the Depart-~~
22 ~~ment of Energy's magnetic fusion energy program~~
23 ~~on the design, construction and operation of the~~
24 ~~International Thermonuclear Experimental Reactor;~~

25 *(6) the United States should focus the Depart-*
26 *ment of Energy's magnetic fusion energy program on*

1 *elements furthering the design, construction and oper-*
2 *ation of the International Thermonuclear Experi-*
3 *mental Reactor and a fusion demonstration reactor,*
4 *including the operation of the Tokamak Physics*
5 *Experiment;*

6 (7) the continuation of an aggressive fusion en-
7 ergy program requires the Department of Energy,
8 industry, utilities, and the international fusion com-
9 munity to commit to the International Thermo-
10 nuclear Experimental Reactor as soon as practicable;
11 and

12 (8) an effective United States fusion energy
13 program requires substantial involvement by indus-
14 try and utilities in the design, construction, and op-
15 eration of fusion facilities.

16 (b) PURPOSES.—The purposes of this Act are to—

17 (1) redirect and refocus the Department’s mag-
18 netic fusion energy program in a way that will lead
19 to the design, construction and operation of the
20 International Thermonuclear Experimental Reactor
21 by 2005, in cooperation with other countries, and
22 operation of a fusion demonstration reactor by 2025;

23 (2) develop a plan identifying the budget, criti-
24 cal path, milestones and schedules for the Inter-
25 national Thermonuclear Experimental Reactor;

1 ~~(3) eliminate from the Department of Energy's~~
2 ~~magnetic fusion energy program those elements that~~
3 ~~do not directly support the development of the Inter-~~
4 ~~national Thermonuclear Experimental Reactor or~~
5 ~~the development of a fusion demonstration reactor;~~
6 ~~and~~

7 *(3) limit the Department of Energy's magnetic*
8 *fusion energy program to elements that support the*
9 *development of the International Thermonuclear Ex-*
10 *perimental Reactor or a fusion demonstration reactor,*
11 *including the Tokamak Physics Experiment to be*
12 *built at the Princeton Plasma Physics Laboratory;*
13 *and*

14 (4) select a candidate host site within the Unit-
15 ed States for the International Thermonuclear Ex-
16 perimental Reactor and to identify the steps nec-
17 essary to lead to the selection of the final host site
18 by the international community.

19 (c) DEFINITIONS.—

20 (1) “Department” means the United States De-
21 partment of Energy;

22 (2) “ITER” means the International Thermo-
23 nuclear Experimental Reactor; and

24 (3) “Secretary” means the Secretary of the
25 United States Department of Energy.

1 **SEC. 3. INTERNATIONAL FUSION ENERGY PROGRAM.**

2 (1) *OFFICE OF THE FUSION NEGOTIATOR.*—(A) *There*
3 *is established the Office of the International Fusion Nego-*
4 *tiator that shall be an independent establishment in the*
5 *executive branch.*

6 (B) *The Office shall be headed by an International Fu-*
7 *sion Negotiator who shall be appointed by the President,*
8 *by and with the advice and consent of the Senate. The Nego-*
9 *tiator shall hold office at the pleasure of the President, and*
10 *shall be compensated at the rate provided for level III of*
11 *the Executive Schedule in section 5314 of title 5, United*
12 *States Code.*

13 (C) *The Negotiator, in consultation with the Secretary*
14 *and the Secretary of State, shall represent the United States*
15 *in negotiations with other countries relating to the design,*
16 *construction or operation of the International Thermo-*
17 *nuclear Experimental Reactor.*

18 ~~(a)~~ (2) **PROGRAM.**—The Secretary shall redirect and
19 refocus the Department’s magnetic fusion program in a
20 way that will lead to the design, construction and oper-
21 ation of ITER by 2005 and operation of a fusion dem-
22 onstration reactor by 2025. The Department’s magnetic
23 fusion program shall be referred to as the ~~ITER~~ program
24 and shall be carried out in cooperation with the inter-
25 national community.

1 (b) REQUIREMENTS.—In developing the ITER pro-
2 gram, the Secretary shall—

3 (1) establish as the main focus of the Depart-
4 ment's magnetic fusion energy program the develop-
5 ment of ITER;

6 (2) provide for the development of fusion mate-
7 rials and other reactor components to the extent
8 necessary for the development of a fusion dem-
9 onstration reactor;

10 (3) eliminate those components of the magnetic
11 fusion energy program not contributing directly to
12 development of ITER or to the development of a fu-
13 sion demonstration reactor;

14 (4) select a candidate host site within the Unit-
15 ed States for the International Thermonuclear Ex-
16 perimental Reactor;

17 (5) ~~negotiate~~ *provide support, as requested, to*
18 *the International Fusion Negotiator in negotiating*
19 *with other countries involved in ITER to select a*
20 *final host site for ITER and to agree to construct*
21 *ITER as soon as practicable;*

22 (6) provide for substantial United States indus-
23 try and utility involvement in the design, construc-
24 tion and operation of ITER to ensure United States

1 industry and utility expertise in the technologies de-
2 veloped; and

3 (7) provide for reducing the level of effort in
4 the ITER program to the levels prescribed in section
5 4(b)(2) in the event the ITER program is termi-
6 nated in accordance with subsection (g).

7 (c) MANAGEMENT PLAN.—(1) Within one hundred
8 eighty days of the date of enactment of this Act, the Sec-
9 retary shall prepare, *in consultation with the International*
10 *Fusion Negotiator*, and implement a management plan for
11 the ITER program. The plan shall be revised and updated
12 biannually.

13 (2) The plan shall—

14 (A) establish the goals of the ITER program;

15 (B) describe how each component of the De-
16 partment's ITER program contributes directly to
17 the development of ITER or development of a fusion
18 demonstration reactor;

19 (C) set priorities for the elements of the De-
20 partment's ITER program, identifying those ele-
21 ments that contribute directly to the development of
22 ITER or to the development of a fusion demonstra-
23 tion reactor;

24 (D) provide for the elimination of those ele-
25 ments of the magnetic fusion energy program not

1 contributing directly to the development of ITER, or
2 to the development of fusion materials or other reac-
3 tor components that are necessary for the develop-
4 ment of a fusion demonstration reactor;

5 (E) describe the selection process for a pro-
6 posed host site within the United States for ITER;

7 (F) establish the necessary steps that will lead
8 to the final selection of the host site for ITER by
9 the countries involved in the ~~ITER~~ program by the
10 end of 1996.

11 (G) establish the necessary steps that will lead
12 to the design, construction and operation of ITER
13 by 2005 and operation of a fusion demonstration re-
14 actor by 2025;

15 (H) establish a schedule and critical path, in-
16 cluding milestones, and a budget that will allow for
17 the design, construction and operation of ITER by
18 2005 and operation of a demonstration fusion reac-
19 tor by 2025;

20 (I) provide mechanisms for ensuring substantial
21 industry and utility involvement in the design, con-
22 struction and operation of ITER;

23 (J) set forth any recommendations of the Sec-
24 retary on—

1 (i) the need for additional legislation re-
2 garding the ITER program; or

3 (ii) the possibility and desirability of ac-
4 celerating the design and construction of ITER
5 or the development of a fusion demonstration
6 reactor; and

7 (K) provide for reducing the level of effort in
8 magnetic fusion to the levels prescribed in section
9 4(b)(2) in the event the ITER program is termi-
10 nated in accordance with subsection (g).

11 (d) INTERNATIONAL AGREEMENTS.—(1) The Sec-
12 ~~retary~~ *International Fusion Negotiator* may negotiate or
13 enter into agreements with any country governing the de-
14 sign, construction and operation of ITER or facilities re-
15 lated to ITER.

16 (2) The ~~Secretary~~ *International Fusion Negotiator*
17 shall seek to enter into agreements with other countries
18 to share in the cost of the facilities and components of
19 the ITER program that contribute to the design, construc-
20 tion or operation of ITER or to the development of a fu-
21 sion demonstration reactor.

22 (e) REPORT ON ITER NEGOTIATIONS.—The Sec-
23 ~~retary~~ *International Fusion Negotiator* shall submit an an-
24 nual report to the Congress on the status of negotiations
25 with other countries regarding ITER. The report shall—

1 (1) identify the issues to be negotiated with
2 other countries involved in the ITER program;

3 (2) identify impediments to reaching agreement
4 on a host site for ITER, or on issues related to the
5 construction or operation of ITER;

6 (3) identify the steps needed to reach agree-
7 ment on a host site for ITER or on issues related
8 to the construction or operation of ITER;

9 (4) establish the timetable for agreement relat-
10 ed to the siting, operation and construction of
11 ITER; *and*

12 (5) assess the likelihood of reaching agreement
13 on a host site for ITER and on issues related to the
14 construction or operation of ITER; *and ITER.*

15 ~~(6) set forth the Secretary's recommendation on~~
16 ~~whether a special negotiator should be appointed to~~
17 ~~carry out negotiations on behalf of the United States~~
18 ~~with the countries involved in the ITER program.~~

19 (f) CERTIFICATION.—Prior to seeking funds for con-
20 struction of ITER, the Secretary, *after consultation with*
21 *the International Fusion Negotiator*, shall certify to the
22 Congress that there is agreement in place or there is a
23 substantial likelihood agreement will be reached with the
24 countries involved in ITER on the siting, construction and
25 operation of ITER.

1 (g) TERMINATION.—(1) The Secretary shall report to
2 Congress if the Secretary determines that—

3 (A) ITER is no longer essential to the develop-
4 ment of a fusion demonstration reactor;

5 (B) no agreement can be reached on the final
6 host site for ITER;

7 (C) no agreement can be reached on the final
8 design of ITER or on issues related to construction
9 of ITER; or

10 (D) there is an insufficient commitment to the
11 final ITER design by United States industry and
12 utilities.

13 (2) Within thirty days of submission of the report
14 under paragraph (1), the Secretary shall initiate the ter-
15 mination of the ~~ITER~~ program.

16 (3) In the event the Secretary terminates the ~~ITER~~
17 program, the Secretary may continue to carry out research
18 in magnetic fusion, but only at the levels authorized in
19 section 4(b)(2).

20 **SEC. 4. AUTHORIZATION OF APPROPRIATIONS.**

21 (a) LIMITATION ON APPROPRIATIONS.—No more
22 funds may be appropriated to carry out the purposes of
23 this Act than the amounts set forth in subsection (b). This
24 Act shall be the exclusive source of authorization of appro-

1 priations to support any activities of the Secretary relating
2 to magnetic fusion energy.

3 (b) APPROPRIATIONS.—(1) There is authorized to be
4 appropriated to the Secretary for carrying out the pur-
5 poses of this Act ~~\$350,000,000 for fiscal year 1994,~~
6 ~~\$390,000,000 for fiscal year 1995,~~ *\$380,000,000 for fiscal*
7 *year 1994, \$425,000,000 for fiscal year 1995,* \$475,000,000
8 for fiscal year 1996, and such sums as may be necessary
9 thereafter.

10 (2) In the event the Secretary terminates the ~~ITER~~
11 program, there is authorized to be appropriated to the
12 Secretary \$50,000,000 for 1994, \$50,000,000 for 1995
13 and \$50,000,000 for 1996 for activities relating to mag-
14 netic fusion energy.