

Passed August 1, 2001 by 269 to 160.

107TH CONGRESS
1ST SESSION

H. R. 4

To enhance energy conservation, research and development and to provide for security and diversity in the energy supply for the American people, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 27, 2001

Mr. TAUZIN (for himself, Mr. THOMAS, Mr. HANSEN, and Mr. OXLEY) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committees on Science, Ways and Means, Resources, Education and the Workforce, Transportation and Infrastructure, the Budget, and Financial Services, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To enhance energy conservation, research and development and to provide for security and diversity in the energy supply for the American people, 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 **SEC. 1. SHORT TITLE AND TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Securing America’s Future Energy Act of 2001” or the
6 “SAFE Act of 2001”.

The bill is 510 pages long, only the Fusion section is included here.

1 \$293,000,000 for fiscal year 2003, and \$305,000,000 for
2 fiscal year 2004, to remain available until expended.

3 (b) LIMITS ON USE OF FUNDS.—None of the funds
4 authorized to be appropriated in subsection (a) may be
5 used for—

6 (1) Gas Hydrates.

7 (2) Fossil Energy Environmental Restoration;

8 or

9 (3) research, development, demonstration, and
10 commercial application on coal and related tech-
11 nologies, including activities under subtitle A.

12 **TITLE V—SCIENCE**

13 **Subtitle A—Fusion Energy**

14 **Sciences**

15 **SEC. 2501. SHORT TITLE.**

16 This subtitle may be cited as the “Fusion Energy
17 Sciences Act of 2001”.

18 **SEC. 2502. FINDINGS.**

19 The Congress finds that—

20 (1) economic prosperity is closely linked to an
21 affordable and ample energy supply;

22 (2) environmental quality is closely linked to en-
23 ergy production and use;

24 (3) population, worldwide economic develop-
25 ment, energy consumption, and stress on the envi-

1 ronment are all expected to increase substantially in
2 the coming decades;

3 (4) the few energy options with the potential to
4 meet economic and environmental needs for the
5 long-term future should be pursued as part of a bal-
6 anced national energy plan;

7 (5) fusion energy is an attractive long-term en-
8 ergy source because of the virtually inexhaustible
9 supply of fuel, and the promise of minimal adverse
10 environmental impact and inherent safety;

11 (6) the National Research Council, the Presi-
12 dent's Committee of Advisers on Science and Tech-
13 nology, and the Secretary of Energy Advisory Board
14 have each recently reviewed the Fusion Energy
15 Sciences Program and each strongly supports the
16 fundamental science and creative innovation of the
17 program, and has confirmed that progress toward
18 the goal of producing practical fusion energy has
19 been excellent, although much scientific and engi-
20 neering work remains to be done;

21 (7) each of these reviews stressed the need for
22 a magnetic fusion burning plasma experiment to ad-
23 dress key scientific issues and as a necessary step in
24 the development of fusion energy;

1 (8) the National Research Council has also
2 called for a broadening of the Fusion Energy
3 Sciences Program research base as a means to more
4 fully integrate the fusion science community into the
5 broader scientific community; and

6 (9) the Fusion Energy Sciences Program budg-
7 et is inadequate to support the necessary science and
8 innovation for the present generation of experiments,
9 and cannot accommodate the cost of a burning plas-
10 ma experiment constructed by the United States, or
11 even the cost of key participation by the United
12 States in an international effort.

13 **SEC. 2503. PLAN FOR FUSION EXPERIMENT.**

14 (a) PLAN FOR UNITED STATES FUSION EXPERI-
15 MENT.—The Secretary, on the basis of full consultation
16 with the Fusion Energy Sciences Advisory Committee and
17 the Secretary of Energy Advisory Board, as appropriate,
18 shall develop a plan for United States construction of a
19 magnetic fusion burning plasma experiment for the pur-
20 pose of accelerating scientific understanding of fusion
21 plasmas. The Secretary shall request a review of the plan
22 by the National Academy of Sciences, and shall transmit
23 the plan and the review to the Congress by July 1, 2004.

24 (b) REQUIREMENTS OF PLAN.—The plan described
25 in subsection (a) shall—

1 (1) address key burning plasma physics issues;
2 and

3 (2) include specific information on the scientific
4 capabilities of the proposed experiment, the rel-
5 evance of these capabilities to the goal of practical
6 fusion energy, and the overall design of the experi-
7 ment including its estimated cost and potential con-
8 struction sites.

9 (c) UNITED STATES PARTICIPATION IN AN INTER-
10 NATIONAL EXPERIMENT.—In addition to the plan de-
11 scribed in subsection (a), the Secretary, on the basis of
12 full consultation with the Fusion Energy Sciences Advi-
13 sory Committee and the Secretary of Energy Advisory
14 Board, as appropriate, may also develop a plan for United
15 States participation in an international burning plasma
16 experiment for the same purpose, whose construction is
17 found by the Secretary to be highly likely and where
18 United States participation is cost effective relative to the
19 cost and scientific benefits of a domestic experiment de-
20 scribed in subsection (a). If the Secretary elects to develop
21 a plan under this subsection, he shall include the informa-
22 tion described in subsection (b), and an estimate of the
23 cost of United States participation in such an inter-
24 national experiment. The Secretary shall request a review
25 by the National Academies of Sciences and Engineering

1 of a plan developed under this subsection, and shall trans-
2 mit the plan and the review to the Congress not later than
3 July 1, 2004.

4 (d) AUTHORIZATION OF RESEARCH AND DEVELOP-
5 MENT.—The Secretary, through the Fusion Energy
6 Sciences Program, may conduct any research and develop-
7 ment necessary to fully develop the plans described in this
8 section.

9 **SEC. 2504. PLAN FOR FUSION ENERGY SCIENCES PRO-**
10 **GRAM.**

11 Not later than 6 months after the date of the enact-
12 ment of this Act, the Secretary, in full consultation with
13 FESAC, shall develop and transmit to the Congress a plan
14 for the purpose of ensuring a strong scientific base for
15 the Fusion Energy Sciences Program and to enable the
16 experiments described in section 2503. Such plan shall in-
17 clude as its objectives—

18 (1) to ensure that existing fusion research fa-
19 cilities and equipment are more fully utilized with
20 appropriate measurements and control tools;

21 (2) to ensure a strengthened fusion science the-
22 ory and computational base;

23 (3) to ensure that the selection of and funding
24 for new magnetic and inertial fusion research facili-

1 ties is based on scientific innovation and cost effective-
2 tiveness;

3 (4) to improve the communication of scientific
4 results and methods between the fusion science com-
5 munity and the wider scientific community;

6 (5) to ensure that adequate support is provided
7 to optimize the design of the magnetic fusion burn-
8 ing plasma experiments referred to in section 2503;

9 (6) to ensure that inertial confinement fusion
10 facilities are utilized to the extent practicable for the
11 purpose of inertial fusion energy research and devel-
12 opment;

13 (7) to develop a roadmap for a fusion-based en-
14 ergy source that shows the important scientific ques-
15 tions, the evolution of confinement configurations,
16 the relation between these two features, and their re-
17 lation to the fusion energy goal;

18 (8) to establish several new centers of excel-
19 lence, selected through a competitive peer-review
20 process and devoted to exploring the frontiers of fu-
21 sion science;

22 (9) to ensure that the National Science Foun-
23 dation, and other agencies, as appropriate, play a
24 role in extending the reach of fusion science and in
25 sponsoring general plasma science; and

1 (10) to ensure that there be continuing broad
2 assessments of the outlook for fusion energy and
3 periodic external reviews of fusion energy sciences.

4 **SEC. 2505. AUTHORIZATION OF APPROPRIATIONS.**

5 There are authorized to be appropriated to the Sec-
6 retary for the development and review, but not for imple-
7 mentation, of the plans described in this subtitle and for
8 activities of the Fusion Energy Sciences Program
9 \$320,000,000 for fiscal year 2002 and \$335,000,000 for
10 fiscal year 2003, of which up to \$15,000,000 for each of
11 fiscal year 2002 and fiscal year 2003 may be used to es-
12 tablish several new centers of excellence, selected through
13 a competitive peer-review process and devoted to exploring
14 the frontiers of fusion science.

15 **Subtitle B—Spallation Neutron**
16 **Source**

17 **SEC. 2521. DEFINITION.**

18 For the purposes of this subtitle, the term “Spall-
19 ation Neutron Source” means Department Project 99–E–
20 334, Oak Ridge National Laboratory, Oak Ridge, Ten-
21 nessee.

22 **SEC. 2522. AUTHORIZATION OF APPROPRIATIONS.**

23 (a) **AUTHORIZATION OF CONSTRUCTION FUNDING.—**
24 There are authorized to be appropriated to the Secretary
25 for construction of the Spallation Neutron Source—