

1 (c) HIGH-PERFORMANCE COMPUTING ACT PROGRAM.—Section 203(a) of the High-  
2 Performance Computing Act of 1991 (15 U.S.C. 5523(a)) is amended—

3 (1) in paragraph (3), by striking “and”;

4 (2) in paragraph (4), by striking the period and inserting “; and”; and

5 (3) by adding after paragraph (4) the following: “(5) conduct an integrated program of research,  
6 development, and provision of facilities to develop and deploy to scientific and technical users the high-  
7 performance computing and collaboration tools needed to fulfill the statutory missions of the Department  
8 of Energy in conducting basic and applied energy research.”.

9 (d) COORDINATION WITH THE DOE NATIONAL NUCLEAR SECURITY AGENCY  
10 ACCELERATED STRATEGIC COMPUTING INITIATIVE AND OTHER NATIONAL  
11 COMPUTING PROGRAMS.—The Secretary shall ensure that this program, to the extent feasible, is  
12 integrated and consistent with—

13 (1) the Accelerated Strategic Computing Initiative of the National Nuclear Security Agency; and

14 (2) other national efforts related to advanced scientific computing for science and engineering.

15 (e) AUTHORIZATION OF APPROPRIATIONS.—From amounts authorized under section  
16 1251(b), the following amounts are authorized for activities under this section—

17 (1) \$285,000,000 for fiscal year 2003;

18 (2) \$300,000,000 for fiscal year 2004;

19 (3) \$310,000,000 for fiscal year 2005; and

20 (4) \$320,000,000 for fiscal year 2006.

21 **SEC. 1254. FUSION ENERGY SCIENCES PROGRAM AND PLANNING.**

1 (a) OVERALL PLAN FOR FUSION ENERGY SCIENCES PROGRAM.—

2 (1) IN GENERAL.— Not later than 6 months after the date of enactment of this subtitle, the  
3 Secretary, after consultation with the Fusion Energy Sciences Advisory Committee, shall develop and  
4 transmit to the Congress a plan to ensure a strong scientific base for the Fusion Energy Sciences  
5 Program within the Office of Science and to enable the experiments described in subsections (b) and (c).

6 (2) OBJECTIVES OF PLAN.— The plan under this subsection shall include as its objectives—

7 (1) to ensure that existing fusion research facilities and equipment are more fully utilized with  
8 appropriate measurements and control tools;

9 (2) to ensure a strengthened fusion science theory and computational base;

10 (3) to encourage and ensure that the selection of and funding for new magnetic and inertial fusion  
11 research facilities is based on scientific innovation and cost effectiveness;

12 (4) to improve the communication of scientific results and methods between the fusion science  
13 community and the wider scientific community;

14 (5) to ensure that adequate support is provided to optimize the design of the magnetic fusion  
15 burning plasma experiments referred to in subsections (b) and (c); and

16 (6) to ensure that inertial confinement fusion facilities are utilized to the extent practicable for the  
17 purpose of inertial fusion energy research and development.

18 (b) PLAN FOR UNITED STATES FUSION EXPERIMENT.—

19 (1) IN GENERAL.—The Secretary, after consultation with the Fusion Energy Sciences Advisory  
20 Committee, shall develop a plan for construction in the United States of a magnetic fusion burning  
21 plasma experiment for the purpose of accelerating scientific understanding of fusion plasmas. The

1 Secretary shall request a review of the plan by the National Academy of Sciences and shall transmit the  
2 plan and the review to the Congress by July 1, 2004.

3 (2) REQUIREMENTS OF PLAN.— The plan described in paragraph (1) shall—

4 (A) address key burning plasma physics issues; and

5 (B) include specific information on the scientific capabilities of the proposed experiment,  
6 the relevance of these capabilities to the goal of practical fusion energy, and the overall design of  
7 the experiment including its estimated cost and potential construction sites.

8 (c) PLAN FOR PARTICIPATION IN AN INTERNATIONAL EXPERIMENT.-- In  
9 addition to the plan described in subsection (b), the Secretary, after consultation with the Fusion Energy  
10 Sciences Advisory Committee, may also develop a plan for United States participation in an international  
11 burning plasma experiment for the same purpose, whose construction is found by the Secretary to be  
12 highly likely and where United States participation is cost-effective relative to the cost and scientific  
13 benefits of a domestic experiment described in subsection (b). If the Secretary elects to develop a plan  
14 under this subsection, he shall include the information described in subsection (b)(2), and an estimate of  
15 the cost of United States participation in such an international experiment. The Secretary shall request a  
16 review by the National Academy of Sciences of a plan developed under this subsection, and shall  
17 transmit the plan and the review to the Congress no later than July 1, 2004.

18 (d) AUTHORIZATION FOR RESEARCH AND DEVELOPMENT.— The Secretary, through  
19 the Office of Science, may conduct any research and development necessary to fully develop the plans  
20 described in this section.

1 (e) AUTHORIZATION OF APPROPRIATIONS.— From amounts authorized under section  
2 1251(b) for fiscal year 2003, \$335,000,000 are authorized for fiscal year 2003 for activities under this  
3 section and for activities of the Fusion Energy Sciences Program.

## 4 **Subtitle F – Energy, Safety, and Environmental Protection**

### 5 **SEC. 1261. CRITICAL ENERGY INFRASTRUCTURE PROTECTION RESEARCH AND** 6 **DEVELOPMENT.**

7 (a) IN GENERAL.— The Secretary shall carry out a research, development, demonstration and  
8 technology deployment program, in partnership with industry, on critical energy infrastructure protection,  
9 consistent with the roles and missions outlined for the Secretary in Presidential Decision Directive 63,  
10 entitled “Critical Infrastructure Protection”. The program shall have the following goals:

11 (1) Increase the understanding of physical and information system disruptions to the energy  
12 infrastructure that could result in cascading or widespread regional outages.

13 (2) Develop energy infrastructure assurance “best practices” through vulnerability and risk  
14 assessments.

15 (3) Protect against, mitigate the effect of, and improve the ability to recover from disruptive  
16 incidents within the energy infrastructure.

17 (b) PROGRAM SCOPE.— The program under subsection (a) shall include research,  
18 development, deployment, technology demonstration for--

19 (1) analysis of energy infrastructure interdependencies to quantify the impacts of system  
20 vulnerabilities in relation to each other;