

tive, efficient, and environmentally benign fuel cell systems which will operate on fossil fuels in multiple end use sectors.

**(c) Authorization of appropriations**

There are authorized to be appropriated to the Secretary for carrying out this section \$51,555,000 for fiscal year 1993 and \$56,000,000 for fiscal year 1994.

(Pub. L. 102-486, title XXI, §2115, Oct. 24, 1992, 106 Stat. 3074.)

**§ 13476. Environmental restoration and waste management program**

**(a) Authorization of appropriations**

There are authorized to be appropriated to the Secretary for fiscal year 1993 \$70,000,000 for the Fast Flux Test Facility to maintain the operational status of the reactor, such sums to be derived from amounts appropriated to the Secretary for the environmental restoration and waste management program.

**(b) Long-term missions**

The Secretary shall aggressively pursue the development and implementation of long-term missions for the Fast Flux Test Facility. Within 6 months after October 24, 1992, the Secretary shall submit to the Congress a report on the progress made in carrying out this subsection.

(Pub. L. 102-486, title XXI, §2116, Oct. 24, 1992, 106 Stat. 3075.)

**§ 13477. High-temperature superconductivity program**

**(a) Program**

The Secretary shall carry out a 5-year program, in accordance with sections 13541 and 13542 of this title, on high-temperature superconducting electric power equipment technologies. Elements of the program shall include, but are not limited to—

(1) activities that address the development of high-temperature superconducting materials that have increased electrical current capacity, which shall be the emphasis of the program for the near-term;

(2) the development of prototypes, where appropriate, of the major elements of a superconducting electric power system such as motors, generators, transmission lines, transformers, and magnetic energy storage systems;

(3) activities that will improve the efficiency of materials performance of higher temperatures and at all magnetic field orientations;

(4) development of prototypes based on high-temperature superconducting wire, that operate at the highest temperature possible, and refrigeration systems using cryogenics such as nitrogen;

(5) activities that will assist the private sector with designs for more efficient electric power generation and delivery systems which are cost competitive with conventional energy systems; and

(6) development of prototypes that have application in both the commercial and defense sectors.

The Secretary is also encouraged to expedite government, laboratory, industry, and university collaborative agreements under existing mechanisms at the Department of Energy in coordination with other Federal agencies.

**(b) Authorization of appropriations**

There are authorized to be appropriated to the Secretary for carrying out this section \$21,900,000 for fiscal year 1993 and such sums as may be necessary for subsequent fiscal years, to be derived from sums authorized under section 13471(c) of this title.

(Pub. L. 102-486, title XXI, §2117, Oct. 24, 1992, 106 Stat. 3075.)

**§ 13478. Omitted**

CODIFICATION

Section, Pub. L. 102-486, title XXI, §2118, Oct. 24, 1992, 106 Stat. 3075; Pub. L. 105-23, §1, July 3, 1997, 111 Stat. 237, which authorized the Secretary to establish an electric and magnetic fields research and public information dissemination program, expired on Dec. 31, 1998.

**§ 13479. Spark M. Matsunaga Renewable Energy and Ocean Technology Center**

**(a) Findings**

The Congress finds that—

(1) the late Spark M. Matsunaga, United States Senator from Hawaii, was a long-standing champion of research and development of renewable energy, particularly wind and ocean energy, photovoltaics, and hydrogen fuels;

(2) it was Senator Matsunaga's vision that renewable energy could provide a sustained source of non-polluting energy and that such forms of alternative energy might ultimately be employed in the production of liquid hydrogen as a transportation fuel and energy storage medium available as an energy export;

(3) Senator Matsunaga also believed that research on other aspects of renewable energy and ocean resources, such as advanced materials, could be crucial to full development of energy storage and conversion systems; and

(4) Keahole Point, Hawaii is particularly well-suited as a site to conduct renewable energy and associated marine research.

**(b) Purpose**

It is the purpose of this section to establish the facilities and equipment located at Keahole Point, Hawaii as a cooperative research and development facility, to be known as the Spark M. Matsunaga Renewable Energy and Ocean Technology Center.

**(c) Establishment**

The facilities and equipment located at Keahole Point, Hawaii are established as the Spark M. Matsunaga Renewable Energy and Ocean Technology Center (in this section referred to as the "Center").

**(d) Administration**

(1) Not later than 180 days after October 24, 1992, the Secretary may authorize a cooperative agreement with a qualified research institution to administer the Center.

(2) For the purpose of paragraph (1), a qualified research institution is a research institu-

tion located in the State of Hawaii that has demonstrated competence and will be the lead organization in the State in renewable energy and ocean technologies.

**(e) Activities**

The Center may carry out research, development, educational, and technology transfer activities on—

- (1) renewable energy;
- (2) energy storage, including the production of hydrogen from renewable energy;
- (3) materials applications related to energy and marine environments;
- (4) other environmental and ocean research concepts, including sea ranching and global climate change; and
- (5) such other matters as the Secretary may direct.

**(f) Matching funds**

To be eligible for Federal funds under this section, the Center must provide funding in cash or in kind from non-Federal sources for each amount provided by the Secretary.

**(g) Authorization of appropriations**

There is authorized to be appropriated to the Secretary for carrying out this section such sums as may be necessary, to be derived from sums authorized under section 13471(c) of this title.

(Pub. L. 102-486, title XXI, §2119, Oct. 24, 1992, 106 Stat. 3080.)

PART C—ADVANCED NUCLEAR REACTORS

**§ 13491. Purposes and definitions**

**(a) Purposes**

The purposes of this part are—

- (1) to require the Secretary to carry out civilian nuclear programs in a way that will lead toward the commercial availability of advanced nuclear reactor technologies; and
- (2) to authorize such activities to further the timely availability of advanced nuclear reactor technologies, including technologies that utilize standardized designs or exhibit passive safety features.

**(b) Definitions**

For purposes of this part—

- (1) the term “advanced nuclear reactor technologies” means—
  - (A) advanced light water reactors that may be commercially available in the near-term, including but not limited to mid-sized reactors with passive safety features for the generation of commercial electric power from nuclear fission; and
  - (B) other advanced nuclear reactor technologies that may require prototype demonstration prior to commercial availability in the mid- or long-term, including but not limited to high-temperature, gas-cooled reactors and liquid metal reactors, for the generation of commercial electric power from nuclear fission;
- (2) the term “Commission” means the Nuclear Regulatory Commission;
- (3) the term “standardized design” means a design for a nuclear power plant that may be

utilized for a multiple number of units or a multiple number of sites; and

(4) the term “certification” means approval by the Commission of a standardized design.

(Pub. L. 102-486, title XXI, §2121, Oct. 24, 1992, 106 Stat. 3081.)

REFERENCES IN TEXT

This part, referred to in text, was in the original “this subtitle” meaning subtitle C of title XXI of Pub. L. 102-486, Oct. 24, 1992, 106 Stat. 3081, which enacted this part and amended sections 12003 and 12004 of this title.

**§ 13492. Program, goals, and plan**

**(a) Program direction**

The Secretary shall conduct a program to encourage the deployment of advanced nuclear reactor technologies that to the maximum extent practicable—

- (1) are cost effective in comparison to alternative sources of commercial electric power of comparable availability and reliability, taking into consideration life cycle environmental costs;
- (2) facilitate the design, licensing, construction, and operation of a nuclear powerplant using a standardized design;
- (3) exhibit enhanced safety features; and
- (4) incorporate features that advance the objectives of the Nuclear Non-Proliferation Act of 1978 [22 U.S.C. 3201 et seq.].

**(b) Program goals**

The goals of the program established under subsection (a) shall include—

- (1) for the near-term—
  - (A) to facilitate the completion, by September 30, 1996, for certification by the Commission, of standardized advanced light water reactor technology designs that the Secretary determines have the characteristics described in subsection (a)(1) through (4);
  - (B) to facilitate the completion of submissions, by September 30, 1996, for preliminary design approvals by the Commission of standardized designs for the modular high-temperature gas-cooled reactor technology and the liquid metal reactor technology; and
  - (C) to evaluate by September 30, 1996, actinide burn technology to determine if it can reduce the volume of long-lived fission by-products;
- (2) for the mid-term—
  - (A) to facilitate increased efficiency of enhanced safety, advanced light water reactors to produce electric power at the lowest cost to the customer;
  - (B) to develop advanced reactor concepts that are passively safe and environmentally acceptable; and
  - (C) to complete necessary research and development on high-temperature gas-cooled reactor technology and liquid metal reactor technology to support the selection, by September 30, 1998, of one or both of those technologies as appropriate for prototype demonstration; and
- (3) for the long-term, to complete research and development and demonstration to sup-