

Secretary shall establish a research and development program on material science issues presented by advanced fission reactors and the fusion energy program of the Department.

(b) Administration

In carrying out the program, the Secretary shall develop—

- (1) a catalog of material properties required for applications described in subsection (a);
- (2) theoretical models for materials possessing the required properties;
- (3) benchmark models against existing data; and
- (4) a roadmap to guide further research and development in the area covered by the program.

(Pub. L. 109–58, title IX, §978, Aug. 8, 2005, 119 Stat. 904.)

§ 16319. Energy and water supplies

(a) In general

The Secretary shall carry out a program of research, development, demonstration, and commercial application to—

- (1) address energy-related issues associated with provision of adequate water supplies, optimal management, and efficient use of water;
- (2) address water-related issues associated with the provision of adequate supplies, optimal management, and efficient use of energy; and
- (3) assess the effectiveness of existing programs within the Department and other Federal agencies to address these energy and water related issues.

(b) Program elements

The program under this section shall include—

- (1) arsenic treatment;
- (2) desalination; and
- (3) planning, analysis, and modeling of energy and water supply and demand.

(c) Collaboration

In carrying out this section, the Secretary shall consult with the Administrator of the Environmental Protection Agency, the Secretary of the Interior, the Chief Engineer of the Army Corps of Engineers, the Secretary of Commerce, the Secretary of Defense, and other Federal agencies as appropriate.

(d) Facilities

The Secretary may utilize all existing facilities within the Department and may design and construct additional facilities as needed to carry out the purposes of this program.

(e) Advisory committee

The Secretary shall establish or utilize an advisory committee to provide independent advice and review of the program.

(f) Reports

Not later than 2 years after August 8, 2005, the Secretary shall submit to Congress a report on the assessment described in subsection (b) and recommendations for future actions.

(Pub. L. 109–58, title IX, §979, Aug. 8, 2005, 119 Stat. 905.)

§ 16320. Spallation Neutron Source

(a) Definitions

In this section:

(1) SING

The term “SING” means the Spallation Neutron Source Instruments Next Generation major item of equipment.

(2) SNS power upgrade

The term “SNS power upgrade” means the Spallation Neutron Source power upgrade described in the 20-year facilities plan of the Office of Science of the Department.

(3) SNS second target station

The term “SNS second target station” means the Spallation Neutron Source second target station described in the 20-year facilities plan of the Office of Science of the Department.

(4) Spallation Neutron Source Facility

The terms “Spallation Neutron Source Facility” and “Facility” mean the completed Spallation Neutron Source scientific user facility located at Oak Ridge National Laboratory, Oak Ridge, Tennessee.

(5) Spallation Neutron Source Project

The terms “Spallation Neutron Source Project” and “Project” means Department Project 99–E–334, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

(b) Spallation Neutron Source Project

(1) In general

The Secretary shall submit to Congress, as part of the annual budget request of the President submitted to Congress, a report on progress on the Spallation Neutron Source Project.

(2) Contents

The report shall include for the Project—

- (A) a description of the achievement of milestones;
- (B) a comparison of actual costs to estimated costs; and
- (C) any changes in estimated Project costs or schedule.

(c) Spallation Neutron Source Facility plan

(1) In general

The Secretary shall develop an operational plan for the Spallation Neutron Source Facility that ensures that the Facility is employed to the full capability of the Facility in support of the study of advanced materials, nanoscience, and other missions of the Office of Science of the Department.

(2) Plan

The operational plan shall—

- (A) include a plan for the operation of an effective scientific user program that—
 - (i) is based on peer review of proposals submitted for use of the Facility;
 - (ii) includes scientific and technical support to ensure that external users, including researchers based at institutions of higher education, are able to make full use

of a variety of high quality scientific instruments; and

(iii) phases in systems upgrades to ensure that the Facility remains at the forefront of international scientific endeavors in the field of the Facility throughout the operating life of the Facility;

(B) include an ongoing program to develop new instruments that builds on the high performance neutron source and that allows neutron scattering techniques to be applied to a growing range of scientific problems and disciplines; and

(C) address the status of and, to the maximum extent practicable, costs and schedules for—

(i) full user mode operations of the Facility;

(ii) instrumentation built at the Facility during the operating phase through full use of the experimental hall, including the SING;

(iii) the SNS power upgrade; and

(iv) the SNS second target station.

(d) Authorization of appropriations

(1) Spallation Neutron Source Project

There is authorized to be appropriated to carry out the Spallation Neutron Source Project for the lifetime of the Project \$1,411,700,000 for total project costs, of which—

(A) \$1,192,700,000 shall be used for the costs of construction; and

(B) \$219,000,000 shall be used for other Project costs.

(2) Spallation Neutron Source Facility

(A) In general

Except as provided in subparagraph (B), there is authorized to be appropriated for the Spallation Neutron Source Facility for—

(i) the SING, \$75,000,000 for each of fiscal year 2007 through 2009; and

(ii) the SNS power upgrade, \$160,000,000, to remain available until expended.

(B) Insufficient stockpiles of heavy water

If stockpiles of heavy water of the Department are insufficient to meet the needs of the Facility, there is authorized to be appropriated for the Facility \$12,000,000 for fiscal year 2007.

(Pub. L. 109-58, title IX, §980, Aug. 8, 2005, 119 Stat. 905.)

§ 16321. Facility for Rare Isotope Beams

(a) Establishment

The Secretary shall construct and operate a Facility for Rare Isotope Beams. The Secretary shall commence construction no later than September 30, 2008.

(b) Authorization of appropriations

There are authorized to be appropriated to the Secretary such sums as may be necessary to carry out this section. The Secretary shall not spend more than \$1,100,000,000 in Federal funds for all activities associated with the Facility for Rare Isotope Beams, prior to operation of the Accelerator.

(Pub. L. 109-58, title IX, §981, Aug. 8, 2005, 119 Stat. 907; Pub. L. 115-246, title III, §308(b), Sept. 28, 2018, 132 Stat. 3150.)

AMENDMENTS

2018—Pub. L. 115-246 substituted “Facility for Rare Isotope Beams” for “Rare Isotope Accelerator” in section catchline and in subsecs. (a) and (b).

§ 16322. Office of Scientific and Technical Information

The Secretary, through the Office of Scientific and Technical Information, shall maintain within the Department publicly available collections of scientific and technical information resulting from research, development, demonstration, and commercial applications activities supported by the Department.

(Pub. L. 109-58, title IX, §982, Aug. 8, 2005, 119 Stat. 907.)

§ 16323. Science and engineering education pilot program

(a) Establishment of pilot program

The Secretary shall award a grant to a Southeastern United States consortium of major research universities that currently advances science and education by partnering with National Laboratories, to establish a regional pilot program of its SEEK-16 program for enhancing scientific, technological, engineering, and mathematical literacy, creativity, and decision-making. The consortium shall include leading research universities, one or more universities that train substantial numbers of elementary and secondary school teachers, and (where appropriate) National Laboratories.

(b) Program elements

The regional pilot program shall include—

(1) expanding strategic, formal partnerships among universities with strength in research, universities that train substantial numbers of elementary and secondary school teachers, and the private sector;

(2) combining Department expertise with one or more National Aeronautics and Space Administration Educator Resource Centers;

(3) developing programs to permit current and future teachers to participate in ongoing research projects at National Laboratories and research universities and to adapt lessons learned to the classroom;

(4) designing and implementing course work;

(5) designing and implementing a strategy for measuring and assessing progress under the program; and

(6) developing models for transferring knowledge gained under the pilot program to other institutions and areas of the United States.

(c) Categorization

A grant under this section shall be considered an authorized activity under section 7381b of this title.

(Pub. L. 109-58, title IX, §983, Aug. 8, 2005, 119 Stat. 907; Pub. L. 113-188, title VI, §601(a), Nov. 26, 2014, 128 Stat. 2019.)

AMENDMENTS

2014—Subsec. (d). Pub. L. 113-188 struck out subsec. (d). Text read as follows: “No later than 2 years after