

tablishing and, if feasible, is authorized to establish” for “shall evaluate the technical and economic feasibility of the establishment of”.

Subsec. (a)(4). Pub. L. 117-167, §10110(b)(1), redesignated par. (2) as (4) and transferred it to appear after par. (3).

2020—Pub. L. 116-260 amended section generally. Prior to amendment, section related to nuclear energy research programs.

2018—Subsecs. (c) to (e). Pub. L. 115-248 redesignated subsecs. (d) and (e) as (c) and (d), respectively, and struck out former subsec. (c) which related to establishment and administration of a Nuclear Power 2010 Program.

§ 16273. Fuel cycle research, development, demonstration, and commercial application

(a) Used nuclear fuel research, development, demonstration, and commercial application

(1) In general

The Secretary shall conduct an advanced fuel cycle research, development, demonstration, and commercial application program to improve fuel cycle performance, minimize environmental and public health and safety impacts, and support a variety of options for used nuclear fuel storage, use, and disposal, including advanced nuclear reactor and non-reactor concepts (such as radioisotope power systems), which may include—

- (A) dry cask storage;
- (B) consolidated interim storage;
- (C) deep geological storage and disposal, including mined repository, and other technologies;
- (D) used nuclear fuel transportation;
- (E) integrated waste management systems;
- (F) vitrification;
- (G) fuel recycling and transmutation technologies, including advanced reprocessing technologies such as electrochemical and molten salt technologies, and advanced redox extraction technologies;
- (H) advanced materials to be used in subparagraphs (A) through (G); and
- (I) other areas as determined by the Secretary.

(2) Requirements

In carrying out the program under this subsection, the Secretary shall—

- (A) ensure all activities and designs incorporate state of the art safeguards technologies and techniques to reduce risk of proliferation;
- (B) consult with the Administrator of the National Nuclear Security Administration to integrate safeguards and security by design;
- (C) consider the potential benefits and other impacts of those activities for civilian nuclear applications, environmental health and safety, and national security, including consideration of public consent; and
- (D) consider the economic viability of all activities and designs.

(3) Authorization of appropriations

There are authorized to be appropriated to the Secretary to carry out the program under this subsection \$60,000,000 for each of fiscal years 2021 through 2025.

(b) Advanced fuels

(1) In general

The Secretary shall conduct an advanced fuels research, development, demonstration, and commercial application program on next-generation light water reactor and advanced reactor fuels that demonstrate the potential for improved—

- (A) performance;
- (B) accident tolerance;
- (C) proliferation resistance;
- (D) use of resources;
- (E) environmental impact; and
- (F) economics.

(2) Requirements

In carrying out the program under this subsection, the Secretary shall focus on the development of advanced technology fuels, including fabrication techniques, that offer improved accident-tolerance and economic performance with the goal of initial commercial application by December 31, 2025.

(3) Report

Not later than 180 days December 27, 2020, the Secretary shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report that describes how the technologies and concepts studied under this program would impact reactor economics, the fuel cycle, operations, safety, proliferation, and the environment.

(4) Authorization of appropriations

There are authorized to be appropriated to the Secretary to carry out the program under this subsection \$125,000,000 for each of fiscal years 2021 through 2025.

(Pub. L. 109-58, title IX, §953, Aug. 8, 2005, 119 Stat. 886; Pub. L. 115-248, §2(c), Sept. 28, 2018, 132 Stat. 3155; Pub. L. 116-260, div. Z, title II, §2003(b), Dec. 27, 2020, 134 Stat. 2462.)

Editorial Notes

AMENDMENTS

2020—Pub. L. 116-260 amended section generally. Prior to amendment, section related to advanced fuel cycle initiative.

2018—Subsec. (a). Pub. L. 115-248 struck out “, acting through the Director of the Office of Nuclear Energy, Science and Technology,” after “The Secretary”.

§ 16274. Nuclear science and engineering support

(a) University nuclear science and engineering support

(1) In general

The Secretary shall conduct a program to invest in human resources and infrastructure in the nuclear sciences and related fields, including health physics, nuclear engineering, and radiochemistry, consistent with missions of the Department related to civilian nuclear research, development, demonstration, and commercial application.

(2) Requirements

In carrying out the program under this subsection, the Secretary shall—