

(Pub. L. 109–58, title VI, §638, Aug. 8, 2005, 119 Stat. 791.)

PART B—NEXT GENERATION NUCLEAR PLANT
PROJECT

§ 16021. Project establishment

(a) Establishment

The Secretary shall establish a project to be known as the “Next Generation Nuclear Plant Project” (referred to in this part as the “Project”).

(b) Content

The Project shall consist of the research, development, design, construction, and operation of a prototype plant, including a nuclear reactor that—

(1) is based on research and development activities supported by the Generation IV Nuclear Energy Systems Initiative under section 16272(c)¹ of this title; and

(2) shall be used—

(A) to generate electricity;

(B) to produce hydrogen; or

(C) both to generate electricity and to produce hydrogen.

(Pub. L. 109–58, title VI, §641, Aug. 8, 2005, 119 Stat. 794; Pub. L. 115–248, §2(b)(2), Sept. 28, 2018, 132 Stat. 3155.)

Editorial Notes

REFERENCES IN TEXT

Section 16272 of this title, referred to in subsec. (b)(1), was amended generally by Pub. L. 116–260, div. Z, title II, §2003(a), Dec. 27, 2020, 134 Stat. 2459 and, as amended, section 16272(c) of this title no longer refers to the Generation IV Nuclear Energy Systems Initiative.

AMENDMENTS

2018—Pub. L. 115–248 substituted “section 16272(c)” for “section 16272(d)”, which had been an editorial translation of a reference in original text to section 942(d) of Pub. L. 109–58.

§ 16022. Project management

(a) Departmental management

(1) In general

The Project shall be managed in the Department by the Office of Nuclear Energy, Science, and Technology.

(2) Generation IV Nuclear Energy Systems program

The Secretary may combine the Project with the Generation IV Nuclear Energy Systems Initiative.

(3) Existing DOE project management expertise

The Secretary may utilize capabilities for review of construction projects for advanced scientific facilities within the Office of Science to track the progress of the Project.

(b) Laboratory management

(1) Lead Laboratory

The Idaho National Laboratory shall be the lead National Laboratory for the Project and

shall collaborate with other National Laboratories, institutions of higher education, other research institutes, industrial researchers, and international researchers to carry out the Project.

(2) Industrial partnerships

(A) In general

The Idaho National Laboratory shall organize a consortium of appropriate industrial partners that will carry out cost-shared research, development, design, and construction activities, and operate research facilities, on behalf of the Project.

(B) Cost-sharing

Activities of industrial partners funded by the Project shall be cost-shared in accordance with section 16352 of this title.

(C) Preference

Preference in determining the final structure of the consortium or any partnerships under this part shall be given to a structure (including designating as a lead industrial partner an entity incorporated in the United States) that retains United States technological leadership in the Project while maximizing cost sharing opportunities and minimizing Federal funding responsibilities.

(3) Prototype plant siting

The prototype nuclear reactor and associated plant shall be sited at the Idaho National Laboratory in Idaho.

(4) Reactor test capabilities

The Project shall use, if appropriate, reactor test capabilities at the Idaho National Laboratory.

(5) Other Laboratory capabilities

The Project may use, if appropriate, facilities at other National Laboratories.

(Pub. L. 109–58, title VI, §642, Aug. 8, 2005, 119 Stat. 795.)

§ 16023. Project organization

(a) Major project elements

The Project shall consist of the following major program elements:

(1) High-temperature hydrogen production technology development and validation.

(2) Energy conversion technology development and validation.

(3) Nuclear fuel development, characterization, and qualification.

(4) Materials selection, development, testing, and qualification.

(5) Reactor and balance-of-plant design, engineering, safety analysis, and qualification.

(b) Project phases

The Project shall be conducted in the following phases:

(1) First project phase

A first project phase shall be conducted to—

(A) select and validate the appropriate technology under subsection (a)(1);

(B) carry out enabling research, development, and demonstration activities on tech-

¹ See References in Text note below.

nologies and components under paragraphs (2) through (4) of subsection (a);

(C) determine whether it is appropriate to combine electricity generation and hydrogen production in a single prototype nuclear reactor and plant; and

(D) carry out initial design activities for a prototype nuclear reactor and plant, including development of design methods and safety analytical methods and studies under subsection (a)(5).

(2) Second project phase

A second project phase shall be conducted to—

(A) continue appropriate activities under paragraphs (1) through (5) of subsection (a);

(B) develop, through a competitive process, a final design for the prototype nuclear reactor and plant;

(C) apply for licenses to construct and operate the prototype nuclear reactor from the Nuclear Regulatory Commission; and

(D) construct and start up operations of the prototype nuclear reactor and its associated hydrogen or electricity production facilities.

(c) Project requirements

(1) In general

The Secretary shall ensure that the Project is structured so as to maximize the technical interchange and transfer of technologies and ideas into the Project from other sources of relevant expertise, including—

(A) the nuclear power industry, including nuclear powerplant construction firms, particularly with respect to issues associated with plant design, construction, and operational and safety issues;

(B) the chemical processing industry, particularly with respect to issues relating to—

(i) the use of process energy for production of hydrogen; and

(ii) the integration of technologies developed by the Project into chemical processing environments; and

(C) international efforts in areas related to the Project, particularly with respect to hydrogen production technologies.

(2) International collaboration

(A) In general

The Secretary shall seek international cooperation, participation, and financial contributions for the Project.

(B) Assistance from international partners

The Secretary, through the Idaho National Laboratory, may contract for assistance from specialists or facilities from member countries of the Generation IV International Forum, the Russian Federation, or other international partners if the specialists or facilities provide access to cost-effective and relevant skills or test capabilities.

(C) Partner nations

The Project may involve demonstration of selected project objectives in a partner country.

(D) Generation IV International Forum

The Secretary shall ensure that international activities of the Project are coordi-

nated with the Generation IV International Forum.

(3) Review by Nuclear Energy Research Advisory Committee

(A) In general

The Nuclear Energy Research Advisory Committee of the Department (referred to in this paragraph as the “NERAC”) shall—

(i) review all program plans for the Project and all progress under the Project on an ongoing basis; and

(ii) ensure that important scientific, technical, safety, and program management issues receive attention in the Project and by the Secretary.

(B) Additional expertise

The NERAC shall supplement the expertise of the NERAC or appoint subpanels to incorporate into the review by the NERAC the relevant sources of expertise described under paragraph (1).

(C) Initial review

Not later than 180 days after August 8, 2005, the NERAC shall—

(i) review existing program plans for the Project in light of the recommendations of the document entitled “Design Features and Technology Uncertainties for the Next Generation Nuclear Plant,” dated June 30, 2004; and

(ii) address any recommendations of the document not incorporated in program plans for the Project.

(D) First project phase review

On a determination by the Secretary that the appropriate activities under the first project phase under subsection (b)(1) are nearly complete, the Secretary shall request the NERAC to conduct a comprehensive review of the Project and to report to the Secretary the recommendation of the NERAC concerning whether the Project is ready to proceed to the second project phase under subsection (b)(2).

(E) Transmittal of reports to Congress

Not later than 60 days after receiving any report from the NERAC related to the Project, the Secretary shall submit to the appropriate committees of the Senate and the House of Representatives a copy of the report, along with any additional views of the Secretary that the Secretary may consider appropriate.

(Pub. L. 109-58, title VI, §643, Aug. 8, 2005, 119 Stat. 795.)

§ 16024. Nuclear Regulatory Commission

(a) In general

In accordance with section 5842 of this title, the Nuclear Regulatory Commission shall have licensing and regulatory authority for any reactor authorized under this part.

(b) Licensing strategy

Not later than 3 years after August 8, 2005, the Secretary and the Chairman of the Nuclear Regulatory Commission shall jointly submit to the