

section 10221 of this title with respect to a test and evaluation facility to be taken prior to the initiation of onsite construction of a test and evaluation facility shall require the preparation of an environmental impact statement under section 102(2)(C) of the Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)), or to require the preparation of environmental reports, except as otherwise specifically provided for in this subchapter.

(2) The Secretary and the heads of all other Federal agencies shall, to the maximum extent possible, avoid duplication of efforts in the preparation of reports under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(Pub. L. 97-425, title II, § 216, Jan. 7, 1983, 96 Stat. 2248.)

Editorial Notes

REFERENCES IN TEXT

The National Environmental Policy Act of 1969, referred to in subsec. (b)(2), is Pub. L. 91-190, Jan. 1, 1970, 83 Stat. 852, as amended, which is classified generally to chapter 55 (§ 4321 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 4321 of this title and Tables.

§ 10197. Research and development on disposal of high-level radioactive waste

(a) Purpose

Not later than 64 months after January 7, 1983, the Secretary is authorized to, to the extent practicable, begin at a site evaluated under section 10194 of this title, as part of and as an extension of siting research activities of such site under such section, the mining and construction of a test and evaluation facility. Prior to the mining and construction of such facility, the Secretary shall prepare an environmental assessment. The purpose of such facility shall be—

- (1) to supplement and focus the repository site characterization process;
- (2) to provide the conditions under which known technological components can be integrated to demonstrate a functioning repository-like system;
- (3) to provide a means of identifying, evaluating, and resolving potential repository licensing issues that could not be resolved during the siting research program conducted under section 10192¹ of this title;
- (4) to validate, under actual conditions, the scientific models used in the design of a repository;
- (5) to refine the design and engineering of repository components and systems and to confirm the predicted behavior of such components and systems;
- (6) to supplement the siting data, the generic and specific geological characteristics developed under section 10194 of this title relating to isolating disposal materials in the physical environment of a repository;
- (7) to evaluate the design concepts for packaging, handling, and emplacement of high-level radioactive waste and spent nuclear fuel at the design rate; and

- (8) to establish operating capability without exposing workers to excessive radiation.

(b) Design

The Secretary shall design each test and evaluation facility—

- (1) to be capable of receiving not more than 100 full-sized canisters of solidified high-level radioactive waste (which canisters shall not exceed an aggregate weight of 100 metric tons), except that spent nuclear fuel may be used instead of such waste if such waste cannot be obtained under reasonable conditions;

- (2) to permit full retrieval of solidified high-level radioactive waste, or other radioactive material used by the Secretary for testing, upon completion of the technology demonstration activities; and

- (3) based upon the principle that the high-level radioactive waste, spent nuclear fuel, or other radioactive material involved shall be isolated from the biosphere in such a way that the initial isolation is provided by engineered barriers functioning as a system with the geologic environment.

(c) Operation

(1) Not later than 88 months after January 7, 1983, the Secretary shall begin an in situ testing program at the test and evaluation facility in accordance with the mission plan developed under section 10221 of this title, for purposes of—

- (A) conducting in situ tests of bore hole sealing, geologic media fracture sealing, and room closure to establish the techniques and performance for isolation of high-level radioactive waste, spent nuclear fuel, or other radioactive materials from the biosphere;

- (B) conducting in situ tests with radioactive sources and materials to evaluate and improve reliable models for radionuclide migration, absorption, and containment within the engineered barriers and geologic media involved, if the Secretary finds there is reasonable assurance that such radioactive sources and materials will not threaten the use of such site as a repository;

- (C) conducting in situ tests to evaluate and improve models for ground water or brine flow through fractured geologic media;

- (D) conducting in situ tests under conditions representing the real time and the accelerated time behavior of the engineered barriers within the geologic environment involved;

- (E) conducting in situ tests to evaluate the effects of heat and pressure on the geologic media involved, on the hydrology of the surrounding area, and on the integrity of the disposal packages;

- (F) conducting in situ tests under both normal and abnormal repository conditions to establish safe design limits for disposal packages and to determine the effects of the gross release of radionuclides into surroundings, and the effects of various credible failure modes, including—

- (i) seismic events leading to the coupling of aquifers through the test and evaluation facility;
- (ii) thermal pulses significantly greater than the maximum calculated; and
- (iii) human intrusion creating a direct pathway to the biosphere; and

¹ So in original. Probably should be "10194".

(G) conducting such other research and development activities as the Secretary considers appropriate, including such activities necessary to obtain the use of high-level radioactive waste, spent nuclear fuel, or other radioactive materials (such as any highly radioactive material from the Three Mile Island nuclear powerplant or from the West Valley Demonstration Project) for test and evaluation purposes, if such other activities are reasonably necessary to support the repository program and if there is reasonable assurance that the radioactive sources involved will not threaten the use of such site as a repository.

(2) The in situ testing authorized in this subsection shall be designed to ensure that the suitability of the site involved for licensing by the Commission as a repository will not be adversely affected.

(d) Use of existing Department facilities

During the conducting of siting research activities under section 10194 of this title and for such period thereafter as the Secretary considers appropriate, the Secretary shall use Department facilities owned by the Federal Government on January 7, 1983, for the conducting of generically applicable tests regarding packaging, handling, and emplacement technology for solidified high-level radioactive waste and spent nuclear fuel from civilian nuclear activities.

(e) Engineered barriers

The system of engineered barriers and selected geology used in a test and evaluation facility shall have a design life at least as long as that which the Commission requires by regulations issued under this chapter, or under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.), for repositories.

(f) Role of Commission

(1)(A) Not later than 1 year after January 7, 1983, the Secretary and the Commission shall reach a written understanding establishing the procedures for review, consultation, and coordination in the planning, construction, and operation of the test and evaluation facility under this section. Such understanding shall establish a schedule, consistent with the deadlines set forth in this subchapter,² for submission by the Secretary of, and review by the Commission of and necessary action on—

(i) the mission plan prepared under section 10221 of this title; and

(ii) such reports and other information as the Commission may reasonably require to evaluate any health and safety impacts of the test and evaluation facility.

(B) Such understanding shall also establish the conditions under which the Commission may have access to the test and evaluation facility for the purpose of assessing any public health and safety concerns that it may have. No shafts may be excavated for the test and evaluation until the Secretary and the Commission enter into such understanding.

(2) Subject to section 10225 of this title, the test and evaluation facility, and the facilities

authorized in this section, shall be constructed and operated as research, development, and demonstration facilities, and shall not be subject to licensing under section 5842 of this title.

(3)(A) The Commission shall carry out a continuing analysis of the activities undertaken under this section to evaluate the adequacy of the consideration of public health and safety issues.

(B) The Commission shall report to the President, the Secretary, and the Congress as the Commission considers appropriate with respect to the conduct of activities under this section.

(g) Environmental review

The Secretary shall prepare an environmental impact statement under section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)) prior to conducting tests with radioactive materials at the test and evaluation facility. Such environmental impact statement shall incorporate, to the extent practicable, the environmental assessment prepared under subsection (a). Nothing in this subsection may be construed to limit siting research activities conducted under section 10194 of this title. This subsection shall apply only to activities performed exclusively for a test and evaluation facility.

(h) Limitations

(1) If the test and evaluation facility is not located at the site of a repository, the Secretary shall obtain the concurrence of the Commission with respect to the decontamination and decommissioning of such facility.

(2) If the test and evaluation facility is not located at a candidate site or repository site, the Secretary shall conduct only the portion of the in situ testing program required in subsection (c) determined by the Secretary to be useful in carrying out the purposes of this chapter.

(3) The operation of the test and evaluation facility shall terminate not later than—

(A) 5 years after the date on which the initial repository begins operation; or

(B) at such time as the Secretary determines that the continued operation of a test and evaluation facility is not necessary for research, development, and demonstration purposes;

whichever occurs sooner.

(4) Notwithstanding any other provisions of this subsection, as soon as practicable following any determination by the Secretary, with the concurrence of the Commission, that the test and evaluation facility is unsuitable for continued operation, the Secretary shall take such actions as are necessary to remove from such site any radioactive material placed on such site as a result of testing and evaluation activities conducted under this section. Such requirement may be waived if the Secretary, with the concurrence of the Commission, finds that short-term testing and evaluation activities using radioactive material will not endanger the public health and safety.

(Pub. L. 97-425, title II, §217, Jan. 7, 1983, 96 Stat. 2249.)

² See References in Text note below.

Editorial Notes

REFERENCES IN TEXT

The Atomic Energy Act of 1954, referred to in subsec. (e), is act Aug. 1, 1946, ch. 724, as added by act Aug. 30, 1954, ch. 1073, §1, 68 Stat. 919, which is classified principally to chapter 23 (§2011 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 2011 of this title and Tables.

This subchapter, referred to in subsec. (f)(1)(A), was in the original “this subtitle”, and was translated as this subchapter to reflect the probable intent of Congress because title II of Pub. L. 97-425, which enacted this subchapter, does not contain subtitles.

§ 10198. Research and development on spent nuclear fuel**(a) Demonstration and cooperative programs**

The Secretary shall establish a demonstration program, in cooperation with the private sector, for the dry storage of spent nuclear fuel at civilian nuclear power reactor sites, with the objective of establishing one or more technologies that the Commission may, by rule, approve for use at the sites of civilian nuclear power reactors without, to the maximum extent practicable, the need for additional site-specific approvals by the Commission. Not later than 1 year after January 7, 1983, the Secretary shall select at least 1, but not more than 3, sites evaluated under section 10194 of this title at such power reactors. In selecting such site or sites, the Secretary shall give preference to civilian nuclear power reactors that will soon have a shortage of interim storage capacity for spent nuclear fuel. Subject to reaching agreement as provided in subsection (b), the Secretary shall undertake activities to assist such power reactors with demonstration projects at such sites, which may use one of the following types of alternate storage technologies: spent nuclear fuel storage casks, caissons, or silos. The Secretary shall also undertake a cooperative program with civilian nuclear power reactors to encourage the development of the technology for spent nuclear fuel rod consolidation in existing power reactor water storage basins.

(b) Cooperative agreements

To carry out the programs described in subsection (a), the Secretary shall enter into a cooperative agreement with each utility involved that specifies, at a minimum, that—

(1) such utility shall select the alternate storage technique to be used, make the land and spent nuclear fuel available for the dry storage demonstration, submit and provide site-specific documentation for a license application to the Commission, obtain a license relating to the facility involved, construct such facility, operate such facility after licensing, pay the costs required to construct such facility, and pay all costs associated with the operation and maintenance of such facility;

(2) the Secretary shall provide, on a cost-sharing basis, consultative and technical assistance, including design support and generic licensing documentation, to assist such utility in obtaining the construction authorization and appropriate license from the Commission; and

(3) the Secretary shall provide generic research and development of alternative spent nuclear fuel storage techniques to enhance utility-provided, at-reactor storage capabilities, if authorized in any other provision of this chapter or in any other provision of law.

(c) Dry storage research and development

(1) The consultative and technical assistance referred to in subsection (b)(2) may include, but shall not be limited to, the establishment of a research and development program for the dry storage of not more than 300 metric tons of spent nuclear fuel at facilities owned by the Federal Government on January 7, 1983. The purpose of such program shall be to collect necessary data to assist the utilities involved in the licensing process.

(2) To the extent available, and consistent with the provisions of section 10155 of this title, the Secretary shall provide spent nuclear fuel for the research and development program authorized in this subsection from spent nuclear fuel received by the Secretary for storage under section 10155 of this title. Such spent nuclear fuel shall not be subject to the provisions of section 10155(e) of this title.

(d) Funding

The total contribution from the Secretary from Federal funds and the use of Federal facilities or services shall not exceed 25 percent of the total costs of the demonstration program authorized in subsection (a), as estimated by the Secretary. All remaining costs of such program shall be paid by the utilities involved or shall be provided by the Secretary from the Interim Storage Fund established in section 10156 of this title.

(e) Relation to spent nuclear fuel storage program

The spent nuclear fuel storage program authorized in section 10155 of this title shall not be construed to authorize the use of research development or demonstration facilities owned by the Department unless—

(1) a period of 30 calendar days (not including any day in which either House of Congress is not in session because of adjournment of more than 3 calendar days to a day certain) has passed after the Secretary has transmitted 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 written report containing a full and complete statement concerning (A) the facility involved; (B) any necessary modifications; (C) the cost thereof; and (D) the impact on the authorized research and development program; or

(2) each such committee, before the expiration of such period, has transmitted to the Secretary a written notice to the effect that such committee has no objection to the proposed use of such facility.

(Pub. L. 97-425, title II, §218, Jan. 7, 1983, 96 Stat. 2252; Pub. L. 103-437, §15(c)(10), Nov. 2, 1994, 108 Stat. 4592.)