

Public Law 96-567  
96th Congress

An Act

To provide for an accelerated and coordinated program of light water nuclear reactor safety research, development, and demonstration, to be carried out by the Department of Energy.

Dec. 22, 1980  
[H.R. 7865]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Nuclear Safety Research, Development, and Demonstration Act of 1980".*

Nuclear Safety  
Research,  
Development,  
and  
Demonstration  
Act of 1980.  
42 USC 9701  
note.  
42 USC 9701.

FINDINGS AND PURPOSE

SEC. 2. (a) The Congress finds that—

- (1) nuclear energy is one of the two major energy sources available for electric energy production in the United States during the balance of the twentieth century;
- (2) continued development of nuclear power is dependent upon maintaining an extremely high level of safety in the operation of nuclear plants, and on public recognition that these facilities do not constitute a significant threat to human health or safety;
- (3) it is the responsibility of utilities, as owners and operators of nuclear powerplants, to assure that such plants are designed and operated safely and reliably; and
- (4) a proper role of the Federal Government in assuring nuclear powerplant safety, in addition to its regulatory function, is the conduct of a research, development, and demonstration program to provide important scientific and technical information which can contribute to sound design and safe operation of these plants.

(b) It is declared to be the policy of the United States and the purpose of this Act to establish a research, development, and demonstration program for developing practical improvements in the generic safety of nuclear powerplants during the next five years, beginning in the fiscal year 1981. The objectives of such program shall be—

- (1) to reduce the likelihood and severity of potentially serious nuclear powerplant accidents; and
- (2) to reduce the likelihood of disrupting the population in the vicinity of nuclear powerplants as the result of nuclear powerplant accidents.

Nothing in this Act shall be construed as preventing the Secretary from undertaking projects or activities, in addition to those specified in this Act, which appropriately further the purpose and objectives set forth in this subsection. Nothing in this Act shall authorize the Secretary to assume responsibility for the management, cleanup or repair of any commercial nuclear powerplant. Nothing in this Act shall be construed as limiting the authority of the Secretary under any other law.

DEFINITIONS

SEC. 3. For purposes of this Act—

42 USC 9702.

(1) the term "Secretary" means the Secretary of Energy;

(2) the term "Government agency" means any department, agency, commission, or independent establishment in the executive branch of the Federal Government, or any corporation, wholly or partly owned by the United States, which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Federal Government;

(3) the term "Commission" means the Nuclear Regulatory Commission; and

(4) the term "Advisory Committee" means the Advisory Committee on Reactor Safeguards established by section 29 of the Atomic Energy Act of 1954, as amended.

42 USC 2039.

**ESTABLISHMENT OF RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAM FOR IMPROVING THE SAFETY OF NUCLEAR POWERPLANTS**

42 USC 9703.

**SEC. 4.** (a) The Secretary shall establish a research, development, and demonstration program to carry out the purpose of this Act. As part of such program, the Secretary shall at a minimum—

(1) refine further the assessment of risk factors associated with the generic design and operation of nuclear powerplants to determine the degree and consequences of propagation of failures of systems, subsystems, and components, including consideration of the interaction between the primary and secondary systems;

(2) develop potentially cost-beneficial changes in the generic design and operation of nuclear powerplants that can (A) significantly reduce the risks from unintentional release of radioactive material from the various engineered barriers of nuclear powerplants and (B) reduce the radiation exposure to workers during plant operation and maintenance;

(3) develop potentially cost-beneficial generic methods and designs that will significantly improve the performance of operators of nuclear powerplants under routine, abnormal, and accident conditions;

(4) identify the effect of total or partial automation of generic plant systems on reactor safety, operation, reliability, economics, and operator performance;

(5) conduct further experimental investigations under abnormal operational and postulated accident conditions primarily for light water reactors to determine the consequences of such conditions. These investigations shall include, but not be limited to, the following:

(A) fuel failure at higher than standard burn-up levels;

(B) fuel-cladding interactions;

(C) fuel and cladding interactions with coolant under various temperatures and pressures;

(D) thermohydraulic behavior in the reactor core;

(E) mechanisms to suppress and control the generation of hydrogen gas;

(F) improved instrumentation for monitoring reactor cores;

(G) engineered-barrier failure modes; and

(H) fission product release and transport from failed fuel;

(6) provide for the examination and analysis of any nuclear powerplant fuel, component, or system which the Secretary

Experimental investigations.

deems to offer significant benefit in safety analysis and which is made available to the Secretary for a nominal cost, such as \$1: *Provided, however,* That the Secretary shall accept only the number of samples of such fuel, component, or system necessary to carry out such examination and analysis; and

(7) identify the aptitudes, training, and manning levels which are necessary to assure reliable operator performance under normal, abnormal, and emergency conditions.

(b) In carrying out the generic safety research, development, and demonstration program established under this Act, the Secretary—

(1) shall coordinate with the Commission and, to the extent necessary, enter into a new memorandum of understanding or revise existing memoranda for the purpose of eliminating unnecessary duplication and avoiding programmatic conflict with any reactor safety research program of the Commission, including the Improved Safety Systems Research program;

(2) shall, to the extent practical, coordinate his activities with such other Government agencies, foreign governments, and industry as he deems appropriate to utilize their expertise, to minimize duplication of effort, and to ensure that information useful for improved concepts applicable to nuclear powerplant safety can be applied in a timely manner. The Secretary may enter into agreements and memoranda of understanding to accomplish these ends, but no such agreement shall have the effect of delaying the development and implementation of programs authorized under this Act;

(3) shall utilize, to the extent feasible, underutilized federally owned research reactors and facilities, along with the associated personnel, to maintain existing capabilities and to ensure that the research is generic in nature; and

(4) shall make such recommendations as are practical to minimize the complexity of nuclear powerplant systems, including secondary systems, and operations.

#### NATIONAL REACTOR ENGINEERING SIMULATOR

SEC. 5. (a) The Secretary, in consultation with the Commission and the Advisory Committee, shall initiate a study of the need for and feasibility of establishing a reactor engineering simulator facility at a national laboratory, for the primary purpose of fostering research in generic design improvements and simplifications through the simulation of the performance of various types of light water reactors under a wide variety of abnormal conditions and postulated accident conditions.

(b) In performing the study, the Secretary shall consider relevant factors including, but not limited to—

(1) the potential advantages that would accrue from the establishment of such a facility;

(2) the extent to which such a facility would further the generic safety research and development program established by this Act;

(3) the extent to which such a facility can be established by nongovernmental entities;

(4) the opportunities for cost sharing by nongovernmental entities in the construction and operation of such a facility;

(5) the importance of such a facility in emergencies to limit the extent of any future nuclear powerplant excursions;

Report to congressional committees.

(6) the potential for international cooperation in the establishment and operation of such a facility; and

(7) the appropriate national laboratory for siting such a facility.

(c) The Secretary shall, by January 1, 1982, submit to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report characterizing the study and the resulting conclusions and recommendations.

FEDERAL NUCLEAR OPERATIONS CORPS

Study. 42 USC 9705.

SEC. 6. (a) The Secretary, in cooperation with the Nuclear Regulatory Commission, shall initiate a study as to the sufficiency of efforts in the United States to provide specially trained professionals to operate the controls of nuclear powerplants and other facilities in the back-end of the nuclear fuel cycle. In carrying out the study, the Secretary shall coordinate his activities with the ongoing programs of the utility industry and other Federal governmental agencies for obtaining high standards of operator performance.

(b)(1) In conducting the study the Secretary shall assess the desirability and feasibility of creating a Federal Corps of such professionals to inspect and supervise such operations.

(2) The assessment shall consider the establishment of an academy to train Corps professionals in all aspects of nuclear technology, nuclear operations, nuclear regulatory and related law, and health science.

(3) The assessment shall include the appropriate organizational approach for the establishment of a Federal Corps within the executive branch.

Report to Congress.

(c) The Secretary shall complete the study within one year after the date of enactment of this Act and shall submit a report along with his recommendations to the Congress.

REPORTS AND DISSEMINATION OF INFORMATION

42 USC 9706.

SEC. 7. The Secretary shall assure that full and complete safety-related information resulting from any project or other activity conducted under this Act is made available in a timely manner to appropriate committees of Congress, Federal, State, and local authorities, relevant segments of private industry, the scientific community, and the public.

COMPREHENSIVE PROGRAM MANAGEMENT PLAN

42 USC 9707.

SEC. 8. (a) The Secretary is authorized and directed to prepare a comprehensive program management plan for the conduct of research, development, and demonstration activities under this Act consistent with the provisions of section 4. In the preparation of such plan, the Secretary shall consult with the Commission and the Advisory Committee and with the heads of such other Government agencies and such public and private organizations as he deems appropriate.

(b) The Secretary shall transmit the comprehensive program management plan along with any comments by the Commission on the plan to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources and the Committee on Environment and Public Works of

the Senate within twelve months after the date of the enactment of this Act. Revisions to the plan shall be transmitted to such committees whenever deemed appropriate by the Secretary.

(c) Concurrently with the submission of the President's annual budget to the Congress for each year after the year in which the comprehensive plan is initially transmitted under subsection (b), the Secretary shall transmit to the Congress a detailed description of the comprehensive plan as then in effect. The detailed description of the comprehensive plan under this subsection shall include, but need not be limited to, a statement setting forth any change in—

(1) the program strategies and plans, including detailed milestone goals to be achieved during the next fiscal year for all major activities and projects;

(2) the economic, environmental, and societal significance which the program may have;

(3) the total estimated cost of individual program items; and

(4) the estimated relative financial contributions of the Federal Government and non-Federal participants in the program.

Such description shall also include a detailed justification of any such changes, a description of the progress made toward achieving the goals of this Act, a statement on the status of interagency cooperation in meeting such goals, and any legislative or other recommendations which the Secretary may have to help attain such goals.

#### AUTHORIZATION OF APPROPRIATIONS

SEC. 9. There is authorized to be appropriated to the Secretary to carry out this Act such sums as may be authorized by legislation hereafter enacted.

42 USC 9708.

SEC. 10. Project 78-3-b, authorized by section 102 of Public Law 95-238, the fusion materials irradiation test facility, is hereby designated as the "Mike McCormack Fusion Materials Test Facility". Any reference in any law, regulation, map, record, or other document of the United States to the fusion materials irradiation test facility shall be considered a reference to the "Mike McCormack Fusion Materials Test Facility".

92 Stat. 49.

Approved December 22, 1980.

#### LEGISLATIVE HISTORY:

HOUSE REPORT No. 96-1242 (Comm. on Science and Technology).

SENATE REPORT No. 96-941 accompanying S. 2884 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 126 (1980):

Aug. 25, considered and passed House.

Sept. 26, considered and passed Senate, amended, in lieu of S. 2884.

Dec. 4, House concurred in Senate amendment with an amendment.

Dec. 12, Senate agreed to House amendment with amendments.

Dec. 13, House agreed to Senate amendments.

Revisions,  
transmittal  
to congressional  
committees.  
Plan description.