

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

(Pub. L. 96-567, § 2, Dec. 22, 1980, 94 Stat. 3329.)

#### SHORT TITLE

Pub. L. 96-567, § 1, Dec. 22, 1980, 94 Stat. 3329, provided: "That this Act [enacting this chapter] may be cited as the 'Nuclear Safety Research, Development, and Demonstration Act of 1980'."

#### § 9702. Definitions

For purposes of this chapter—

(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 2039 of this title.

(Pub. L. 96-567, § 3, Dec. 22, 1980, 94 Stat. 3329.)

#### § 9703. Research, development, and demonstration program; establishment; purposes; implementation

(a) The Secretary shall establish a research, development, and demonstration program to carry out the purpose of this chapter. 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 op-

eration 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 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 chapter, 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;