

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 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 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;

(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 chapter;

(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.

(Pub. L. 96-567, § 4, Dec. 22, 1980, 94 Stat. 3330.)

#### TRANSFER OF FUNCTIONS

For transfer of certain functions from Nuclear Regulatory Commission to Chairman thereof, see Reorg. Plan No. 1 of 1980, 45 F.R. 40561, 94 Stat. 3585, set out as a note under section 5841 of this title.

### § 9704. National reactor engineering simulator feasibility study

#### (a) Consultative requirements; purpose

The Secretary, in consultation with the Commission and the Advisory Committee, shall ini-