

## STATUS OF UNITED STATES CIVILIAN WASTE MANAGEMENT PROGRAM

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### ABSTRACT

The need to solve the problem of how to safely and successfully dispose of nuclear waste has existed since the Atomic Age began. Until recently, however, major obstacles have existed which have prevented this country from proceeding with development of a permanent and reliable solution to the nuclear waste problem. These obstacles have included fluctuations in national policy concerning nuclear energy and related nuclear waste issues, such as, lack of a clear Federal management policy toward nuclear waste disposal; lack of a consistent and reliable means of funding nuclear waste disposal; and unwillingness of States to host a repository.

The process and schedule leading to development of nuclear waste repositories essentially have been established by the Nuclear Waste Policy Act of 1982 signed into law by the President on January 7, 1983. This Act mandates program schedules and processes for siting, licensing, constructing and operating storage and disposal facilities for spent nuclear fuel and high-level wastes.

The Nuclear Waste Policy Act of 1982 confirms the Federal responsibility for nuclear waste management and provides for unprecedented involvement by States, Indian tribes and the public. The Act provides a comprehensive framework for disposing of spent nuclear fuel and high-level radioactive wastes of domestic origin generated by civilian nuclear power reactors. It establishes detailed schedules and procedures for selecting and developing geologic repositories; provides a mechanism for financing the cost of disposal; and sets forth other provisions relating to nuclear waste disposal.

The other provisions of the Act include provision for a user-financed federal interim storage facility with time and quantity limitations, as well as strict Nuclear Regulatory Commission-prescribed eligibility criteria; a proposal for a Federally-owned and operated monitored retrievable storage (MRS) facility for the interim period prior to operation of a permanent repository; and provision for a Test and Evaluation Facility (TEF).

This paper will not attempt to cover all provisions of the Act, but will instead center on the schedule and current status and siting of the first two geologic repositories.

### BACKGROUND

The Nuclear Waste Policy Act of 1982 (Public Law 97-425) was signed into law by the President, January 7, 1983. The major objectives of the Act are to provide for the development of repositories for the disposal of high-level radioactive waste and spent nuclear fuel, to establish a program of research, development, and demonstration regarding the disposal of high-level radioactive waste and spent fuel, and for other purposes related to disposal and storage of spent fuel and high-level radioactive waste.

To achieve these objectives in the near term, the Department will pursue four program goals, summarized below:

1. Site, design, construct, and operate one or more mined geologic repositories by January 31, 1998.

2. Design and site an engineered Monitored Retrievable Storage Facility, on a schedule that will permit its timely construction, should the Congress so determine.
3. Assist utilities in providing adequate, safe at-reactor storage of spent fuel prior to Federal acceptance and stand ready to deploy limited Federal Government storage to utilities on an interim basis, if they are determined qualified by the Nuclear Regulatory Commission.
4. Manage the technical program and the funds collected for disposal and storage services, in an effective and efficient manner.

The Act established a schedule and step-by-step process by which the President, the Congress, the States, affected Indian tribes, the

U.S. Department of Energy (DOE) and other Federal agencies must work together in the siting, construction and operation of geologic repositories for disposal of high-level radioactive waste generated by civilian nuclear reactors. This law has provided a mandate and unprecedented collaboration among the Federal Government, the States and the public--for proceeding with the identification and selection of sites for a repository as well as for interim storage facilities in the event they are needed.

The Act also established a mechanism to ensure adequate funding for the program to be paid for by the users of nuclear power. As of April 7, 1983, DOE began charging all U.S. utilities with nuclear power reactors a fee of one mill (one tenth of a cent) per kilowatt hour of electricity generated by a civilian nuclear power reactor for disposal services. Based on this charge, revenue flows will approximate \$300 million to \$400 million a year. In addition, for existing spent fuel in inventory at reactor sites as of April 7, there is anticipated revenue amounting to approximately \$2 billion.

To implement the Act and to carry out the associated programs and projects, the Office of Civilian Radioactive Waste Management--called for in the Act--has been established to report directly to the Secretary of Energy.

#### Status

##### o Permanent Disposal of Nuclear Waste

DOE developed a standard contract for use as the formal agreement between DOE and utilities to dispose of spent fuel or high-level waste beginning in 1998. Owners and generators of spent fuel or high-level waste had until June 30, 1983, to execute the contract with the Department. That target, specified in the Act, has been met. Seventy contracts have been signed with 56 different organizations, including 46 lead nuclear utilities covering 80 licensed nuclear plants, eight owners of industrial test reactors, and two nuclear fuel vendors. The contract sets forth terms and conditions as well as financial procedures and a fee structure. Furthermore, the contract obligates DOE to begin receiving by 1998 nuclear waste for disposal.

Guidelines to be used for the recommendation sites for a repository were transmitted on November 22, 1983, by the Department of Energy to the Nuclear Regulatory Commission (NRC) for review and concurrence. These Guidelines have been developed through consultation with other Federal agencies and with Governors; as a result of testimony given at public hearings around the country; and after reviewing written comments submitted by all interested parties. These guidelines establish the performance requirements for a geologic repository that candidate sites must meet, and specify how DOE will carry out its site selection process.

DOE is preparing a draft Mission Plan describing the program being conducted by DOE to fulfill the requirements of the Act. As required by the Act, DOE will submit the draft Mission Plan to the States, the affected Indian tribes, the NRC and other Federal Agencies for their comments and will make it available for public inspection. When finalized, the Mission Plan will be submitted to Congress. The Act requires DOE to submit the Mission Plan to Congress not later than 17 months after the date of enactment of the Act. The Mission Plan will present the Civilian Radioactive Waste Management Program objectives, strategies, programs and projects as well as key features of the repository program as required specifically by the Act.

DOE has identified nine potentially acceptable repository sites within six states for the first repository and has notified the Governors and legislatures of these states. The six states are: Louisiana, Texas, Utah, Mississippi, Nevada and Washington. DOE has held public hearings in those States in the vicinity of the potentially acceptable sites: to solicit comments on its intent to nominate five or more sites; and to receive recommendations on issues to be addressed in an environmental assessment and in any site characterization. From among the nominated sites, three sites will be recommended to the President by January 1985 for site characterization. Following site characterization, DOE will recommend one of those sites for construction of the first repository.

As part of DOE's efforts toward siting a second repository, DOE is conducting studies of crystalline rock in 17 states and has informed Governors of those states of DOE's on-going literature studies to determine if their states contain potentially acceptable sites for a second repository. These states are: Wisconsin, Michigan, Rhode Island, Minnesota, Massachusetts, South Carolina, New Hampshire, Vermont, Maine, New Jersey, New York, Georgia, North Carolina, Maryland, Virginia, Pennsylvania, and Connecticut. DOE has conducted no field studies in these states and will not do so until completion of literature surveys around the end of 1984. Potentially acceptable sites for the second repository are planned to be identified in summer 1985.

##### o Monitored Retrievable Storage

DOE believes the capability to deploy a monitored retrievable storage facility would be a prudent addition to the overall nuclear waste strategy. Such a facility could serve as backup to the repository in the event of unanticipated delays in repository operation. DOE prepared a report to Congress describing the research and development activities necessary to develop the MRS proposal. This report was submitted to Congress in June 1983. By Mid 1985, DOE will submit to Congress a proposal and supporting plan and environmental assessment to authorize construction of one or more MRS facilities on a parallel schedule to the repository.

o Interim Storage

The Act clearly states that utilities have the primary responsibilities for the interim storage of spent fuel. For utilities which are unable to provide adequate at-reactor storage capacity for spent fuel, DOE is authorized to provide interim storage for up to 1900 metric tons of spent fuel. The Nuclear Regulatory Commission has published a proposed rule to determine eligibility of utilities for federal interim storage; and DOE is developing what will be a standard contract and fee schedule for federal interim storage. As required by the Act, DOE will conduct cooperative programs and demonstrate storage technologies. In October 1983, DOE selected three utilities to participate in cooperative programs with DOE. DOE will conduct licensed demonstrations in dry storage technologies with Virginia Electric and Power Company and with Carolina Power and Light; and DOE will conduct a fuel rod consolidation demonstration with Northeast Utilities Company.

o International Cooperation

On March 30, 1983, DOE and NRC published a Joint Notice in the Federal Register announcing the policy of the United States to cooperate with and provide technical assistance non-nuclear weapons states in the field of spent fuel storage and disposal. Egypt, Brazil, Korea and the Netherlands have expressed interest in this offer. Informal expressions of interest also have been expressed by other countries.