



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

FEB 14 1980

MEMORANDUM FOR: Agreement States  
Non-Agreement States  
State Liaison Officers

FROM: G. Wayne Kerr, Acting Director  
Office of State Programs

SUBJECT: RADIOACTIVE WASTE MANAGEMENT PROGRAM

Attached for your information is a White House press release as well as a fact sheet on the President's program on radioactive waste management.

In addition, we have attached the prepared statements of William Dircks and George Cunningham which were submitted before the Subcommittee on Energy, Nuclear Proliferation and Federal Services, Committee on Governmental Affairs on February 13, 1980.

A handwritten signature in cursive script, reading "G. Wayne Kerr", is positioned above the typed name.

G. Wayne Kerr, Acting Director  
Office of State Programs

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Office of the White House Press Secretary

THE WHITE HOUSE

TO THE CONGRESS OF THE UNITED STATES:

Today I am establishing this Nation's first comprehensive radioactive waste management program. My paramount objective in managing nuclear wastes is to protect the health and safety of all Americans, both now and in the future. I share this responsibility with elected officials at all levels of our government. Our citizens have a deep concern that the beneficial uses of nuclear technology, including the generation of electricity, not be allowed to imperil public health or safety now or in the future.

For more than 30 years, radioactive wastes have been generated by programs for national defense, by the commercial nuclear power program, and by a variety of medical, industrial and research activities. Yet past governmental efforts to manage radioactive wastes have not been technically adequate. Moreover, they have failed to involve successfully the States, local governments, and the public in policy or program decisions. My actions today lay the foundation for both a technically superior program and a full cooperative Federal-State partnership to ensure public confidence in a waste management program.

My program is consistent with the broad consensus that has evolved from the efforts of the Interagency Review Group on Radioactive Waste Management (IRG) which I established. The IRG findings and analysis were comprehensive, thorough and widely reviewed by public, industry and citizen groups, State and local governments, and members of the Congress. Evaluations of the scientific and technical analyses were obtained through a broad and rigorous peer review by the scientific community. The final recommendations benefited from and reflect this input.

My objective is to establish a comprehensive program for the management of all types of radioactive wastes. My policies and programs establish mechanisms to ensure that elected officials and the public fully participate in waste decisions, and direct Federal departments and agencies to implement a waste management strategy which is safe, technically sound, conservative, and open to continuous public review. This approach will help ensure that we will reach our objective -- the safe storage and disposal of all forms of nuclear waste.

Our primary objective is to isolate existing and future radioactive waste from military and civilian activities from the biosphere and pose no significant threat to public health and safety. The responsibility for resolving military and civilian waste management problems shall not be deferred to future generations. The technical program must meet all relevant radiological protection criteria as well as all other applicable regulatory requirements. This effort must proceed regardless of future developments within the nuclear industry -- its future size, and resolution of specific fuel cycle and reactor design issues. The specific steps outlined below are each aimed at accomplishing this overall objective.

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First, my Administration is committed to providing an effective role for State and local governments in the development and implementation of our nuclear waste management program. I am therefore taking the following actions:

- o By Executive Order, I am establishing a State Planning Council which will strengthen our intergovernmental relationships and help fulfill our joint responsibility to protect public health and safety in radioactive waste matters. I have asked Governor Riley of South Carolina to serve as Chairman of the Council. The Council will have a total of 19 members: 15 who are Governors or other elected officials, and 4 from the Executive departments and agencies. It will advise the Executive Branch and work with the Congress to address radioactive waste management issues, such as planning and siting, construction, and operation of facilities. I will submit legislation during this session to make the Council permanent.
- o In the past, States have not played an adequate part in the waste management planning process -- for example, in the evaluation and location of potential waste disposal sites. The States need better access to information and expanded opportunity to guide waste management planning. Our relationship with the States will be based on the principle of consultation and concurrence in the siting of high level waste repositories. Under the framework of consultation and concurrence, a host State will have a continuing role in Federal decisionmaking on the siting, design and construction of a high level waste repository. State consultation and concurrence, however, will lead to an acceptable solution to our waste disposal problem only if all the States participate as partners in the program I am putting forth. The safe disposal of radioactive waste, defense and commercial, is a national, not just a Federal, responsibility.
- o I am directing the Secretary of Energy to provide financial and technical assistance to States and other jurisdictions to facilitate the full participation of State and local government in review and licensing proceedings.

Second, for disposal of high level radioactive waste, I am adopting an interim planning strategy focused on the use of mined geologic repositories capable of accepting both waste from reprocessing and unprocessed commercial spent fuel. An interim strategy is needed since final decisions on many steps which need to be taken should be preceded by a full environmental review under the National Environmental Policy Act. In its search for suitable sites for high level waste repositories, the Department of Energy has mounted an expanded and diversified program of geologic investigations that recognizes the importance of the interaction among geologic setting, repository host rock, waste form and other engineered barriers on a site-specific basis. Immediate attention will focus on research and development, and on locating and characterizing a number of potential repository sites in a variety of different geologic environments with diverse rock types. When four to five sites have been evaluated and found potentially suitable, one or more will be selected for further development as a licensed full-scale repository.

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It is important to stress the following two points: First, because the suitability of a geologic disposal site can be verified only through detailed and time-consuming site specific evaluations, actual sites and their geologic environments must be carefully examined. Second, the development of a repository will proceed in a careful step-by-step manner. Experience and information gained at each phase will be reviewed and evaluated to determine if there is sufficient knowledge to proceed with the next stage of development. We should be ready to select the site for the first full-scale repository by about 1985 and have it operational by the mid-1990's. For reasons of economy, the first and subsequent repositories should accept both defense and commercial wastes.

Consistent with my decision to expand and diversify the Department of Energy's program of geologic investigation before selecting a specific site for repository development, I have decided that the Waste Isolation Pilot Plant project should be cancelled. This project is currently authorized for the unlicensed disposal of transuranic waste from our National defense program, and for research and development using high level defense waste. This project is inconsistent with my policy that all repositories for highly radioactive waste be licensed, and that they accept both defense and commercial wastes.

The site near Carlsbad, New Mexico, which was being considered for this project, will continue to be evaluated along with other sites in other parts of the country. If qualified, it will be reserved as one of several candidate sites for possible use as a licensed repository for defense and commercial high level wastes. My fiscal year 1981 budget contains funds in the commercial nuclear waste program for protection and continued investigation of the Carlsbad site. Finally, it is important that we take the time to compare the New Mexico site with other sites now under evaluation for the first waste repository.

Over the next five years, the Department of Energy will carry out an aggressive program of scientific and technical investigations to support waste solidification, packaging and repository design and construction including several experimental, retrievable emplacements in test facilities. This supporting research and development program will call upon the knowledge and experience of the Nation's very best people in science, engineering and other fields of learning and ~~will~~ include participation of universities, industry, and ~~the~~ government departments, agencies, and national laboratories.

Third, during the interim period before a disposal facility is available, waste must and will continue to be cared for safely. Management of defense waste is a Federal responsibility; the Department of Energy will ensure close and meticulous control over defense waste facilities which are vital to our national security. I am committed to maintaining safe interim storage of these wastes as long as necessary and to making adequate funding available for that purpose. We will also proceed with research and development at the various defense sites that will lead the processing, packaging, and ultimate transfer to a permanent repository of the high level and transuranic wastes from defense programs.

In contrast, storage of commercial spent fuel is primarily a responsibility of the utilities. I want to stress that interim spent fuel storage capacity is not an alternative to permanent disposal. However, adequate storage is necessary

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until repositories are available. I urge the utility industry to continue to take all actions necessary to store spent fuel in a manner that will protect the public and ensure efficient and safe operation of power reactors. However, a limited amount of government storage capacity would provide flexibility to our national waste disposal program and an alternative for those utilities which are unable to expand their storage capabilities.

I reiterate the need for early enactment of my proposed spent nuclear fuel legislation. This proposal would authorize the Department of Energy to: (1) design, acquire or construct, and operate one or more away-from-reactor storage facilities, and (2) accept for storage, until permanent disposal facilities are available, domestic spent fuel, and a limited amount of foreign spent fuel in cases when such action would further our non-proliferation policy objectives. All costs of storage, including the cost of locating, constructing and operating permanent geologic repositories, will be recovered through fees paid by utilities and other users of the services and will ultimately be borne by those who benefit from the activities generating the wastes.

Fourth, I have directed the Department of Energy to work jointly with states, other government agencies, industry and other organizations, and the public, in developing national plans to establish regional disposal sites for commercial low level waste. We must work together to resolve the serious near-term problem of low level waste disposal. While this task is not inherently difficult from the standpoint of safety, it requires better planning and coordination. I endorse the actions being taken by the Nation's governors to tackle this problem and direct the Secretary of Energy to work with them in support of their effort.

Fifth, the Federal programs for regulating radioactive waste storage, transportation and disposal are a crucial component of our efforts to ensure the health and safety of Americans. Although the existing authorities and structures are basically sound, improvements must be made in several areas. The current authority of the Nuclear Regulatory Commission to license the disposal of high level waste and low level waste in commercial facilities should be extended to include spent fuel storage, and disposal of transuranic waste and non-defense low level waste in any new government facilities. I am directing the Environmental Protection Agency to consult with the Nuclear Regulatory Commission to resolve issues of overlapping jurisdiction and phasing of regulatory actions. They should also seek ways to speed up the promulgation of their safety regulations. I am also directing the Department of Transportation and the Environmental Protection Agency to improve both the efficiency of their regulatory activities and their relationships with other Federal agencies and state and local governments.

Sixth, it is essential that all aspects of the waste management program be conducted with the fullest possible disclosure to and participation by the public and the technical community. I am directing the departments and agencies to develop and improve mechanisms to ensure such participation and public involvement consistent with the need to protect national security information. The waste management program will be carried out in full compliance with the National Environmental Policy Act.

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Seventh, because nuclear waste management is a problem shared by many other countries and decisions on waste management alternatives have nuclear proliferation implications, I will continue to encourage and support bilateral and multilateral efforts which advance both our technical capabilities and our understanding of spent fuel and waste management options, which are consistent with our non-proliferation policy.

In its role as lead agency for the management and disposal of radioactive wastes and with cooperation of the other relevant Federal agencies, the Department of Energy is preparing a detailed National Plan for Nuclear Waste Management to implement these policy guidelines and the other recommendations of the IRG. This Plan will provide a clear road map for all parties and will give the public an opportunity to review the entirety of our program. It will include specific program goals and milestones for all aspects of nuclear waste management. A draft of the comprehensive National Plan will be distributed by the Secretary of Energy later this year for public and Congressional review. The State Planning Council will be directly involved in the development of this plan.

The Nuclear Regulatory Commission now has underway an important proceeding to provide the Nation with its judgment on whether or not it has confidence that radioactive wastes produced by nuclear power reactors can and will be disposed of safely. I urge that the Nuclear Regulatory Commission do so in a thorough and timely manner and that it provide a full opportunity for public, technical and government agency participation.

Over the past two years as I have reviewed various aspects of the radioactive waste problem, the complexities and difficulties of the issues have become evident -- both from a technical and, more importantly, from an institutional and political perspective. However, based on the technical conclusions reached by the IRG, I am persuaded that the capability now exists to characterize and evaluate a number of geologic environments for use as repositories built with conventional mining technology. We have already made substantial progress and changes in our programs. With this comprehensive policy and its implementation through the FY 1981 budget and other actions, we will complete the task of reorienting our efforts in the right direction. Many citizens know and all must understand that this problem will be with us for many years. We must proceed steadily and with determination to resolve the remaining technical issues while ensuring full public participation and maintaining the full cooperation of all levels of government. We will act surely and without delay, but we will not compromise our technical or scientific standards out of haste. I look forward to working with the Congress and the states to implement this policy and build public confidence in the ability of the government to do what is required in this area to protect the health and safety of our citizens.

JIMMY CARTER

THE WHITE HOUSE,

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FEBRUARY 12, 1980

Office of the White House Press Secretary

THE WHITE HOUSE

FACT SHEET  
THE PRESIDENT'S PROGRAM ON RADIOACTIVE WASTE MANAGEMENT

HIGHLIGHTS

In a Message sent to Congress today, the President outlined a comprehensive national radioactive waste management program. This program is based on the report of the Interagency Review Group on Nuclear Waste Management published in March, 1979.

The paramount objective in managing nuclear wastes is to protect the health and safety of all Americans, both now and in the future. The disposal of nuclear waste should not and will not be deferred to future generations.

The key elements of the President's program are:

- o All levels of government share the responsibility for safe management and disposal of nuclear wastes.
  - In order to provide a more effective role for State and local governments the President has created a State Planning Council of elected State, local, and tribal officials and heads of cabinet departments and other federal agencies. Governor Richard Riley of South Carolina will serve as Chairman. State Representative Paul Hess of Kansas will serve as Vice Chairman. The Council will advise the Executive Branch and work with Congress on key radioactive waste management and disposal issues, especially related institutional decisions.
  - The basis of the relationship between States and the Federal government in the siting of high level waste repositories will be the principle of consultation and concurrence.
- o Pending reviews required by the National Environmental Policy Act, an interim planning strategy for disposal of high level and transuranic waste has been adopted that relies on mined geologic repositories.
  - The program directed toward siting and opening repositories will be technically conservative, include expanded and technically diversified research and development and site investigations, and move carefully, in a step by step manner, toward site selection and operation of the first high level waste repository.

- Immediate attention will focus on locating and characterizing a number of potential repository sites in a variety of different geologic environments with diverse rock types. This effort will be supported by a comprehensive research and development program. When four to five sites have been evaluated and found potentially suitable for a repository, one or more will be selected for further development as a licensed, full-scale repository. The site for the first full-scale repository should be selected by about 1985 and it should be operational by the mid-1990's.
- The Waste Isolation Pilot Plant (WIPP) project will be cancelled since it is unlicensed and cannot accept commercial wastes. The site of the proposed project at Carlsbad, New Mexico will be investigated further and if found qualified will be reserved for consideration along with other candidate sites in different geologic environments as a licensed repository for high level wastes.
- o The safe interim storage of commercial spent fuel from nuclear power reactors will continue to be the responsibility of the utilities operating these plants until a permanent geologic repository capability exists. However, the Administration will continue to press for legislation to build or acquire limited spent fuel storage capacity at one or more away-from-reactor (AFR) facilities for those utilities unable to expand their storage capabilities and for limited amounts of foreign spent fuel when the objectives of the U.S. nonproliferation policy would be furthered.
- o The Department of Energy will work with the States in their efforts to establish a reliable commercial low level radioactive waste disposal system.
- o The Administration will submit legislation to extend Nuclear Regulatory Commission licensing authority to cover all DOE facilities for transuranic waste disposal and any new DOE sites for disposal of commercial low level waste. Under existing law, NRC has licensing authority over DOE facilities for disposal of high level radioactive wastes.
- o Specific actions will be taken to improve and expedite regulatory actions by the Environmental Protection Agency and the Nuclear Regulatory Commission.
- o The Nuclear Regulatory Commission is determining whether or not it has confidence that radioactive wastes can be disposed of safely. The President is urging the NRC to conduct its proceeding in a timely manner and to provide full opportunity for public, technical and government agency participation.
- o The President's Fiscal Year 1981 budget for the Department of Energy requests \$670 million in budget authority for nuclear waste programs. Other Department and agency requests total \$49 million.

A brief description of the various types of nuclear waste and the quantities buried, stored and now being produced will be found in the background section of this Fact Sheet.

#### OBJECTIVES

The primary objective for waste management planning and implementation will be that existing and future radioactive waste from military and civilian activities (including commercial spent fuel if and when it is to be discarded) should be isolated from the biosphere and pose no significant threat to public health and safety.

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The following principles will guide our program:

- o The technical program must meet all of the relevant radiological protection criteria, as well as any other applicable regulatory requirements. Although zero release of radionuclides or zero risk from any such release cannot be assured, such risks should fall within pre-established standards and, beyond that, be reduced to the lowest level practicable.
- o The responsibility for establishing a nuclear waste management program will not be deferred to future generations.
- o The nuclear waste management program should explicitly include consideration of all aspects of the waste management system including safety, environmental, organizational, and institutional factors.
- o The basic elements of the program should be independent of the size of the nuclear industry and of the resolution of specific fuel-cycle or reactor-design issues of the nuclear power industry.

#### ELEMENTS OF THE PRESIDENT'S PROGRAM

##### 1. Relations with State and Local Governments

- o The President has created, by Executive Order, a State Planning Council to advise the Executive Branch and work with the Congress in making and implementing decisions on waste management and disposal.

The council will be chaired by Governor Richard Riley. There will be 14 members who are designated by the President as follows: eight governors; five state and local government officials other than governors; and, a tribal government representative. The Secretaries of Energy, Interior, and Transportation and the Administrator of the Environmental Protection Agency are also members.

The Council will provide advice and recommendations to the President and the Secretary of Energy on nuclear waste management including interim storage of spent fuel. In particular, the Council will:

- (a) Recommend procedural mechanisms for reviewing specific nuclear waste management plans and programs, including the consultation and concurrence process designed to achieve Federal, State, and local agreement which accommodates the interests of all the parties.
- (b) Work on development of detailed nuclear waste management plans and provide recommendations to ensure that they adequately address the needs of affected States and local areas.
- (c) Advise on all aspects of siting and licensing of facilities for storage and disposal of nuclear wastes.
- (d) Advise on proposed Federal regulations, standards, and criteria related to nuclear waste management programs.
- (e) Identify and make recommendations on other matters related to the transportation, storage, and disposal of nuclear wastes that the Council believes are important.

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- o The principle of consultation and concurrence will apply in the siting of high level waste repositories. Under the framework of consultation and concurrence, a host State will have a continuing role with regard to the Federal government's actions on the siting, design and construction of a high level waste repository.

## 2. Interim Planning Strategy for High Level and Transuranic Waste Disposal

Pending reviews required by the National Environmental Policy Act and in order to provide interim guidance to the radioactive waste management program for its near-term actions and following the consideration of alternative technical approaches, the President has adopted a comprehensive interim planning strategy. The main components of the strategy are:

- o Mined geologic repositories will be the primary focus of work for safe disposal of high level radioactive waste, including unprocessed commercial spent fuel.
- o The repository program will proceed in a technically conservative step-by-step manner, from the needed technical evaluations, through site selection, independent licensing review and ultimately to opening and operating a repository.
- o Immediate attention will focus on (1) research and development, both in laboratories and at sites where underground workings can be used to study rock and waste form properties and interactions, and (2) locating and characterizing potential repository sites in different geologic environments and relying on diverse rock types.
- o Once four or five sites in a variety of geologic environments have been evaluated and found potentially suitable for a repository, one or more will be selected for further intensive study or characterization and development as a licensed repository.
- o Ultimately, several high level waste repositories will be opened, sited regionally insofar as technical considerations related to public health and safety permit.

Prior to proceeding with the first full-scale repository, an intermediate step might be taken by disposal of a relatively small quantity of high level waste in a licensed geologic test facility in order to gain experience applicable to subsequent actions with respect to full-scale repositories. Such a facility is not an essential component of a program leading to a full-scale, high level waste repository. It would provide an option, however, to test technical readiness and to exercise elements of the licensing process after an adequate site characterization program has been completed.

Following completion of environmental reviews required by the National Environmental Policy Act, the President will reexamine this interim strategy and decide whether any changes need to be made.

Following this strategy, the choice of site for the first full-scale repository should be made about 1985 and operations should begin by the mid-1990's. These dates reflect current estimates of the minimum time required to do the work necessary, including time for licensing and to permit full State and local government and public participation in decisionmaking.

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The President's interim waste disposal strategy offers three important advantages:

- (1) it provides maximum redundancy and conservatism so that no single or small number of setbacks would undermine the entire program, or even cause great delay;
- (2) sites can be selected by comparing several locations among themselves thus providing greater confidence that the wastes will be disposed of safely;
- (3) time will be available to put in place a good scientific program, to build procedures for licensing, public review and interaction, and to establish decisionmaking processes with State and local governments.

The Department of Energy is taking the following actions to implement this strategy:

- o Regional, area and site investigations are being planned on a national basis to identify suitable high level waste repository sites. A variety of geologic environments and potential host rock types are being examined and this program will be expanded to ensure that the necessary sites will be available from which to select the first repository site.
- o Research and development in laboratories and at test sites has been increased. Greater attention is now being given to a variety of possible waste forms, including spent fuel, to waste packaging and to waste-rock interactions under repository conditions.
- o Three test facilities are planned: a granite facility in Nevada, a basalt facility in Washington State, and a salt facility at a site yet to be chosen.

The President has decided that the Waste Isolation Pilot Plant (WIPP) project as currently authorized will be cancelled. This project, for which construction has not yet commenced, is currently authorized for the unlicensed disposal of transuranic waste from our National defense program and for R&D using high level defense waste. Reasons for the cancellation are:

- o Proceeding now on the basis of a single site is inconsistent with the strategy to compare sites with differing geologic characteristics prior to selection.
- o An unlicensed facility is contrary to the President's policy.
- o A facility for transuranic waste alone would provide no useful experience relevant either to licensing or to disposal of high level waste.
- o It would also be an inefficient use of funds.

The site near Carlsbad, New Mexico which was being considered for this project will continue to be evaluated and, if qualified, will be reserved, along with other sites, for possible future use as a licensed repository for high level wastes. The DOE's FY1981 budget contains funds in the commercial nuclear waste program for protection of the Carlsbad site and continued characterization activities to determine suitability as a high level waste repository.

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Although mined geologic repositories will be the focal point of the comprehensive national radioactive waste management program the DOE will continue to support a limited program directed toward other disposal alternatives. These include disposition of high level wastes in very deep boreholes and emplacement in ocean sediments in regions where the ocean floor is known to be geologically stable. These alternatives are considered to be longer range options to the mined geologic repository strategy.

### 3. Interim Storage of Defense and Commercial High Level Wastes.

The following actions are being taken to ensure safe and adequate care of defense and commercial nuclear waste in the interim period before a disposal facility is available:

- o Adequate technical and financial resources will be made available to maintain defense wastes safely.
- o Research and development at various defense facilities will proceed leading to plans for processing, packaging, and ultimate transfer to permanent repositories of transuranic and high level wastes from defense programs.
- o Although spent fuel storage capacity is not an alternative to a permanent disposal capability, adequate storage must be provided until repositories are available. Primary responsibility for safe storage of commercial spent fuel lies with the utility industry. However, a limited amount of government storage capacity for commercial spent fuel would be desirable to provide flexibility to the national waste disposal program and an alternative for those utilities unable to expand their storage capabilities. The President continues to seek early enactment of legislation that would authorize the Department of Energy to: (1) design, acquire or construct, and operate one or more away-from-reactor storage facilities, and (2) accept for storage, until permanent disposal facilities are available, domestic spent fuel, and a limited amount of foreign spent fuel in cases when such action would further the objectives of our nonproliferation policy. Cost of constructing and operating away-from-reactor storage facilities will be borne by the users.

The Administration will continue to pursue both international and regional cooperative efforts to study nuclear fuel management options consistent with our nuclear nonproliferation policy.

### 4. Low Level Waste.

Three commercial burial grounds -- South Carolina, Washington State and Nevada -- are currently available to receive low level wastes originating in non-governmental industrial, medical and commercial activities. These have been operating intermittently because of inadequacies in waste packaging and shipment. Pressures have been mounting to find additional disposal sites to provide needed capacity for an ever-increasing inventory of commercial low level wastes.

The Department of Energy will work with the States to assist in their activities to establish regional disposal sites for low level wastes from the Nation's hospitals, research institutions, industry, and utilities. Until such time as additional disposal facilities can be sited and licensed, DOE and NRC will assist States in setting up interim storage facilities within the States. The State Planning Council will give low level waste management early, priority attention.

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Other actions being taken in the area of low level waste include:

- o DOE will review by 1981 alternative low level waste disposal techniques and determine whether any changes should be adopted in the future.
- o DOE will accelerate R&D on improved methods of disposing of low level wastes.
- o DOE will continue the existing land burial technology program presently designed to upgrade all DOE low level waste disposal operations by 1988.
- o DOE will take action to ensure that adequate attention is given to the hydrologic characteristics of proposed locations for the future siting of low level waste disposal facilities.

#### 5. Uranium Mill Tailings.

Past control of mill sites has been poor, with little or no attention to the problem of proper disposal of tailings upon completion of milling operations. The Uranium Mill Tailings Radiation Control Act of 1978 was passed to change this situation. EPA is directed to issue standards and criteria for disposal of mill tailings. NRC has licensing authority over active sites, and DOE is authorized to take remedial action at inactive sites.

The NRC and EPA are now developing standards, criteria, and regulations defining acceptable levels of radon emissions, siting, impacts on groundwater. The final Generic Environmental Impact Statement, (NUREG 0511, Draft issued 4/79) on uranium milling by NRC is nearing completion.

DOE, in cooperation with State governments, is now taking remedial action on abandoned tailings piles. DOE will continue to develop improved means of disposing of or stabilizing mill tailings over the long term.

#### 6. Decontamination and Decommissioning.

As a general rule, unrestricted use of land will be the ultimate objective of D&D and institutional controls should not be relied upon after some period of time to provide long-term protection of people and the environment. However, because certain existing sites and/or facilities cannot be decontaminated at a reasonable cost, or perhaps at any cost, long-term institutional control may be required in these exceptional cases. These will require development of site-specific programs by NRC and DOE.

The following actions will be taken:

- o DOE will prepare a nationwide plan for the decontamination and decommissioning of surplus facilities owned by DOE and other government agencies.
- o DOE will work on designs for the construction of new facilities which will facilitate their eventual decommissioning.
- o For new Federal facilities, decontamination and decommissioning specifications will be included in the initial design, and institutional arrangements will be made to ensure sufficient funding. The funding for D&D of government-owned facilities and sites will be through Federal appropriations. Responsibility and methods for financing D&D of licensed facilities will be determined by the regulatory process.

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## 7. Transportation.

Safe and reliable transportation of nuclear wastes is an essential component of the total waste management system. While complete assurance that release of radioactive material will not occur during normal operation or in serious accidents is impossible, it has been demonstrated that it is unlikely that a significant release can occur under most credible accident environments.

To improve the existing transportation system and enhance public confidence in it, the following actions are being taken:

- o DOE is pursuing a program for testing and evaluating the performance of current and future generation waste packaging systems.
- o The Department of Transportation is being directed to increase its management attention to nuclear waste matters and is completing its rulemaking on the role of Federal and local government bodies in routing of nuclear waste transportation along highways.
- o DOT and NRC are working closely with the States to strengthen the nation's overall capability to respond to any transportation emergencies involving shipment of radioactive wastes.
- o DOT will develop a data bank on shipment statistics and accident experience to be operational by 1982.

## 8. Financing.

The principle that will be applied to financing the cost of nuclear waste management and disposal is that the cost should be paid by the generator of the waste and borne by the beneficiary of the activity generating the waste. Utilities will pay the cost of storage and disposal of waste from power plant operations and pass these costs on to their customers. The government will pay the cost of storage and disposal of wastes from defense and government R&D activities and finance it from tax revenues.

## 9. Regulatory Actions.

The Federal programs for regulating radioactive waste storage, transportation, and disposal are a crucial component of our efforts to ensure the health and safety. The following improvements are needed in the regulation of radioactive waste disposal:

- o The current authority of the Nuclear Regulatory Commission to license the disposal of high level waste and low level waste in commercial facilities should be extended to also include the storage of spent fuel, as well as disposal of transuranic waste and non-defense low level waste in any new government facilities that might be built.
- o The Environmental Protection Agency is responsible for creating general criteria and numerical standards applicable to nuclear waste management activities. The President has directed EPA to accelerate its schedule for the preparation of these criteria and standards and to prepare a position paper that will indicate EPA's approach to setting standards and address the relationship between EPA's standards and actions taken by NRC and DOE.
- o EPA and NRC will complete a Memorandum of Understanding dealing with coordinating methodologies and procedures.

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- o The Department of Transportation is responsible for regulating the transport of radioactive wastes, in part sharing that responsibility with NRC. The coordination between the two agencies is provided by an existing Memorandum of Understanding between them. DOT is completing its rulemaking on the role of Federal and local government bodies in routing of nuclear waste transportation along highways.
- o The Nuclear Regulatory Commission is now commencing a formal proceeding to determine whether or not it has confidence that radioactive wastes produced by nuclear power reactors can and will be disposed of safely. The President has urged the NRC to conduct this proceeding in a timely and thorough manner and to provide full opportunity for public, technical and government agency participation.

#### 10. Legislation.

Legislation addressing the following areas will be submitted to Congress to implement the President's program.

- o State Planning Council. To provide a permanent basis for the State Planning Council, which has been created by Executive Order.
- o Licensing Extension. To implement the extension of NRC licensing authority to all new transuranic and new non-defense low level waste disposal facilities and any other facilities decided upon following the review of NRC's licensing study (NUREG 0527, September 1979).
- o Low Level Waste. To assist the States in managing commercial low-level waste. The legislation will include authority for the States to enter into regional organizations or compacts for operation of the sites.
- o Decommissioned Facilities Surveillance. To establish institutional responsibilities for long-term surveillance of formerly utilized Federal facilities which have been decommissioned and sold or otherwise released to unrestricted use.

The President will continue to press for authority to construct one or more away-from-reactor interim storage facilities for commercial spent fuel. This bill is already under consideration by the Congress. This legislation, or additional legislation, will implement the principle that costs of nuclear wastes disposal will be paid by the generator and borne by the beneficiary of the activity generating the waste.

#### 11. Implementation and Management Structure.

Many Federal departments and agencies are necessarily involved in one or more aspects of nuclear waste management. In addition, the President's policy calls for full involvement of State, regional and local governments and organizations in program planning and execution. The President has designated the Secretary of Energy to be responsible for overall program integration and to establish necessary coordination mechanisms. The Secretary of Energy will assume the lead role for: (1) coordinating all Federal nonregulatory aspects of radioactive waste management; (2) working out effective relationships with regulatory bodies such as the Environmental Protection Agency and the Nuclear Regulatory Commission; and (3) developing strong and effective ties between the Federal Government and the States on all aspects of radioactive waste storage and disposal.

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Within the Department of Energy, day-to-day activities are under the direction of an Assistant Secretary for Nuclear Energy (ASNE) who reports to the Under Secretary and the Secretary. Under the ASNE the Office of Nuclear Waste Management (ONWM) is responsible for executing policy and managing all aspects of the nuclear waste management program.

Regulatory responsibilities are by law assigned to the Environmental Protection Agency, the Nuclear Regulatory Commission and the Department of Transportation. The Department of Interior has authority over Federal lands that might be used for waste storage or disposal and has extensive geoscience expertise in the U.S. Geological Survey. An Interagency Working Committee has been established by the Department of Energy to coordinate and integrate associated activities of DOE, DOI, EPA, NRC, DOT, and State. The President has also instructed DOE and DOI to prepare a Memorandum of Understanding between them delineating areas of cooperation and mutual responsibility and creating procedures to ensure they work jointly and reinforce each other's activities.

The primary planning mechanism will be a comprehensive National Plan for Nuclear Waste Management. The President has directed that this be produced by 1981 and be updated biannually thereafter. It is to be submitted for public review in draft and in revised form to the public and the Congress. The plan will include:

- o summaries of the status of knowledge relevant to disposal of high level, transuranic, and low level radioactive wastes and uranium mill tailings;
- o multi-year program plans for (1) interim management of high level radioactive waste and spent fuel; (2) site qualification for geologic repositories, and (3) R&D in the earth sciences and waste form and containers for high level and transuranic waste disposal;
- o plans for low level wastes;
- o a plan for decontamination and decommissioning of surplus government facilities;
- o a plan for remedial action at inactive mill tailings sites;
- o an integrated NEPA plan, covering the NEPA activities of all relevant agencies;
- o updated cost estimates for all proposed activities;
- o proposals to improve intergovernmental decisionmaking and resolution of environmental, economic and social issues associated with radioactive waste storage, transportation, and disposal;
- o specific program goals and milestones for developing necessary regulations.

The President has issued detailed instructions to all Federal agencies to ensure that his program will be implemented.

## 12. Public Participation.

It is essential that all aspects of the waste management program be conducted with the full disclosure to and participation by the public and the technical community. The President has directed the departments and agencies to develop and improve mechanisms to ensure such participation and public involvement consistent with any need to protect national security information and to comply fully with the National Environmental Policy Act. This includes providing technical and financial assistance to permit informed public input to programs and decisions and to support nongovernment efforts to increase social and technical understanding and agreement on nuclear waste issues. Formal mechanisms for receiving the best scientific and technical advice available and regular input from the interested public will also be strengthened.

### 13. International Cooperation.

Because nuclear waste management is a problem shared by many other countries and because selection of waste management alternatives has nuclear proliferation implications, the President will continue to encourage and support cooperative bilateral and multilateral efforts which advance both our technical capabilities and our understanding of spent fuel and waste management and which are consistent with U.S. nonproliferation policy.

### 14. Funding

Current funding levels (\$ millions) for the respective agencies and programs are as follows:

	1979		1980		1981	
	BA	BO	BA	BO	BA	BO
Department of Energy						
Defense Nuclear Waste						
D&O	1	1	2	2	6	6
Interim Waste Management	147	187	163	213	219	222
Long-Term Waste Mgmt.	69	57	83	79	116	128
Terminal Storage <sup>1/</sup>	36	49	28	26	0	11
Transportation	3	2	5	4	7	7
Program Direction	1	1	2	2	2	2
Subtotal	257	297	283	326	350	376
Commercial Nuclear Waste						
Commercial Waste Management	189	159	184	187	244	240
Remedial Actions	22	20	35	29	53	54
Program Direction	1	1	1	1	2	2
Subtotal	212	180	220	217	299	296
Spent Fuel						
Domestic	7	3	14	17	16	17
International	3	2	3	2	4	4
Program Direction	1	1	1	1	1	1
Subtotal	11	6	18	20	21	22
Total	480	483	521	564	570	694
Other Federal Nuclear Waste Programs						
Nuclear Regulatory Commission	20	18	26	23	38	34
Dept. of Energy (Environ.) <sup>2/</sup>	3	3	3	3	4	4
Dept. of Interior	6	6	6	6	6	6
Dept. of Transportation <sup>3/</sup>	1	1	1	1	1	1
Subtotal	30	28	36	33	49	45
GRAND TOTAL	510	511	557	597	719	739

<sup>1/</sup> Includes all expenditures related to the Waste Isolation Pilot Plant (WIPP) proposal.

<sup>2/</sup> This supports the remedial actions work conducted in the DOE Commercial Nuclear Waste Program.

<sup>3/</sup> The funding level for all years is under \$1 million.

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## ADDITIONAL BACKGROUND INFORMATION

### 1. The Interagency Review Group Process.

As part of his initial National Energy Plan, the President ordered a review of the DOE nuclear waste management program. A Department of Energy task force carried out the review and published a "Draft Report of Task Force for Review of Nuclear Waste Management, February 1978."

With that report as a starting point, the President established the Interagency Review Group on Radioactive Waste Management (IRG) on March 13, 1978, to formulate recommendations leading to the establishment of a National policy for managing the Nation's nuclear waste with support programs.

The IRG was chaired by the Secretary of Energy and composed of representatives from departments of State, Interior, Transportation and Commerce, National Aeronautics and Space Administration, Arms Control and Disarmament Agency, Environmental Protection Agency, Office of Management and Budget, Council on Environmental Quality, Office of Science and Technology, Policy Staff, Domestic Policy Staff, and National Security Council. The Nuclear Regulatory Commission was represented by a nonvoting member.

The IRG was established to obtain a broad range of views from Congress, State and local governments, Indian Nations, industry, the scientific and technical community, public interest and environmental groups and the general public. A draft report of the IRG was published for public review and comment in October 1978 and over 15,000 copies were distributed. The draft report was reviewed by representatives of various special interests and three public hearings were conducted to elicit public comments. Over 1,000 comments were received from State governments, industry, academic groups, and the general public. These comments were summarized in the final IRG report, which was revised based on the comments. The final report was issued in March 1979 and formed the basis for the recommendations made to the President and ultimately the basis of the President's policy statement.<sup>1</sup>

### 2. Definition of Types of Wastes.

Nuclear wastes are produced in many different forms by a variety of activities including research investigations, medical diagnostics and treatment, mining and processing of uranium ore, defense-related nuclear activities and operation of commercial nuclear power plants. These wastes exist as gases, liquids and solids. The potential hazard of these wastes results from the fact that exposure to and/or uptake of the material can cause biological damage.

The major types of nuclear wastes are:

- o High Level Wastes - These wastes are either fuel assemblies that are discarded after having served their useful life in a nuclear reactor (spent fuel) or the portion of the wastes generated in the reprocessing that contain virtually all of the fission products and most of the actinides not separated out during reprocessing.<sup>2</sup> These wastes are being considered for disposal in geologic repositories or by other technical options designed to provide long-term isolation of the wastes from the biosphere.

1 The final report "Report to the President by the Interagency Review Group on Nuclear Waste Management", March 1979 (TID-29442), and the technical report "Subgroup Report on Alternative Technology Strategies for the Isolation of Nuclear Waste", October 1979 (TID 28818) are available from the National Technical Information Service, U.S. Department of Commerce.

2 It is unclear whether the United States will reprocess commercial spent fuel. High level waste disposal facilities are therefore being designed to accept both spent fuel and waste from reprocessing.



- o Transuranic Wastes - These wastes are produced primarily from the reprocessing of defense spent reactor fuels, the fabrication of plutonium to produce nuclear weapons and, if it should occur, plutonium fuel fabrication for use in nuclear power reactors. Transuranic wastes contain low levels of radioactivity but varying amounts of long-lived elements above uranium in the Periodic Table of Elements, mainly plutonium. This waste is currently defined as material containing more than 10 nano Curies of transuranic activity per gram of material.
- o Low Level Wastes - These wastes contain less than ten nano Curies of transuranic contaminants per gram of material, or they may be free of transuranic contaminants. Although these wastes require little or no shielding, they have low, but potentially hazardous, concentration of quantities of radionuclides and do require management. Low level wastes are generated in almost all activities involving radioactive materials and are presently being disposed of by shallow land burial.
- o Uranium Mine and Mill Tailings - These wastes are the residues from uranium mining and milling operations. They are hazardous because they contain low concentrations of radioactive materials which, although naturally occurring, contain long-lived radionuclides. The tailings, with a consistency similar to sand, are generated in large volumes--about 10 to 15 million tons annually--and are presently stored in waste piles at the site of mining and milling operations. A program is underway to either immobilize or bury these wastes to prevent them from being dispersed by wind or water erosion.
- o Decontamination and Decommissioning Wastes - As defense and civilian reactors and other nuclear facilities reach the end of their productive lifetimes, parts of them will have to be handled as either high or low level wastes, and disposed of accordingly. Decontamination and decommissioning activities will generate significant quantities of wastes in the future.
- o Gaseous Effluents - These wastes are produced in many defense and commercial nuclear activities, such as reactors, fuel fabrication facilities, uranium enrichment plants and weapons manufacturing facilities. They are released into the biosphere in a controlled manner, after passing through successive stages of filtration, and mixed with the atmosphere where they are diluted and dispersed.

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## 3. U.S. Nuclear Waste Inventory and Forecast.

	Current (April 1979)		Annual Addition		Year 2000	
	DOE	Commercial	DOE	Commercial	DOE	Commercial
Disposed of (By volume--thousand cubic meters):						
Low Level Waste	1,470	515 <sup>1/</sup>	53	100	2500-6800	2800-7800 <sup>3/</sup>
Transuranic Waste	256	2 <sup>/</sup>	0	0	uncertain	2 <sup>/</sup>
Stored (By volume--thousand cubic meters):						
High Level Waste (Including spent fuel)	283	4.3	3	.6	320	40
Transuranic Waste	55	0	6	.3	250-3350 <sup>3/</sup>	6
Uranium Mill Tailings:						
Inactive sites (25) <sup>4/</sup>	25	0	0	0	25	6
Active sites	0	125	0	15	0	425
Stored (By radioactivity level--curies)						
High Level Waste (Including spent fuel)	10 <sup>9.5/</sup>	4x10 <sup>7</sup>	5 <sup>/</sup>	~5x10 <sup>8.5/</sup>	10 <sup>9</sup>	~10 <sup>10.5/</sup>
Transuranic Waste	Low	N/A	Low	N/A	Low	N/A
Uranium Mill Tailings:						
Inactive sites	15,000	0	0	0	15,000	0
Active sites	0	~56,000	0	6,300	0	~191,000

<sup>1/</sup> As of 1/1/78.<sup>2/</sup> Volume not available. Contains ~125 kg TRU material at commercial disposal sites.<sup>3/</sup> Range results from possible options on D&D of surplus facilities with waste quantity dependent upon mode of D&D for each facility.<sup>4/</sup> Millions of Tons-Stabilization programs for inactive sites required by Uranium Mill Tailings Act of 1978.<sup>5/</sup> Equilibrium exists. Annual additions equivalent to annual decay rate of  $2 \times 10^7$  Ci.<sup>6/</sup> Primarily spent fuel. Activity varies with age of material. Assumes average age of 10 years for additions and cumulative inventory. Activity @ 10 years =  $1.05 \times 10^7$  Ci/MTHM.

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#### 4. Summary of Technical Findings of the IRG.

- o Present scientific and technological knowledge is adequate to identify potential repository sites for further investigation. No scientific or technical reason is known that would prevent identifying a site that is suitable for a repository provided that the systems view is utilized rigorously to evaluate the suitability of sites and designs, and in minimizing the influence of future human activities.
- o A systems approach should be used to select the geologic environment, repository site, and waste form. A systems approach recognizes that, over thousands of years, the fate of radionuclides in a repository will be determined by the natural geologic environment, by the physical and chemical properties of the medium chosen for waste emplacement, by the waste form itself and other engineered barriers.
- o The feasibility of safely disposing of high level waste in mined repositories can only be assessed on the basis of specific investigations at and determinations of suitability of particular sites.
- o Some uncertainty about repository performance will always exist. Thus, in addition to technical evaluation, a societal judgment that considers the level of risk and the associated uncertainty will be necessary.
- o Detailed studies of specific, potential repository sites in different geologic environments should begin immediately. Generic studies of geologic media or risk assessment analyses of hypothetical sites, while useful for site selection, are not sufficient for some aspects of repository design or for site suitability determination. Although most is known about the engineering aspects of a repository in salt, on purely technical grounds no particular geologic environment is an obvious preferred choice at this time.
- o The actinide activity in transuranic wastes and high level wastes suggest that both waste types present problems of comparable magnitude for the very long term (i.e., greater than a thousand years).
- o The degree of long-term isolation provided by a repository, viewed as a system, and the effects of changes in repository design, geology, climate, and human activities on the public health and safety can only be assessed through analytical modeling.
- o Because it is not possible to predict or to restrict the activities of future generations, site selection guidelines, site suitability criteria, and repository design criteria must be developed in such a way as to minimize potential deleterious effects of human activities.
- o Reprocessing is not required to ensure safe disposal in appropriately chosen geologic environments. Repositories can be designed to receive either solidified reprocessed waste or discarded spent fuel.

Attachment: Executive Order

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EXECUTIVE ORDER  
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## THE STATE PLANNING COUNCIL ON RADIOACTIVE WASTE MANAGEMENT

By the authority vested in me as President by the Constitution and laws of the United States of America, and in order to create, in accordance with the provisions of the Federal Advisory Committee Act, as amended (5 U.S.C. App. I), an advisory committee on radioactive waste management, it is hereby ordered as follows:

1-1. Establishment.

1-101. There is established the State Planning Council on Radioactive Waste Management.

1-102. The Council shall be composed of eighteen members as follows:

(a) Fourteen members designated by the President as follows:

(1) Eight Governors of the various states.

(2) Five State and local elected government officials other than governors.

(3) One tribal government representative.

(b) The heads of the following Executive agencies:

(1) Department of the Interior.

(2) Department of Transportation.

(3) Department of Energy.

(4) Environmental Protection Agency.

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(c) The Chairman of the Nuclear Regulatory Commission is invited to participate in the activities of the Council; representatives of other departments and of United States territories and the Trust Territory of the Pacific Islands are invited to take part in the activities of the Council when matters affecting them are considered.

1-103. The President shall designate a Chairman from among the members of the Council.

1-2. Functions.

1-201. The Council shall provide advice and recommendations to the President and the Secretary of Energy on nuclear waste management (including interim management of spent fuel). In particular, the Council shall:

(a) Recommend procedural mechanisms for reviewing nuclear waste management plans and programs in such a way to ensure timely and effective State and local involvement. Such mechanisms should include a consultation and concurrence process designed to achieve Federal, State, and local agreement which accommodates the interests of all the parties.

(b) Review the development of comprehensive nuclear waste management plans including planning activities for transportation, storage, and disposal of all categories of nuclear waste. Provide recommendations to ensure that these plans adequately address the needs of the State and local areas affected.

(c) Advise on all aspects of siting facilities for storage and disposal of nuclear wastes, including the review of recommended criteria for site selection and site suitability, guidelines for regional siting, and procedures for site characterization and selection.

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(d) Advise on an appropriate role for State and local governments in the licensing process for nuclear waste repositories.

(e) Advise on proposed Federal regulations, standards, and criteria related to nuclear waste management programs.

(f) Identify and make recommendations on other matters related to the transportation, storage, and disposal of nuclear waste that the Council believes are important.

1-202. Within one year after the Council's first organizational meeting, but in any event not later than seventeen months after the issuance of this Order, the Council shall prepare and submit to the President a public report on its functions set forth in Section 1-201.

### 1-3. Administrative Provisions.

1-301. Subcommittees of the Council may be established in accordance with the provisions of the Federal Advisory Committee Act, as amended.

1-302. The members of the Council, including the members of its subcommittees, who are not otherwise paid a salary by the Federal Government, shall receive no compensation from the United States by virtue of their service on the Council, but all members may receive the transportation and travel expenses, including per diem in lieu of subsistence, authorized by law (5 U.S.C. 5702 and 5703).

1-303. To the extent permitted by law, and subject to the availability of funds, the Secretary of Energy shall provide the Council, including any subcommittees, with necessary facilities, support, and services, including staff and an executive director.

1-4. General Provisions.

1-401. Notwithstanding the provisions of any other Executive order, the functions of the President under the Federal Advisory Committee Act, as amended (5 U.S.C. App. I), except that of reporting annually to the Congress, that are applicable to the Council, shall be performed by the Secretary of Energy in accordance with guidelines and procedures established by the Administrator of General Services.

1-402. The Council shall terminate thirty days after it transmits its final report to the President, but in no event shall it terminate later than eighteen months after the effective date of this Order.

THE WHITE HOUSE

, 1980

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