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THE WHITE HOUSE

WASHINGTON

July 28, 1976

MEETING WITH BOB FRI AND HEADS OF AGENCIES
CONCERNED WITH NUCLEAR POLICY

Thursday, July 29, 1976

11:45 A.M. (20 minutes)

The Cabinet Room

From: Jim Cannon

I. PURPOSE

To formally advise the agency heads of your decision to undertake a comprehensive review of nuclear policy, to seek cooperation in the review, to introduce Bob Fri as the review team leader and to make clear the importance you ascribe to the review.

II. BACKGROUND, PARTICIPANTS AND PRESS PLAN

A. Background

On July 19, you approved recommendations (memo at TAB A) from Brent Scowcroft, Jim Lynn, and Jim Cannon that a concerted effort be undertaken to review nuclear policy options.

Since your decision, Bob Seamans has agreed to make Bob Fri available on a full-time basis to lead the review effort. Bob Fri moved to the Executive Office Building and began work on the review last Thursday. He will briefly outline the study following your remarks.

Questions have been raised by one or two agency heads as to why the review is not being conducted by an existing policy group (e.g., NSC, Domestic Council, or ERC). Agencies have been told that the policy issues cut across domestic and national security areas and involve issues other than energy, and, therefore, the establishment of a special, temporary review group is necessary.

In a related development, the JCAE succeeded yesterday in delaying the Nuclear Export Reorganization Bill that is being pushed by Ribicoff, Percy and Glenn. In so doing, however, Senator Pastore asked Administration witnesses (ERDA, State, et. al.) to work with the JCAE and Senate Government Operations Committee to come up with an alternative bill.

B. Participants. See TAB B.

C. Press Plan. White House Photographer.

III. TALKING POINTS

- ° While we have made some good progress in the nuclear area over the past two years, we are still faced with several critical policy issues -- particularly with respect to nuclear exports, proliferation, reprocessing of nuclear fuel and management of nuclear wastes.
- ° Because these policy issues are so interrelated and involve the interests of all your agencies, I decided that it was time for a high-level, comprehensive review.
- ° Bob Fri has agreed to take on the important assignment, for the next few weeks, of leading the review. I am sure that the selection of someone at Bob's level and special competence will give you some idea of the importance that I attach to this study.
- ° I place the highest priority on this review, and I ask that all of you cooperate fully with Bob and his team in this spirit. He will be asking both for input and staff assistance, and he plans to work closely with you so that everyone's views will be taken into account.
- ° I would like all possible initiatives considered within the context of the review. Not all the initiatives considered will be adopted and some may turn out to be inappropriate for a public message.
- ° I understand that Senator Pastore asked yesterday for help from several of your agencies in drafting a bill dealing with nuclear exports. I think it is important that we work with his committee.

However, Bob's effort should be the channel for this cooperation, and I am asking him to take on this responsibility in full coordination with you.

- ° I would like to have Bob outline for you his plan for proceeding with the review.

(A copy of your July 27 letter to John Anderson, informing him of the review, is attached at TAB C.)

TAB A

WASHINGTON

July 10, 1976

MEMORANDUM FOR: THE PRESIDENT

FROM: BRENT SCOWCROFT
JIM CANNON
JIM HINN

SUBJECT: NUCLEAR POLICY - ISSUES AND PROBLEMS
REQUIRING ATTENTION AND POTENTIAL
POLICY STATEMENT

This memorandum:

- Identifies nuclear export and weapons proliferation, reprocessing and waste management problems requiring early attention.
- Summarizes growing Congressional, public and media concern about these problems, including restrictive legislation now moving through the Congress, criticism of the Administration and the potential for more of both in the months ahead.
- Suggests the need for a major effort over the next six weeks to develop and evaluate several potential policy and program actions, followed by a Presidential statement on nuclear policy by mid-September.

ISSUES

The principal issues presented for your consideration are:

- Whether you wish to direct that the necessary effort be undertaken over the next six weeks to develop and evaluate proposals and present them for your consideration;
- Whether you wish to approve, tentatively, the concept of a major nuclear policy statement in September; and
- If so, where to assign responsibility for assuring that all necessary work is carried out and issues and a draft statement are presented for your consideration.

BACKGROUND AND STATUS - NUCLEAR POLICY

The acceptability of commercial nuclear power passed a major test with the defeat of Proposition 13 in California. Also, we expect that your uranium enrichment proposal will soon be approved by the Congress, paving the way for expansion of capacity and thus resolving the principal remaining uncertainty at the "front end" of the commercial nuclear power cycle. Some questions continue to be raised about the adequacy of uranium supply, mining and milling capacity and nuclear safety, but these appear to be manageable problems -- with primary responsibility in industry and the Nuclear Regulatory Commission (NRC). However, these front-end problems are aggravated by the uncertainties associated with nuclear fuel reprocessing and waste handling and storage as described below. The development of advanced nuclear technologies (e.g., breeder) is adequately funded in your budget proposals.

However, several major interrelated nuclear power and proliferation issues are now facing us and these are drawing increased attention in the Congress, public and media. These involve:

- U.S. policy on nuclear exports and safeguards to reduce the potential for weapons proliferation.
- U.S. policy with respect to reprocessing of spent fuel from commercial power plants to recover plutonium and unused uranium, and the commercial demonstration of technology.
- The adequacy of U.S. plans for the safe handling and storage of nuclear wastes, particularly assurances that repositories will be available for long-term storage of long-lived and high-level wastes.

The potential solutions for these problems are intertwined; e.g., we cannot resolve policy on reprocessing by other nations until we know how we are going to handle the problem in the U.S. The issues involve both domestic and national security considerations and they affect both the continued acceptability of nuclear power in the U.S. and our position as a major free-world supplier of nuclear equipment and fuel for peaceful purposes. Maintaining our strong position as a free-world supplier is one of our best means of controlling proliferation.

PUBLIC, PRESS AND CONGRESSIONAL ACTIONS AND OUTLOOK

While the California Proposition failed, other referenda involving restrictions on commercial nuclear power have qualified for November ballots in Washington, Oregon, and Colorado. These referenda together with three restrictive laws passed in California prior to the moratorium vote, will keep attention focused on unresolved reprocessing, waste management and proliferation issues.

Concern about proliferation has lead to a number of restrictive provisions in bills now moving through the Congress -- most of which require additional Congressional review of nuclear exports. These requirements will introduce more uncertainty and delay, give potential foreign customers new doubts about the reliability of the U.S. as a supplier of nuclear equipment and materials, and thus hamper U.S. efforts to impose rigid safeguards against proliferation.

Congressional developments, including recent strong criticism from Congressman John Anderson is summarized at Tab A.

The number of press articles is increasing and the tone is growing more critical. Press attention focused particularly on the recent actions by the NRC on export licenses involving Spain and India. (The role and activities of the NRC is also summarized at Tab A.)

NATURE OF THE EFFORT NEEDED

ERDA Administrator Seamans has recommended (letter at Tab B) undertaking a major program to provide nuclear fuel reprocessing in the U.S., permitting foreign participation in this activity, and using this program as the centerpiece of a major Presidential statement on non-proliferation.

We agree that actions on reprocessing should be considered but we believe that a more comprehensive approach should be taken when developing proposals and a draft statement for your consideration. The paper at Tab C outlines in more detail the scope of the problems requiring consideration and identifies a number of possible actions, all of which require further development and evaluation before they are presented to you for consideration. We also believe that an effort should be undertaken immediately, particularly in view of the growing concern in the Congress.

In view of the complex nature of the issues involved, a number of agencies will need to be involved and will need to devote resources to the effort. These include: ERDA, State, ACDA, NRC and, to a lesser extent, Interior, EPA, Commerce, FEA and CEQ.

RECOMMENDATIONS

1. That you direct that work begin immediately to develop and evaluate the potential initiatives described briefly in Tab C (and others subsequently identified), with decision papers presented to you by August 30.

APPROVE _____ DISAPPROVE _____

2. That you tentatively decide to issue a major statement on nuclear policy or send a message to Congress in mid-September.

APPROVE _____ DISAPPROVE _____

3. That you assign responsibility jointly to us (Brent Scowcroft, Jim Cannon, and Jim Lynn) to develop and carry out a plan to accomplish the necessary work in cooperation with all the agencies concerned.

APPROVE _____ DISAPPROVE _____

A



PRINCIPAL CONGRESSIONAL AND NUCLEAR
REGULATORY COMMISSIONS (NRC) ACTIONS RELATING
TO NUCLEAR EXPORTS AND REPROCESSING

- I. CONGRESSIONAL. Principal Congressional actions -- including legislation passed and pending and a sampling of recent criticism -- are as follows:
- A. A 1974 law requires all bilateral "agreements for cooperation" involving significant nuclear exports be submitted to Congress for a 60-day period of review. This was stimulated by concern over Israeli and Egyptian nuclear accords.
 - B. The Military Aid Bill includes a prohibition (the Symington Amendment) against military assistance to countries which furnish or receive nuclear reprocessing or enrichment facilities not under multinational control or IAEA safeguards. Restrictions could be waived by the President in individual cases upon specific findings -- subject to disapproval by a joint resolution of the Congress within 30 days.
 - C. The ERDA 1977 Authorization bill includes an amendment (still subject to final wording in conference after July recess) requiring Congressional approval of the first exports of nuclear fuel or equipment to any country that has not signed the NPT or is not covered by a Congressionally-approved agreement for cooperation.
 - D. The House International Relations Committee is expected to report an amendment to the Export Administration Act which would require prohibitions against reprocessing of fuel exported by U.S. or burned in U.S.-supplied reactors, unless the Secretary of State certifies that there would be at least a 90-day warning before material could be used in a nuclear device.
 - E. The Senate Government Operations Committee reported a bill (S. 1439) on May 14 sponsored by Senators Glenn, Ribicoff and Percy, which (a) shifts additional executive branch nuclear export responsibility to State Department and the independent Nuclear Regulatory Commission from ERDA and Commerce

Department and (b) makes the Congress the referee in disputes between State and NRC over the granting of export licenses. This bill was referred to the JCAE and Foreign Relations for 60 days, which period has now been extended through the end of August. Several Administration witnesses have testified against the bill and Secretary Kissinger was expected to testify on June 29 but his testimony has been delayed. The JCAE is pressing the Administration for alternative proposals.

- F. On June 25, Congressman John Anderson publicly blasted "the White House" for not moving fast enough to resolve problems relating to reprocessing, nuclear exports and proliferation. (This occurred despite our attempts to keep his staff thoroughly informed of Administration efforts.)
- G. Congressman Anderson has since written to JCAE Chairman Pastore urging extensive hearings over the next two months -- with the objective of pressing the Administration for answers on reprocessing, nuclear exports and proliferation issues. (We have been advised informally by Anderson's staff that he probably would agree to urge Senator Pastore to delay hearings if the Administration plans to come forward with new proposals.)
- H. Senator Ribicoff has been a persistent critic for the past two years of what he believes is inadequate executive branch action on reprocessing, nuclear exports and proliferation. Over the past four weeks he has been pressing particularly hard with respect to U.S.-supplied materials (heavy water) in the Indian reactor used to produce material for the device exploded by India in 1974. He will almost certainly use the State Department responses to press his case even more.

II. NUCLEAR REGULATORY COMMISSION. The NRC now plays a major role in nuclear exports and will decide whether, when, and under what conditions reprocessing will be permitted in the U.S. The NRC role has become particularly important because:

- A. Inadvertently, the final responsibility for approving nuclear exports was allowed to be vested in the independent NRC rather than the executive branch. This resulted from the September 1974 law which created ERDA and NRC.
- B. The NRC has just announced decisions on licenses to export a reactor to Spain and an interim supply of fuel for the Tarapur reactor in India. The NRC decisions, including the strong dissent of one Commissioner have been made public. There appears to be agreement within the NRC that additional controls are needed but there is sharp dispute as to whether additional controls -- beyond those in existing agreements -- should now be imposed as a condition of licenses issued under existing agreements. The view of the dissenting Commissioner is getting support in the press and from some members of Congress.
- C. The NRC is now working on an environmental impact statement necessary to its decision -- expected in early 1977 -- as to whether to permit wide scale use of plutonium as reactor fuel. This and subsequent decisions on the licensing of reprocessing facilities will have a major impact on the desirability, feasibility and economics of nuclear fuel reprocessing. (The decision will also have an impact on the viability of the liquid metal fast breeder reactor (LMFBR) which would be fueled with plutonium and which is a major factor in the economic justification for reprocessing of spent fuel elements to recover plutonium and unused uranium.)

B



SUMMARY OF PRINCIPAL NUCLEAR POWER PROBLEMS
AND POSSIBLE RESPONSES: NUCLEAR EXPORTS,
REPROCESSING AND WASTE MANAGEMENT

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SUMMARY OF PRINCIPAL NUCLEAR PROBLEMS
AND POSSIBLE RESPONSES: NUCLEAR EXPORTS AND
PROLIFERATION, REPROCESSING AND WASTE MANAGEMENT

I. NUCLEAR EXPORTS AND PROLIFERATION

A. Current Problems

1. Growing Congressional, press, and public concern about nuclear weapons proliferation.

Concern is focused primarily upon the greater availability of plutonium which is extracted from "spent" fuel elements (i.e., the process referred to as "reprocessing"). Once separated plutonium is available, very little time -- hours to days -- is needed to make a nuclear weapon. Concern has continued to grow since India exploded a nuclear device in 1974.

2. Growing concern that current U.S. activities to safeguard against diversion of plutonium for weapons purposes is not adequate.

Attention is now focused on exports of nuclear materials and equipment. Some feel that existing controls (detailed below) have been barely adequate for safeguarding reactors and are simply not adequate to guard against diversion of separated plutonium, particularly if it is accumulated in excess amounts.

3. The U.S. position in the foreign market for nuclear equipment and materials is weakening.

This is resulting from (a) the lack of uranium enrichment capacity, (b) growing strength of foreign competition for nuclear equipment and fuels, (c) uncertainty as to U.S. policy on nuclear exports due to our divisive internal debate, and (d) potentially, delays resulting from Nuclear Regulatory Commission (NRC) control of export licenses and growing Congressional review requirements. As the U.S. loses foreign orders to other suppliers, the U.S. also loses its leverage to obtain rigid safeguards agreements.

4. Perception in the media that the Administration is complacent about potential diversion of plutonium from commercial nuclear power plants abroad.

Overall, our controls generally are more rigorous than those applied by most other suppliers, but this has not helped in the current debate. Also, Canada's recent action in cutting off nuclear relationships with India and imposing strong safeguard controls in connection with its exports has set a tough standard of comparison.

B. Principal Existing Measures Affecting Export Policy and the Control of Proliferation.

1. NPT

Approximately 100 nations have signed the Non-Proliferation Treaty (NPT) foreswearing activities leading to the proliferation of weapons. Several important nations have not signed, including France, India, Pakistan, Israel, South Africa and Brazil.

2. Bilateral "Agreements for Cooperation" between the U.S. and about 30 other nations importing nuclear equipment and materials from the U.S.

These agreements specify safeguards that are to be maintained.

3. IAEA

International Atomic Energy Agency establishes safeguards standards and has some inspection capability.

4. Supplier Discussions

State Department is leading negotiations with other supplier nations, seeking agreement to impose more rigid safeguards. There has been some success achieved, but no agreement to defer the export of reprocessing facilities until more effective controls are developed.

5. New International Convention

The U.S. is exploring a new international nuclear physical security convention and other steps to upgrade physical security standards worldwide.

6. Pressure on Customer Nations

The U.S. brought pressure on the Government of South Korea to cancel its order with the French for a reprocessing plant and is applying similar pressure on Pakistan to forego acquisition of a reprocessing plant, but with less success.

Congressional and press criticism of export policies of West Germany and France continues strong even though both countries claim they are conforming to guidelines recently developed jointly by supplier nations. Germany still has a commitment to supply enrichment and reprocessing technology to Brazil and France is committed to supply a reprocessing plant to Pakistan. Nature of commitments to others, such as South Africa, are unclear.

C. Administration Response Thus Far

The Executive Branch has responded to the above in several ways, but the actions (a) have been piecemeal and largely defensive, and (b) appear inadequate in the face of current Congressional and public attitudes. Responses include:

1. Secretary Kissinger summarized U.S. non-proliferation efforts in testimony in opposition to the Glenn-Percy Nuclear Export Reorganization Bill (S. 1439) before the Senate Government Operations Committee. ERDA, ACDA, and other Administration witnesses gave supporting testimony. Administration witnesses have also testified before JCAE, except for Secretary Kissinger who is expected to appear soon.
2. Informal attempts are being made by State, ERDA, and others to limit the scope of restrictions and of Congressional review requirements in pending bills (e.g., Military Aid and ERDA Authorization).
3. An Executive Order was recently issued setting up procedures for getting a coordinated Executive Branch position (State, ERDA, DOD, ACDA, and Commerce) on nuclear export licenses pending before the NRC. (State Department notifies NRC of the coordinated Executive Branch position.)

D. Additional Actions for Development and Evaluation

Several ideas have surfaced for possible alternative responses to the current situation. Each involves significant issues that require development and evaluation before being presented for decision. Possible actions identified thus far include:

1. Significant hardening of U.S. attitude on nuclear exports safeguards required before exports are permitted.

There appears to be divided views on this. Some probably will argue that past and current controls are as good as can be achieved and/or that tougher U.S. positions, taken unilaterally will not be effective recognizing that the requirements we impose are already tougher than those of most other suppliers with whom the U.S. competes for nuclear markets. Others will argue that anything the U.S. can do unilaterally or in cooperation with others that will help reduce the opportunity for proliferation is worth doing, recognizing the threat. Steps that might be considered to achieve a harder and consistent policy include:

- a. Strong public message -- to supplement diplomatic channel efforts now underway -- to other supplier nations (France and Germany) emphasizing the need to curb proliferation and urging them to: (1) stop supplying reprocessing or enrichment technology to other nations, and (2) adopting more rigorous safeguards requirements.
- b. Head of State meetings to carry out (a), above.
- c. Move to renegotiate safeguards controls under existing agreements for cooperation as a condition for further exports, particularly giving the U.S. a veto on whether and where any fuel irradiated in U.S. reactors is reprocessed.

- d. In addition to other actions, but not a substitute for, appoint a panel of experts not now involved in U.S. nuclear export activities to review past and current practices and submit recommendations to you for improvements.
2. Intensify efforts to discourage reprocessing (in the U.S. and abroad) until better controls (technological and institutional) can be worked out. (This needs to be considered in connection with domestic reprocessing issues, discussed in II, below.)

If this policy approach were to be taken, consideration would have to be given to:

- a. Expanding storage for "spent" fuel elements, possibly making storage available to other countries.
 - b. "Buy back" of spent fuel elements.
 - c. Finding ways to replace the energy value of the plutonium and unused uranium in the spent fuel elements (which is in the range of 10-30% of the total energy value if reprocessing and recycle of plutonium was permitted).
 - d. Other incentives to discourage the separation of plutonium through reprocessing.
3. As a means to discourage the spread of reprocessing centers, provide U.S. reprocessing services to foreign countries.

This depends on development of reprocessing in the U.S. since we currently have no commercial reprocessing in operation.

- a. Assist U.S. industry in demonstrating reprocessing and related technology (plutonium conversion, waste handling, safeguards), as discussed in II, below.

- b. Urge or require U.S. firms planning to provide reprocessing services to dedicate a portion of their capacity to serve foreign needs, thereby potentially satisfying foreign needs for many years without the construction of reprocessing plants abroad.
- c. Go beyond #2 above by offering to allow other governments to participate in the operation of the first expected reprocessing plant (Barnwell, South Carolina) as a demonstration of the concept of a multi-national reprocessing center.
- d. Determine alternatives to returning plutonium to foreign reprocessing customers -- such as substituting energy equivalent of reprocessed fuel in the form of enriched uranium.

4. Propose international storage for excess plutonium.

IAEA has authority to establish repositories for excess nuclear materials. The U.S. could propose that this authority be implemented, that all nations store excess plutonium in such repositories and indicate that the U.S. would participate with the deposit of its excess plutonium.

5. Intensify efforts to strengthen IAEA safeguards.

- a. Make available advanced U.S. safeguards technology to other nations and the IAEA.
- b. Consider further strengthening of IAEA safeguards, expanding the proposal for a \$5 million - 5 year voluntary U.S. contribution announced by the President on February 26, 1976.

II. NUCLEAR FUEL REPROCESSING AND SPREAD OF REPROCESSING TECHNOLOGY

A. Background

- 1. The principal driving forces behind the desire to establish a U.S. industry to reprocess "spent" fuel elements from commercial power reactors are to:

- a. recover and reuse the plutonium and unused uranium from elements (with energy value of 10-30% of initial fuel input).
 - b. provide plutonium to fuel liquid metal fast breeder (LMFBR) reactors once they are used commercially.
 - c. reduce irradiated fuel and associated waste products to most manageable forms.
2. Technology for reprocessing has been demonstrated in AEC (now ERDA) operations.
 3. Consistent policy followed that the reprocessing step in the nuclear fuel cycle is the responsibility of industry. Government sponsors R&D.
 4. The principal driving forces behind the spread of reprocessing technology and equipment worldwide are:
 - a. Competition among the suppliers of nuclear energy reactors for sales in third countries;
 - b. Desire on the part of recipients of the technology and equipment to place as large a part of the nuclear fuel cycle as possible under their own national control;
 - c. desire by some for a nuclear weapons capability.

B. Current Problems

1. Demonstrating Technology in Commercial Operations

There is not now any commercial reprocessing capacity in the U.S.:

- a. One plant that was operational (Nuclear Fuel Services) in Western, N.Y., is closed down and probably will not reopen.
- b. A \$70 million plant built at Morris, Illinois by GE is never expected to operate due to technological problems.

c. A \$260 million plant, including only initial storage and separations stages of reprocessing, has been built in South Carolina by Allied Chemical and General Atomics (AGNES). Its actual operation depends upon:

- obtaining an NRC license;
- either (a) storage of separated plutonium in liquid form, or (b) construction of a \$150 million conversion facility, for which Government assistance may be needed;
- construction of a \$350 million waste solidification and packaging facility.

2. Licensing

Licensing of reprocessing facility depends upon resolution of a number of issues now pending before the NRC in one major and several other issues. The principal issue is whether to allow widespread recycling of plutonium. This depends upon resolving safety, environmental, economic, and safeguards issues -- which are being covered in a Generic Environmental Impact Statement which should be completed by early 1977, with an NRC decision in mid-1977.

3. Alternatives

The NRC statement almost certainly will have to deal with alternatives to reprocessing, some of which (such as indefinite storage of irradiated fuel) have not been fully studied. Also, the extent of the economic advantages of reprocessing depend upon the likelihood and timing of commercial breeder reactors. (The construction of the first demonstration reactor at Clinch River, Tennessee, has not begun, is behind schedule and is growing in cost.) Assuming reprocessing and recycle is permitted, NRC will have to issue complex safety, environmental and safeguards standards and guidelines. A thorough assessment of these factors has not been completed.

4. Decisions needed

Decisions are needed on whether and when to reprocess so that investment decisions can be made by industry to build either: (a) reprocessing facilities, or (b) additional storage facilities for spent fuel elements. One or the other and maybe both are needed to handle spent fuel from plants already in operation. The absence of firm plans is a factor in utility and utility commission decisions on nuclear power and in nuclear moratoria referenda.

5. Barnwell Facility

The consortium building the Barnwell reprocessing facility is experiencing financial problems due to higher costs and uncertainty about the future of reprocessing. Abandonment of the operation is conceivable.

C. Actions Taken or Underway

1. ERDA

a. 1977 Budget. The President's 1977 Budget included funds for additional R&D needed for reprocessing. It also contemplated a supplemental to fund some kind of assistance program to encourage construction of reprocessing facilities, once the right course of action was decided upon. (In practice, it may not be possible to implement a program until NRC decides on recycling of plutonium.)

b. Program Development. In February, ERDA solicited expressions of interest from industry on plans for providing reprocessing and on the types of assistance that might be necessary or appropriate (with emphasis on a minimum Federal role). Over 30 responses were received and ERDA is now considering those in the development of its proposed program.

2. NRC is proceeding with hearings on the completed portions of the plutonium recycle generic impact statement and is completing the remaining portions -- all headed toward a decision in mid-1977.

3. ACDA, ERDA, and State are working to define the concept of a multinational reprocessing center and considering the possibility of some kind of foreign participation in the Barnwell facility. The desire for non-proliferation benefits has already attracted some Congressional support for assisting Barnwell to serve foreign users.
- D. Additional Actions for Development and Evaluation. Resolution of questions about domestic reprocessing is key to any major nuclear policy announcements. A major effort will be needed to sort out reprocessing issues.
1. Immediate action to complete the development, analysis, and evaluation of the following:
 - a. The need for, timing of, and alternatives to reprocessing. This should provide a basis for executive branch (non-regulatory) decisions as to whether and when reprocessing should be encouraged. (Note that a decision to defer reprocessing might influence other countries to do the same.)
 - b. Alternative ways for the Government to work with industry to provide reprocessing capacity, assuming that we will proceed domestically with reprocessing.
 2. Explore the potential for various forms of foreign involvement in domestic reprocessing facilities -- as outlined in I(D)(3) (pg. 5).

III. NUCLEAR WASTE MANAGEMENT

A. Background

1. Government policy has, since early 1970's, been that the Federal Government would take responsibility for long-term storage of high level wastes. Private industry is responsible (subject to regulation) for handling and packaging of wastes and delivering them in a prescribed form to a Federal repository for long-term storage.

2. Government policy has regarded the handling and storage of lower level radioactive wastes as an industry task, subject to Federal or State regulation. Some problems have emerged but these probably can be resolved within existing arrangements.
3. Approaches to long-term storage have been considered and then rejected: storage in the salt mine in Kansas and a temporary near surface storage facility. The program for developing acceptable approaches and providing a permanent repository heretofore has had relatively low priority.
4. There seems to be general agreement that technology is available to permit safe long-term storage, but there is a long way to go before a repository is in place and ready to receive wastes.
5. International plans and standards for disposal of nuclear wastes have not been adequately addressed.

B. Current Problems

1. The major task facing the Federal Government is finding an acceptable location(s) for a repository, constructing it, and opening it to receive wastes. Current assessments suggest that such a repository should be in place by 1985 and it is not clear that current plans -- which involve at least five Federal agencies -- will result in achieving this objective.
2. Finding a location for a repository acceptable to residents of the region selected will be a difficult task.
3. Related problems involve sorting out the roles and responsibilities of the several agencies involved; particularly, ERDA, NRC, EPA, and Geological Survey, and providing some continuing needs for inter-agency coordination.

4. The absence of convincing plans to have a high-level repository in place are contributing to: (a) the efforts by nuclear power opponents to slow down nuclear power, and (b) questions by utilities and utility commissions as to the desirability of committing to more nuclear plants.
5. Expected increase in nuclear wastes worldwide between now and 1990 will require development of international plans standards.

C. Actions Taken or Underway

1. ERDA

- a. 1977 Budget. The President's 1977 Budget includes \$65 million in outlays (compared to \$12 million in FY 1976) to proceed with a waste management program. A large share of these funds will be used for exploratory drilling of various kinds of geologic formations around the country in order to find a suitable location for a pilot repository and operational repositories.
 - b. Technical Alternatives and Generic Environmental Impact Statement. ERDA has published an extensive technical alternatives document and is proceeding with development of the necessary generic environmental impact statement covering waste management with the objective of issuing a draft statement early in 1977 and a final statement late in 1977.
2. NRC is working on waste handling, packaging, transportation, and storage regulations and an associated environmental impact statement with the objective of completing work in 1978.
 3. Interagency Task Force. An OMB-lead interagency task force is evaluating the schedules and the interagency relationships among the five agencies principally involved: ERDA, NRC, EPA, Geological Survey, and CEQ. This group's work has already identified potential obstacles that would prevent

having a repository available when needed. The problems include: (a) sequencing of each agency's activities so that information will be available to others when needed, (b) overlapping functions between NRC and EPA, and (c) continuing inter-agency coordination.

D. Additional Actions for Development and Evaluation

1. Develop a firm plan setting out all major actions which must be taken over the next ten years and when they will occur -- covering all forms of nuclear waste.
2. Develop a clear statement of roles and responsibilities (including solution of overlap in EPA and NRC functions), and develop arrangements for continuing inter-agency coordination.
3. Consider the extension of our domestic waste management plans and solutions internationally, perhaps through one or more of the following:
 - a. Offer to make waste handling and storage technology available to other nations.
 - b. Offer to investigate international waste disposal sites, either independent of or in conjunction with reprocessing arrangements.

This will require consideration of controversial issues such as the storage in one country of wastes resulting from nuclear energy used in another country.

TAB B

AGENCIES

Elliott Richardson, Secretary of Commerce
William Fisher (for Secretary Kleppe), Assistant
Secretary of Interior
Robert W. Fri (for Administrator Seamans), Study
Director and Deputy Administrator of ERDA
Russell Train, Administrator of EPA
Steven D. Jellinek (for Chairman Peterson), Staff
Director of CEQ
Marcus Rowden, Chairman of NRC
John A. Hill (for Administrator Zarb), Deputy
Administrator of FEA
Robert Ellsworth (for Secretary Rumsfeld), Deputy
Secretary of Defense
Charles Robinson, Deputy Secretary of State
John Lehman (for Director Ikle), Deputy Director of ACDA

REVIEW TEAM

Robert W. Fri - Director
Jack Flynn
Harold D. Bengelsdorf
Rodney Weiher
Dennis R. Spurgeon
Jerone Kahan
John P. Boright

WHITE HOUSE STAFF

Jim Connor
Jim Cannon
Jack Marsh
Brent Scowcroft
Jim Mitchell (for Jim Lynn)
Glenn Schleede
Dave Elliott

TAB C

THE WHITE HOUSE

WASHINGTON

July 27, 1976

Dear John:

Recently, you have expressed your view that greater attention is needed to a number of important nuclear policy matters, including nuclear exports and fuel reprocessing. You have also suggested the possibility of using domestic reprocessing facilities to serve both domestic and foreign needs and to further worldwide efforts to control proliferation.

The matters you have identified are of continuing importance to this Administration and we have taken a number of steps to deal with them, all with the objective of providing safe, clean, economic and properly safeguarded nuclear power here and abroad. We are looking forward to more progress. For example, the passage of the Nuclear Fuel Assurance Act will be an important step toward the expansion of capacity in the United States to produce enriched uranium for nuclear power plants. This will help us maintain the influence associated with the U.S. role as a leading world supplier of nuclear fuel and equipment for peaceful purposes and thus contribute substantially to our non-proliferation objectives.

In addition, the departments and agencies have been examining additional options within their areas of responsibility that might contribute further to the achievement of our nuclear policy objectives. For example, we have been working with foreign nuclear suppliers and customers to strengthen controls against the diversion of nuclear materials. We are also proceeding with actions to resolve remaining questions with respect to domestic reprocessing and nuclear waste management.

Because nuclear policy issues are of such great importance, I believe they should be treated comprehensively. Accordingly, I have recently directed that a special concerted review be undertaken of our various nuclear policy objectives and options, particularly with respect to exports, reprocessing and waste management. In view of your special interest, I

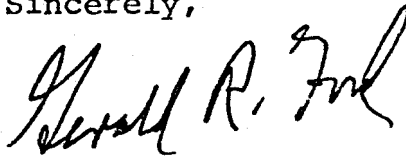
wanted you to know of this decision. The review will involve both domestic and international aspects. All Federal departments and agencies, as well as the policy groups in the Executive Office, that have responsibilities relating to nuclear policy will be involved in the review.

Mr. Robert W. Fri, who normally serves as Deputy Administrator of the Energy Research and Development Administration, has agreed to accept the responsibility for full-time leadership of the review effort. Mr. Fri's appointment to this temporary duty reflects my intent that special attention be given to this comprehensive review of nuclear policy issues.

I expect that the review group will complete the principal part of its work by early fall. If the group concludes that additional actions are warranted, I will review those recommendations carefully and, where appropriate, will follow up with proposals to the Congress.

I look forward to working with you as the review progresses.

Sincerely,

A handwritten signature in dark ink, appearing to read "Gerald R. Ford". The signature is written in a cursive, flowing style with a large, prominent "F" and "D".

The Honorable John B. Anderson
U.S. House of Representatives
Washington, D. C. 20515

{7/29/76}

PARTICIPANTS IN 11:45 MEETING ON NUCLEAR POLICY

These papers are provided for your reference during the meeting.

Please leave them on the table when the meeting is over.

Thank you.

BACKGROUND POLICY - BACKGROUND PAPERS

- TAB A -- Background and Status - Nuclear Policy
- TAB B -- Principal Congressional and Nuclear Regulatory Commission (NRC) Actions Relating to Nuclear Exports and Reprocessing
- TAB C -- Summary of Principal Nuclear Power Problems and Possible Response: Nuclear Exports and Proliferation, Reprocessing and Waste Management

BACKGROUND AND STATUS - NUCLEAR POLICY

The acceptability of commercial nuclear power passed a major test with the defeat of Proposition 13 in California. Also, we expect that your uranium enrichment proposal will soon be approved by the Congress, paving the way for expansion of capacity and thus resolving the principal remaining uncertainty at the "front end" of the commercial nuclear power cycle. Some questions continue to be raised about the adequacy of uranium supply, mining and milling capacity and nuclear safety, but these appear to be manageable problems -- with primary responsibility in industry and the Nuclear Regulatory Commission (NRC). However, these front-end problems are aggravated by the uncertainties associated with nuclear fuel reprocessing and waste handling and storage as described below. The development of advanced nuclear technologies (e.g., breeder) is adequately funded in your budget proposals.

However, several major interrelated nuclear power and proliferation issues are now facing us and these are drawing increased attention in the Congress, public and media. These involve:

- U.S. policy on nuclear exports and safeguards to reduce the potential for weapons proliferation.
- U.S. policy with respect to reprocessing of spent fuel from commercial power plants to recover plutonium and unused uranium, and the commercial demonstration of technology.
- The adequacy of U.S. plans for the safe handling and storage of nuclear wastes, particularly assurances that repositories will be available for long-term storage of long-lived and high-level wastes.

The potential solutions for these problems are intertwined; e.g., we cannot resolve policy on reprocessing by other nations until we know how we are going to handle the problem in the U.S. The issues involve both domestic and national security considerations and they affect both the continued acceptability of nuclear power in the U.S. and our position as a major free-world supplier of nuclear equipment and fuel for peaceful purposes. Maintaining our strong position as a free-world supplier is one of our best means of controlling proliferation.

TAB B

PRINCIPAL CONGRESSIONAL AND NUCLEAR
REGULATORY COMMISSIONS (NRC) ACTIONS RELATING
TO NUCLEAR EXPORTS AND REPROCESSING

- I. CONGRESSIONAL. Principal Congressional actions -- including legislation passed and pending and a sampling of recent criticism -- are as follows:
- A. A 1974 law requires all bilateral "agreements for cooperation" involving significant nuclear exports be submitted to Congress for a 60-day period of review. This was stimulated by concern over Israeli and Egyptian nuclear accords.
 - B. The Military Aid Bill includes a prohibition (the Symington Amendment) against military assistance to countries which furnish or receive nuclear reprocessing or enrichment facilities not under multinational control or IAEA safeguards. Restrictions could be waived by the President in individual cases upon specific findings -- subject to disapproval by a joint resolution of the Congress within 30 days.
 - C. The ERDA 1977 Authorization bill includes an amendment (still subject to final wording in conference after July recess) requiring Congressional approval of the first exports of nuclear fuel or equipment to any country that has not signed the NPT or is not covered by a Congressionally-approved agreement for cooperation.
 - D. The House International Relations Committee is expected to report an amendment to the Export Administration Act which would require prohibitions against reprocessing of fuel exported by U.S. or burned in U.S.-supplied reactors, unless the Secretary of State certifies that there would be at least a 90-day warning before material could be used in a nuclear device.
 - E. The Senate Government Operations Committee reported a bill (S. 1439) on May 14 sponsored by Senators Glenn, Ribicoff and Percy, which (a) shifts additional executive branch nuclear export responsibility to State Department and the independent Nuclear Regulatory Commission from ERDA and Commerce



Department and (b) makes the Congress the referee in disputes between State and NRC over the granting of export licenses. This bill was referred to the JCAE and Foreign Relations for 60 days, which period has now been extended through the end of August. Several Administration witnesses have testified against the bill and Secretary Kissinger was expected to testify on June 29 but his testimony has been delayed. The JCAE is pressing the Administration for alternative proposals.

- F. On June 25, Congressman John Anderson publicly blasted "the White House" for not moving fast enough to resolve problems relating to reprocessing, nuclear exports and proliferation. (This occurred despite our attempts to keep his staff thoroughly informed of Administration efforts.)
- G. Congressman Anderson has since written to JCAE Chairman Pastore urging extensive hearings over the next two months -- with the objective of pressing the Administration for answers on reprocessing, nuclear exports and proliferation issues. (We have been advised informally by Anderson's staff that he probably would agree to urge Senator Pastore to delay hearings if the Administration plans to come forward with new proposals.)
- H. Senator Ribicoff has been a persistent critic for the past two years of what he believes is inadequate executive branch action on reprocessing, nuclear exports and proliferation. Over the past four weeks he has been pressing particularly hard with respect to U.S.-supplied materials (heavy water) in the Indian reactor used to produce material for the device exploded by India in 1974. He will almost certainly use the State Department responses to press his case even more.

II. NUCLEAR REGULATORY COMMISSION. The NRC now plays a major role in nuclear exports and will decide whether, when, and under what conditions reprocessing will be permitted in the U.S. The NRC role has become particularly important because:

- A. Inadvertently, the final responsibility for approving nuclear exports was allowed to be vested in the independent NRC rather than the executive branch. This resulted from the September 1974 law which created ERDA and NRC.
- B. The NRC has just announced decisions on licenses to export a reactor to Spain and an interim supply of fuel for the Tarapur reactor in India. The NRC decisions, including the strong dissent of one Commissioner have been made public. There appears to be agreement within the NRC that additional controls are needed but there is sharp dispute as to whether additional controls -- beyond those in existing agreements -- should now be imposed as a condition of licenses issued under existing agreements. The view of the dissenting Commissioner is getting support in the press and from some members of Congress.
- C. The NRC is now working on an environmental impact statement necessary to its decision -- expected in early 1977 -- as to whether to permit wide scale use of plutonium as reactor fuel. This and subsequent decisions on the licensing of reprocessing facilities will have a major impact on the desirability, feasibility and economics of nuclear fuel reprocessing. (The decision will also have an impact on the viability of the liquid metal fast breeder reactor (LMFBR) which would be fueled with plutonium and which is a major factor in the economic justification for reprocessing of spent fuel elements to recover plutonium and unused uranium.)



TAB C

SUMMARY OF PRINCIPAL NUCLEAR POWER PROBLEMS
AND POSSIBLE RESPONSES: NUCLEAR EXPORTS,
REPROCESSING AND WASTE MANAGEMENT

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SUMMARY OF PRINCIPAL NUCLEAR PROBLEMS
AND POSSIBLE RESPONSES: NUCLEAR EXPORTS AND
PROLIFERATION, REPROCESSING AND WASTE MANAGEMENT

I. NUCLEAR EXPORTS AND PROLIFERATION

A. Current Problems

1. Growing Congressional, press, and public concern about nuclear weapons proliferation.

Concern is focused primarily upon the greater availability of plutonium which is extracted from "spent" fuel elements (i.e., the process referred to as "reprocessing"). Once separated plutonium is available, very little time -- hours to days -- is needed to make a nuclear weapon. Concern has continued to grow since India exploded a nuclear device in 1974.

2. Growing concern that current U.S. activities to safeguard against diversion of plutonium for weapons purposes is not adequate.

Attention is now focused on exports of nuclear materials and equipment. Some feel that existing controls (detailed below) have been barely adequate for safeguarding reactors and are simply not adequate to guard against diversion of separated plutonium, particularly if it is accumulated in excess amounts.

3. The U.S. position in the foreign market for nuclear equipment and materials is weakening.

This is resulting from (a) the lack of uranium enrichment capacity, (b) growing strength of foreign competition for nuclear equipment and fuels, (c) uncertainty as to U.S. policy on nuclear exports due to our divisive internal debate, and (d) potentially, delays resulting from Nuclear Regulatory Commission (NRC) control of export licenses and growing Congressional review requirements. As the U.S. loses foreign orders to other suppliers, the U.S. also loses its leverage to obtain rigid safeguards agreements.



4. Perception in the media that the Administration is complacent about potential diversion of plutonium from commercial nuclear power plants abroad.

Overall, our controls generally are more rigorous than those applied by most other suppliers, but this has not helped in the current debate. Also, Canada's recent action in cutting off nuclear relationships with India and imposing strong safeguard controls in connection with its exports has set a tough standard of comparison.

B. Principal Existing Measures Affecting Export Policy and the Control of Proliferation.

1. NPT

Approximately 100 nations have signed the Non-Proliferation Treaty (NPT) forswearing activities leading to the proliferation of weapons. Several important nations have not signed, including France, India, Pakistan, Israel, South Africa and Brazil.

2. Bilateral "Agreements for Cooperation" between the U.S. and about 30 other nations importing nuclear equipment and materials from the U.S.

These agreements specify safeguards that are to be maintained.

3. IAEA

International Atomic Energy Agency establishes safeguards standards and has some inspection capability.

4. Supplier Discussions

State Department is leading negotiations with other supplier nations, seeking agreement to impose more rigid safeguards. There has been some success achieved, but no agreement to defer the export of reprocessing facilities until more effective controls are developed.

5. New International Convention

The U.S. is exploring a new international nuclear physical security convention and other steps to upgrade physical security standards worldwide.

6. Pressure on Customer Nations

The U.S. brought pressure on the Government of South Korea to cancel its order with the French for a reprocessing plant and is applying similar pressure on Pakistan to forego acquisition of a reprocessing plant, but with less success.

Congressional and press criticism of export policies of West Germany and France continues strong even though both countries claim they are conforming to guidelines recently developed jointly by supplier nations. Germany still has a commitment to supply enrichment and reprocessing technology to Brazil and France is committed to supply a reprocessing plant to Pakistan. Nature of commitments to others, such as South Africa, are unclear.

C. Administration Response Thus Far

The Executive Branch has responded to the above in several ways, but the actions (a) have been piecemeal and largely defensive, and (b) appear inadequate in the face of current Congressional and public attitudes. Responses include:

1. Secretary Kissinger summarized U.S. non-proliferation efforts in testimony in opposition to the Glenn-Percy Nuclear Export Reorganization Bill (S. 1439) before the Senate Government Operations Committee. ERDA, ACDA, and other Administration witnesses gave supporting testimony. Administration witnesses have also testified before JCAE, except for Secretary Kissinger who is expected to appear soon.
2. Informal attempts are being made by State, ERDA, and others to limit the scope of restrictions and of Congressional review requirements in pending bills (e.g., Military Aid and ERDA Authorization).
3. An Executive Order was recently issued setting up procedures for getting a coordinated Executive Branch position (State, ERDA, DOD, ACDA, and Commerce) on nuclear export licenses pending before the NRC. (State Department notifies NRC of the coordinated Executive Branch position.)

D. Additional Actions for Development and Evaluation

Several ideas have surfaced for possible alternative responses to the current situation. Each involves significant issues that require development and evaluation before being presented for decision. Possible actions identified thus far include:

1. Significant hardening of U.S. attitude on nuclear exports safeguards required before exports are permitted.

There appears to be divided views on this. Some probably will argue that past and current controls are as good as can be achieved and/or that tougher U.S. positions, taken unilaterally will not be effective recognizing that the requirements we impose are already tougher than those of most other suppliers with whom the U.S. competes for nuclear markets. Others will argue that anything the U.S. can do unilaterally or in cooperation with others that will help reduce the opportunity for proliferation is worth doing, recognizing the threat. Steps that might be considered to achieve a harder and consistent policy include:

- a. Strong public message -- to supplement diplomatic channel efforts now underway -- to other supplier nations (France and Germany) emphasizing the need to curb proliferation and urging them to: (1) stop supplying reprocessing or enrichment technology to other nations, and (2) adopting more rigorous safeguards requirements.
- b. Head of State meetings to carry out (a), above.
- c. Move to renegotiate safeguards controls under existing agreements for cooperation as a condition for further exports, particularly giving the U.S. a veto on whether and where any fuel irradiated in U.S. reactors is reprocessed.

- d. In addition to other actions, but not a substitute for, appoint a panel of experts not now involved in U.S. nuclear export activities to review past and current practices and submit recommendations to you for improvements.
2. Intensify efforts to discourage reprocessing (in the U.S. and abroad) until better controls (technological and institutional) can be worked out. (This needs to be considered in connection with domestic reprocessing issues, discussed in II, below.)

If this policy approach were to be taken, consideration would have to be given to:

- a. Expanding storage for "spent" fuel elements, possibly making storage available to other countries.
 - b. "Buy back" of spent fuel elements.
 - c. Finding ways to replace the energy value of the plutonium and unused uranium in the spent fuel elements (which is in the range of 10-30% of the total energy value if reprocessing and recycle of plutonium was permitted).
 - d. Other incentives to discourage the separation of plutonium through reprocessing.
3. As a means to discourage the spread of reprocessing centers, provide U.S. reprocessing services to foreign countries.

This depends on development of reprocessing in the U.S. since we currently have no commercial reprocessing in operation.

- a. Assist U.S. industry in demonstrating reprocessing and related technology (plutonium conversion, waste handling, safeguards), as discussed in II, below.



- b. Urge or require U.S. firms planning to provide reprocessing services to dedicate a portion of their capacity to serve foreign needs, thereby potentially satisfying foreign needs for many years without the construction of reprocessing plants abroad.
 - c. Go beyond #2 above by offering to allow other governments to participate in the operation of the first expected reprocessing plant (Barnwell, South Carolina) as a demonstration of the concept of a multi-national reprocessing center.
 - d. Determine alternatives to returning plutonium to foreign reprocessing customers -- such as substituting energy equivalent of reprocessed fuel in the form of enriched uranium.
4. Propose international storage for excess plutonium.
- IAEA has authority to establish repositories for excess nuclear materials. The U.S. could propose that this authority be implemented, that all nations store excess plutonium in such repositories and indicate that the U.S. would participate with the deposit of its excess plutonium.
5. Intensify efforts to strengthen IAEA safeguards.
- a. Make available advanced U.S. safeguards technology to other nations and the IAEA.
 - b. Consider further strengthening of IAEA safeguards, expanding the proposal for a \$5 million - 5 year voluntary U.S. contribution announced by the President on February 26, 1976.

II. NUCLEAR FUEL REPROCESSING AND SPREAD OF REPROCESSING TECHNOLOGY

A. Background

- 1. The principal driving forces behind the desire to establish a U.S. industry to reprocess "spent" fuel elements from commercial power reactors are to:

- a. recover and reuse the plutonium and unused uranium from elements (with energy value of 10-30% of initial fuel input).
 - b. provide plutonium to fuel liquid metal fast breeder (LMFBR) reactors once they are used commercially.
 - c. reduce irradiated fuel and associated waste products to most manageable forms.
- 2. Technology for reprocessing has been demonstrated in AEC (now ERDA) operations.
 - 3. Consistent policy followed that the reprocessing step in the nuclear fuel cycle is the responsibility of industry. Government sponsors R&D.
 - 4. The principal driving forces behind the spread of reprocessing technology and equipment worldwide are:
 - a. Competition among the suppliers of nuclear energy reactors for sales in third countries;
 - b. Desire on the part of recipients of the technology and equipment to place as large a part of the nuclear fuel cycle as possible under their own national control;
 - c. desire by some for a nuclear weapons capability.

B. Current Problems

1. Demonstrating Technology in Commercial Operations

There is not now any commercial reprocessing capacity in the U.S.:

- a. One plant that was operational (Nuclear Fuel Services) in Western, N.Y., is closed down and probably will not reopen.
- b. A \$70 million plant built at Morris, Illinois by GE is never expected to operate due to technological problems.

c. A \$260 million plant, including only initial storage and separations stages of reprocessing, has been built in South Carolina by Allied Chemical and General Atomics (AGNES). Its actual operation depends upon:

- obtaining an NRC license;
- either (a) storage of separated plutonium in liquid form, or (b) construction of a \$150 million conversion facility, for which Government assistance may be needed;
- construction of a \$350 million waste solidification and packaging facility.

2. Licensing

Licensing of reprocessing facility depends upon resolution of a number of issues now pending before the NRC in one major and several other issues. The principal issue is whether to allow widespread recycling of plutonium. This depends upon resolving safety, environmental, economic, and safeguards issues -- which are being covered in a Generic Environmental Impact Statement which should be completed by early 1977, with an NRC decision in mid-1977.

3. Alternatives

The NRC statement almost certainly will have to deal with alternatives to reprocessing, some of which (such as indefinite storage of irradiated fuel) have not been fully studied. Also, the extent of the economic advantages of reprocessing depend upon the likelihood and timing of commercial breeder reactors. (The construction of the first demonstration reactor at Clinch River, Tennessee, has not begun, is behind schedule and is growing in cost.) Assuming reprocessing and recycle is permitted, NRC will have to issue complex safety, environmental and safeguards standards and guidelines. A thorough assessment of these factors has not been completed.

4. Decisions needed

Decisions are needed on whether and when to reprocess so that investment decisions can be made by industry to build either: (a) reprocessing facilities, or (b) additional storage facilities for spent fuel elements. One or the other and maybe both are needed to handle spent fuel from plants already in operation. The absence of firm plans is a factor in utility and utility commission decisions on nuclear power and in nuclear moratoria referenda.

5. Barnwell Facility

The consortium building the Barnwell reprocessing facility is experiencing financial problems due to higher costs and uncertainty about the future of reprocessing. Abandonment of the operation is conceivable.

C. Actions Taken or Underway

1. ERDA

a. 1977 Budget. The President's 1977 Budget included funds for additional R&D needed for reprocessing. It also contemplated a supplemental to fund some kind of assistance program to encourage construction of reprocessing facilities, once the right course of action was decided upon. (In practice, it may not be possible to implement a program until NRC decides on recycling of plutonium.)

b. Program Development. In February, ERDA solicited expressions of interest from industry on plans for providing reprocessing and on the types of assistance that might be necessary or appropriate (with emphasis on a minimum Federal role). Over 30 responses were received and ERDA is now considering those in the development of its proposed program.

2. NRC is proceeding with hearings on the completed portions of the plutonium recycle generic impact statement and is completing the remaining portions -- all headed toward a decision in mid-1977.



3. ACDA, ERDA, and State are working to define the concept of a multinational reprocessing center and considering the possibility of some kind of foreign participation in the Barnwell facility. The desire for non-proliferation benefits has already attracted some Congressional support for assisting Barnwell to serve foreign users.

D. Additional Actions for Development and Evaluation. Resolution of questions about domestic reprocessing is key to any major nuclear policy announcements. A major effort will be needed to sort out reprocessing issues.

1. Immediate action to complete the development, analysis, and evaluation of the following:
 - a. The need for, timing of, and alternatives to reprocessing. This should provide a basis for executive branch (non-regulatory) decisions as to whether and when reprocessing should be encouraged. (Note that a decision to defer reprocessing might influence other countries to do the same.)
 - b. Alternative ways for the Government to work with industry to provide reprocessing capacity, assuming that we will proceed domestically with reprocessing.
2. Explore the potential for various forms of foreign involvement in domestic reprocessing facilities -- as outlined in I(D)(3) (pg. 5).

III. NUCLEAR WASTE MANAGEMENT

A. Background

1. Government policy has, since early 1970's, been that the Federal Government would take responsibility for long-term storage of high level wastes. Private industry is responsible (subject to regulation) for handling and packaging of wastes and delivering them in a prescribed form to a Federal repository for long-term storage.



2. Government policy has regarded the handling and storage of lower level radioactive wastes as an industry task, subject to Federal or State regulation. Some problems have emerged but these probably can be resolved within existing arrangements.
3. Approaches to long-term storage have been considered and then rejected: storage in the salt mine in Kansas and a temporary near surface storage facility. The program for developing acceptable approaches and providing a permanent repository heretofore has had relatively low priority.
4. There seems to be general agreement that technology is available to permit safe long-term storage, but there is a long way to go before a repository is in place and ready to receive wastes.
5. International plans and standards for disposal of nuclear wastes have not been adequately addressed.

B. Current Problems

1. The major task facing the Federal Government is finding an acceptable location(s) for a repository, constructing it, and opening it to receive wastes. Current assessments suggest that such a repository should be in place by 1985 and it is not clear that current plans -- which involve at least five Federal agencies -- will result in achieving this objective.
2. Finding a location for a repository acceptable to residents of the region selected will be a difficult task.
3. Related problems involve sorting out the roles and responsibilities of the several agencies involved; particularly, ERDA, NRC, EPA, and Geological Survey, and providing some continuing needs for inter-agency coordination.



4. The absence of convincing plans to have a high-level repository in place are contributing to: (a) the efforts by nuclear power opponents to slow down nuclear power, and (b) questions by utilities and utility commissions as to the desirability of committing to more nuclear plants.
5. Expected increase in nuclear wastes worldwide between now and 1990 will require development of international plans standards.

C. Actions Taken or Underway

1. ERDA

- a. 1977 Budget. The President's 1977 Budget includes \$65 million in outlays (compared to \$12 million in FY 1976) to proceed with a waste management program. A large share of these funds will be used for exploratory drilling of various kinds of geologic formations around the country in order to find a suitable location for a pilot repository and operational repositories.
 - b. Technical Alternatives and Generic Environmental Impact Statement. ERDA has published an extensive technical alternatives document and is proceeding with development of the necessary generic environmental impact statement covering waste management with the objective of issuing a draft statement early in 1977 and a final statement late in 1977.
2. NRC is working on waste handling, packaging, transportation, and storage regulations and an associated environmental impact statement with the objective of completing work in 1978.
 3. Interagency Task Force. An OMB-lead interagency task force is evaluating the schedules and the interagency relationships among the five agencies principally involved: ERDA, NRC, EPA, Geological Survey, and CEQ. This group's work has already identified potential obstacles that would prevent

having a repository available when needed. The problems include: (a) sequencing of each agency's activities so that information will be available to others when needed, (b) overlapping functions between NRC and EPA, and (c) continuing inter-agency coordination.

D. Additional Actions for Development and Evaluation

1. Develop a firm plan setting out all major actions which must be taken over the next ten years and when they will occur -- covering all forms of nuclear waste.
2. Develop a clear statement of roles and responsibilities (including solution of overlap in EPA and NRC functions), and develop arrangements for continuing inter-agency coordination.
3. Consider the extension of our domestic waste management plans and solutions internationally, perhaps through one or more of the following:
 - a. Offer to make waste handling and storage technology available to other nations.
 - b. Offer to investigate international waste disposal sites, either independent of or in conjunction with reprocessing arrangements.

This will require consideration of controversial issues such as the storage in one country of wastes resulting from nuclear energy used in another country.