The original documents are located in Box 19, folder "Nuclear Fuel Assurance Act: General (1)" of the Loen and Leppert Files at the Gerald R. Ford Presidential Library.

- Preliminary discussions with Congressional leaders
  - Presidential discussion with selected members — 6/10
  - ERDA discussions with JCAE and staff — 6/10

- Additional Government actions to assure commercial market, particularly for follow-on centrifuge
  - ERDA identifies possible additional actions and submits to Executive Office — 6/16

- Legislation covering alternative selected
  - ERDA submits draft to OMB — 6/16
  - OMB completes clearance process — 6/23
  - Legislation transmitted — 6/30

- Letter agreement (if Alt #1 is selected)
  - ERDA discuss with JCAE — 6/10
  - Obtain JCAE agreement — 6/23
  - Sign agreement — 7/5

- Presidential Message
  - ERDA submits draft to Domestic Council — 6/16
  - Domestic Council gets OMB, NSC, FEA comments, discusses with ERDA by — 6/18
  - Domestic Council submits draft to Theis — 6/19
  - Theis completes his first draft for staff review
  - Draft message for Presidential review
  - Transmit message — 6/30

- Fact Sheet
  - ERDA submits draft to Domestic Council — 6/16
  - Domestic Council gets OMB, NSC, FEA comments — 6/18
  - Domestic Council draft to all parties for comment — 6/19
  - Revised draft completed (for use in briefings) — 6/23
  - Final draft to press office — 6/27

	Date
. Detailed Congressional briefings	6/25

Commercial charge legislation

- ERDA submit draft to OMB	May 27
- OMB clearance completed	June 20
- Dr. Seamans transmits legislation	June 23

Open season decision - Proposed relief from penalties in current utilities' contracts with ERDA for enrichment services.

- ERDA submits to OMB	May 13
- OMB review completed	June 10
- Decision announced by ERDA	June 11

RFP for centrifuge

Environmental Impact statements

. Legislative proposal

. Centrifuge RFP

Policy Issues to be resolved

1. Commercial Prices

2. Open Season

3. Form of "cross guarantee" to pick up UEA customers

4. Permissible share of individual foreign investments, purchases

5. Possible steps to assure market for centrifuge

   - conditional contracts
   - CUP deferral
   - terminations
   - etc.

6. Demand computation (effects of Pu Recycle)

---

7. Time cutoffs

8. Extent of work on add-on plant

PROPOSED STATE DEPARTMENT REPLACEMENT FOR RELEVANT PARAGRAPHS ON PAGE 4

Preventing the Diversion of Nuclear Materials or Un-Controlled Spread of Sensitive Technology

All necessary protective measures to safeguard the use of the products of the plant as well as of sensitive classified technology will be preserved. These include:

-- Application of effective domestic safeguards and physical security measures to the plants and their products.

-- Continued requirements that exports must take place pursuant to appropriate agreements for cooperation and be subjected to safeguards to prevent diversions as well as export licenses.

-- Continued classification and protection of sensitive enrichment technology.

Foreign Investment

Foreign investment in private enrichment ventures will be encouraged, but control will remain with U.S. interests. Foreign investors would not require or have access to classified information. Any proposals for sharing technology would be considered separately and

would be subject to Governmental review and approval.

Environmental Impact, Safety and Anti-Trust

Private ventures wishing to build plants will have to obtain from the Nuclear Regulatory Commission (NRC) a construction permit and an operating license. As a part of its review, the NRC must evaluate environmental, safety and anti-trust considerations as well as assure that control of the proposed new ventures remain in the U.S. -- as now required by the Atomic Energy Act. NRC also will have responsibility for assuring that the plants are appropriately safeguarded. The Justice Department participates in the review of anti-trust considerations.

Equitable Contract Terms

In general, the private enrichers will be expected to accord equitable and comparable terms to both foreign and domestic customers, taking into account discounts for investors as appropriate.

~~Presidential~~ Contracting for Enriching Services

~~Subject to legislative approval,~~ ~~[illegible]~~ Contracting (for enriching services) may begin as soon as private enrichers and ERDA work out the details of specific assurances and arrangements. It is anticipated that such contracts would be contingent upon (Congressional approval of the proposed legislation. All customers holding contracts will be covered by the Presidential assurance that the orders will be filled as services are needed.

LIMITATION ON FOREIGN SHARE IN PRODUCT AND CONTROL FOR PRIVATE URANIUM ENRICHMENT FACILITIES FOR THE UNITED STATES

The Energy Research and Development Administration (ERDA), in coordination with the Department of State (DOS), intends to impose on any private uranium enrichment cooperative agreement the following limitations on foreign participation:

1. No more than approximately 60 percent of total plant equity or product to be allocated to foreign customers as a bloc.

2. No more than approximately 20 percent of plant equity or product to be allocated to any single foreign country.

3. No more than 45 percent voting rights to foreign countries as a bloc.

4. Voting rights in individual foreign countries to be limited to the same proportion of 45 percent as the proportion of their plant equity to 60 percent of total plant equity (e.g., a 20 percent foreign customer would have no more than 15 percent voting rights).

5. U.S. shares to be voted as a bloc, and the bloc U.S. vote be controlled by the majority vote of the U.S. participants' shares.

Such limitations will assure that no single country attains such a large proportion of product as to discourage other foreign participants and that no misleading impression of a "special relationship" will be created. It also assures that the control of any corporation will remain firmly in U.S. hands. It is believed that this will meet the requirements of the Nuclear Regulatory Commission (NRC) that licensing may only be granted to firms not under foreign domination.

These limitations have been informally communicated to UEA, and that organization indicates willingness to be bound by them.

In addition it is planned to permit spot sales of product in excess of the above limitations in the absence of domestic demand.. Proposals

for such sales would be evaluated on a case-by-case basis; arrangements could include provisions for a specific foreign investor to be precluded from importing excess fuel, except for government-approved fuel fabrication services for third countries, and for the investor in question to dispose of excess fuel from the U.S. through equitable commercial arrangements to countries having agreements for cooperation with the United States containing appropriate fuel supply levels.

ANNOUNCEMENTS:

. Timing
. Status of Message
. Opportunity for comment on msg.

AGENDA

1. Legislation
   . Dollar amount
   . How to describe
   . Full faith and Credit
   . Sequencing of legislation
     - Authorization
     - Contract authority for appropriations; diffusion only??
     - 45 day approval.
   . Title of the bill . Precatory language - add?
   . Wording of Bill Analysis
   . Wording of Transmittal letter(impact statements)
2. Issues - Fact sheet, etc.

   . Foreign investment - State and ERDA, not 60-20 limits.
   . Block Voting.
   . State proposals on: Equitable contract terms (legis.?)
     Contracting for enriching services.
   . What really is the size of the growing market(p. 7) (condit?)
   . State question on commercial charge.
   . State question on open season
   . State question on UEA proposal description.
   . How describe US intentions with respect to foreign market (dominant?, Major? Principal?)
   . Cut off date
   . Work on add-on plant
   . Nature of interim contracts with UEA-ERDA

3. Q&A's
   . Drop one on Seamans and Kissinger
   . Do Q&A on why not a formal board like COMSAT.
   . Adding new Q&A's - Need words -- not just thoughts.
4. Status of Economic Impact, Centrifuge RFP. Open Season & Commercial Charge.

5. Sharing Papers
   - Safeguards.
   - NRC Review.

DRAFT

File
Uranium
Enrichment

EYES ONLY

NOTE TO: BOB FRI
JOHN HILL
JIM MITCHELL

SUBJECT: MEETING WITH THE HOSMER NUCLEAR INDUSTRY GROUP

I'm sorry there hasn't been time for everyone to get together in advance to discuss an approach for today's meeting. In the absence of such a meeting, I'm using this note to put down:

. My latest understanding of attitudes in the Hosmer Group.
. Suggestions on themes for the Administration side of the discussion.
. Organization and agenda for the meeting.

Perhaps we can talk for a few seconds before the meeting to make whatever adjustments you think necessary.

Hosmer Group Understanding and Attitudes

. Basically, the group reflects a good bit of the fragementation of views and interests that exists in the diverse groups that make up the association; e.g., utilities, vendors, A-E's. They have not yet found a way to pull together and make positive and constructive compromises. Instead, their views tend to come out as opposition to anything that may adversely effect, even slightly, the interests of any segment of the industry.

. With respect to two substantive issues, George Gleason tells me the Group's understanding is as follows:

- Commercial Charge legislation
  . Opposed strongly by utilities and, probably, by vendors who must(??) eat increased fuel costs under fixed price reactor contracts.
  . No decision on position by group but concensus headed toward strong opposition to Administration proposal.
  . Group sees two possible options:
    - Proposal will die quietly.
    - Proposal might possibly survive if private uranium enrichment legislation passes, but commercial charge legislation will still be opposed by utilities.

- Nuclear Fuel Assurance Act.

.Group discussions have headed toward a consensus that two alternatives are ahead.

- Proposal will die and add-on plant will be approved soon.
- "Compromise" package would be approved, containing Government add-on plant at Portsmouth & authority for some kind of cooperative agreements for centrifuge plants.

Group believes that the Administration was about to give up on its proposal and would soon be making this public!

Gleason reacted with surprise when I told him that
- I have heard no discussion of giving up or a compromise within the Administration, and
- There is a strong view within the Administration that proceeding with one more Government plant(Add-on) would be a de facto end to attempts to achieve private entry.

Gleason urged that an effort be made at today's meeting to get across the Administration's resolve because this is not now perceived widely in the industry.

Suggested Themes for Administration side of discussion

. Restatement of the rationale for and Administration intent of pushing the commercial charge legislation (Perhaps recognizing the opposition of utilities, but indicating broader national interests are involved and overriding).

. Restating the content and rationale of the Nuclear Fuel Assurance Act and emphasizing the resolve of the Administration to see it through.

. Underscoring the need for the nuclear industry to:
  . recognize the common interests of the various groups that comprise the industry.
  . build on those common interests and support courses of action that preserve the promise of nuclear energy in supplying a major share of the nation's energy needs.
  . recognize that the Administration is working hard to help solve problems facing the industry but that
    - neither the industry nor the Administration can do the job alone -- nor will either succeed if they don't join together on some actions.
    - it will be difficult to find grounds for working on problems if the industry opposes actions that are in the overall national interest but which may be slightly adverse to the interests of some parts of the industry.

. That Federal Budget constraints now and in the years ahead are a factor that the industry must take into account when takes its positions. E.g.,

  - Need for restraint is being increasingly recognized on the Hill -- as made clear by the increasing power of the Budget Committees(Muskie and Brock Adams).

  - The Nuclear industry appears to be looking for Government help at many stages in the nuclear fuel cycle.

  - It simply may not be possible for the Federal Government to put up major financing for both the front end (i.e., build another Government add-on plant) and the back-end (i.e., reprocessing, Pu conversion, waste processing, long-term storage).

  - The Industry and the Government may need to reach agreement soon that the Government will get out of the front end of the cycle and focus its attention and limited resources on the back end of the cycle where:

    - problems are more difficult.
    - technology is less well developed and demonstrated.
    - most problems are being raised by nuclear power opponents.
    - where, because of the problems, a Government role may be more appropriate.
    - problems relate more closely to the broad concerns like non-proliferation.

Suggested Organization of Meeting and Agenda

I'd like to say a sentence or two of welcome -- to which Hosmer may want to respond -- and then turn the meeting over to Bob Fri who would be the Chairman of the Administration Group, flanked by Messrs. Hill and Mitchell.

. Mr. Fri could outline purpose and agenda for meeting and seek industry agreement to approach.

. Mr. Fri could outline
  - commercial charge
  - Nuclear Fuel assurance
  - and start on the themes of
    - industry pull itself together
    - industry work with Administration and support proposals now on the Hill.
    - limits of the Federal resources.

. Messrs. Hill and Mitchell join in when ever the mood looks right.

. Give Industry people a chance to speak up after the introductory presentations by Fri, Hill, Mitchell.
. Express willingness to get together again whenever desired.

Any Problems

If the above presents problems, would you please let me know. Thanks.

Look forward to seeing you at 11:30.

Glenn

HR 12387 Nuclear Regulatory Commission Authorization

The Administration supports the necessary authorizations in this bill but objects to the $24.8M increase above the President's budget.

HR 13350 ERDA Authorization

The Administration supports the necessary authorizations in this bill. However, in the case of the $230M add-on for the U.S. Government uranium enrichment plant, the Administration believes the best way to deal with the question of whether the Government or private industry should build the next enrichment plant is in connection with the proposed Nuclear Fuel Assurance Act (HR 8401) which the JCAE now is considering. The Administration would also prefer that the funding of a contingency add-on plant be handled in association with the NFAA.

The Administration objects to the large funding increases approximating $400M, over the President's FY 1977 budget primarily for energy R&D. The Administration considers these add-ons, in all major technologies, excessive and unnecessary in light of the increases already provided in the President's budget and the need to avoid overtaking private sector investments on energy R&D.

[May 1975]

The President feels it is important that we increase production of uranium for domestic + foreign markets. It is perhaps the one biggest item our country has to sell – it is the oil of the future. We are the leading producer of uranium which is a great asset to our balance of payments.

If the President decides to submit a stepped up program of uranium enrichment one of the big questions will be whether there should be an undertaking by the federal govt, private industry, or a combination of both — what is your reaction?

Tiger Teague
Chas. Rosher
Mike McCormick
B. Goldwater Jr.
Mel Price
John Anderson
John Rhodes

Chas. E. Waters - Dr. Union Carbide

Craig Hosmer

Chet Holifield

1. Auth to K WI Corp entity

1. Auth to convert to private corporate entity

Guarantee not to — "Buy out" authy if necessary

1. Buy out auth.
2. Buy out criteria.
3. " " process.

Memo - 5-29-75

John Hill -

Set Legislative Meeting re MWD - So. Cal Ed.
Dual Purpose facility.

Memo to HF - What would pass in Congress.
" re attitudes in Congress.

UEA - 9M SWUS

Craig Hosmer - 5-29-75 2:30 p.m.
avg. 27.5 m. SWUS -
fully needed by U.S. + Foreign customers by 1982-85

technology is known

Lead time - 7 to 8 years in putting in plant
10 years to put in else.

Diffusion plt. - have to start commanding
power now.

Centrifuge route - shorter lead time
- technology not yet proved out.

450 megawatts

3. Alternatives
1. Private industry - not practical - diffusion
plant would be allowed * 3 billion involved
+ bankers wouldn't put up money.
Utilities - backing guarantee -
UEA wants govt. in there to step in
" " to commit itself to stockpile.

Has to get on line on time + if not result hazardous

3 m SWUS
add. cap.
every 8 to 10
months to yr.
2000

2. Seamans - wants govt. to expand by using 3 plant
complex to — SWUS capacity. - Has to
get authority from Congress. No technology

* 3. Hosmer says build UEA plant + bring along
the centrifuge (Goodyear, Exxon, Barnett
Exxon-Nucleonics) would demonstration plants
on centrifuge — *5 billion for stockpile
need

pre-production —

Incentives to build nuclear plants? to come up since 1980's - get them to come in to use uranium from stockpile — to get preproduction

before 3 plts reach capacity

Mike McCormick

John Anderson

Manuel Lujan

Howard Baker

Joe Evins - Tenn.

Mel Price

Bill Minish (Minish) - 785-8000

Reasons

1. No spending of money - no gov't program —

2. Concerns proliferation nuclear power

IEA
May 27

Kissinger - provides sale takes 1 yr or more
so BK supports public involvement.
∃ room [there] for following [illegible] of decis. etc so might
do job [illegible] & keep pressure on [illegible]

Seamans - 3 conditions:
(a) open order [illegible] for nat'l & int'l [illegible]
(b) attempt to move ahead w/ technology +
new technology - instead of UEA plant
(c) Promote commercialization in private
sector as soon as possible.

Expand gov't capacity

Reviewed UEA proposal - easy makes
profit - but - costs greater. Gov't has
3 Oak Ridge - Ky - Portsmouth Ohio -
Expansion [illegible] Portsmouth, Ohio. - but capital
outlay - Cong prefers diffusion process.
private capital will get involved in - the
centrifuge process.

Second diffusion UEA

Jt. Comm. on Atomic Energy - authoriz & approp.

Lynn - Q whether it should be diffusion
versus centrifuge process. - 1st add'l prod.
must be by diffusion technology. (UEA con-
sortium). - Wants to get commitment from private
sector.

Zarb - concurs w/ Lynn - go back to beginning
table on gov't position

CONGRESSIONAL JOINT COMMITTEES, COMMISSIONS, AND BOARDS

Joint Committee on Atomic Energy

Created by Public Law 585, 79th Congress

Room H-403, Capitol. Phone, 225-6171 (Code 180)

—John O. Pastore, Senator from Rhode Island.
Vice Chairman.—Melvin Price, Representative from Illinois.

Com'tee Assign.

Members:
M. Jackson, Senator from Washington.
Symington, Senator from Missouri.
M. Montoya, Senator from New Mexico.
V. Tunney, Senator from California.
H. Baker, Jr., Senator from Tennessee.
P. Case, Senator from New Jersey.
B. Pearson, Senator from Kansas.
L. Buckley, Senator from New York.
Young, Representative from Texas.
Roncalio, Representative from Wyoming.
McCormack, Representative from Washington.
E. Moss, Representative from California.
B. Anderson, Representative from Illinois.
Lujan, Jr., Representative from New Mexico.
Horton, Representative from New York.
J. Hinshaw, Representative from California.

Admin. Assts. & Secs.

Statistical

Capitol

Executive Director.—George F. Murphy, Jr.

Depts.

Joint Committee on Congressional Operations

Created by Public Law 91-510

1628 Longworth House Office Building 20515. Phone, 225-8267 (Code 180)

Placement Office. Phone, 225-6731

Agencies

Chairman.—Jack Brooks, Representative from Texas.
Vice Chairman.—Lee Metcalf, Senator from Montana.
Members:
Robert N. Giaimo, Representative from Connecticut.
James G. O'Hara, Representative from Michigan.
James C. Cleveland, Representative from New Hampshire.
John M. Ashbrook, Representative from Ohio.
Mike Gravel, Senator from Alaska.
Lawton Chiles, Senator from Florida.
Jesse A. Helms, Senator from North Carolina.
Pete V. Domenici, Senator from New Mexico.
Staff.—Eugene F. Peters, executive director; Donald G. Tacheron, director of research; Cynthia K. Watkins, staff administrator. *Office of Placement and Office Management.*—James F. McAllister, administrative officer; Robert J. Kelley, staff assistant; Gerard C. Snow, administrative officer.

44-444 O - 75 - 23

THE WHITE HOUSE

WASHINGTON

May 27, 1975

MEMORANDUM FOR: MAX FRIEDERSDORF

FROM: BOB WOLTHUIS RKW

SUBJECT: Uranium Enrichment Discussions with Chet Holifield and Craig Hosmer

I talked with both men this afternoon and they were delighted that the President is moving ahead in the nuclear power field. They both think it's the only answer on an interim basis until something like solar energy takes its place several decades hence. On approach and organization both felt that the President should rely primarily on the private sector. Although this will require some form of government financing, Hosmer made the recommendation that perhaps the Iranian government would like to pick up part of our financing tab and then have a right in the mid 1980's to draw on the U.S. uranium stockpile.

Holifield and Hosmer are going to get together in the next week and then be back in touch with me.

I have also asked Kyl, Cyr, Sparling, and Cantus to check their jurisdictional committees. George Murphy indicated to John Guthrie, Cantus' aid at ERDA, that a quasi-Federal private approach would not be productive in the short run. He felt it would require Federal effort initially.

THE WHITE HOUSE

WASHINGTON

May 27, 1975

MEMORANDUM FOR: MAX FRIEDERSDORF

FROM: VERN LOEN VL

SUBJECT: Congressional Notifications on Energy, Crime and Uranium - May 27, 1975.

Speaker - Out of office, left word with Joel Jankowsky

O'Neill - Out of town, no answer at office. No answer at 5:30.

Michel - In Illinois. All for taking Congress to task on its failure to act on energy. People want to see President be a strong national leader, building on the Mayaguez performance.
On compensation for crime victims, has real doubts about it.
Will miss the Bi-Partisan Leadership meeting on June 4th because of commitment in Charlotte, North Carolina.

John Anderson - In Bali enroute back from Japan. Left word with Don Wolfensberger of his staff.

Edwards - Enroute to Alabama. All for the President's energy proposals. As for crime victims, is disturbed about such a provision. Feels it puts a premium on crime.

Lou Frey - In Bogota, Columbia. Left word with Toby Harder of his staff.

Ed Hutchinson - Energy problems can be solved better in the free market than by any federal agency program. On compensation to crime victims, feels it would reward the criminal vicariously. Money could be better spent to beef up law enforcement. Never favored concept of federal government being "insurer." Can imagine people setting themselves up for beatings just for financial compensation. Understands that Chief Justice Burger talked to Chairman Rodino, telling him to go

slow on criminal code revisions because some suggested changes are pretty revolutionary. Courts, already overburdened, could face chaos. Rodino agrees. Hungate's proposed Rules of Criminal Procedure (H. R. 6700) is scheduled for House floor consideration next week.

McCormack - Reached in Seattle. Open-minded on uranium enrichment questions. Wants to meet with Jim Cannon next week. Wants to cooperate. He will have basic jurisdiction in House Science and Astronautics Subcommittee. Is working on breeder legislation right now with nuclear plant siting his next priority. Believes legislation can be developed in July and August with hearings in September and passage in October. Agrees with objective of increased production as rapidly as possible.

Devine - Reached in Ohio. Pointed out that Democrats' plan would increase prices at pump also. Would limit compensation of crime victims to dependents of law enforcement officers only. Need tougher judges instead.

THE WHITE HOUSE

WASHINGTON

May 27, 1975

MEMORANDUM FOR: MAX FRIEDERSDORF

FROM: PAT O'DONNELL
BILL KENDALL

SUBJECT: Contacts on Uranium Enrichment and Compensation for Victims of Crime

Senator Fannin--

Uranium- We should push our efforts as strongly as possible in the private sector. Would like to see more than minimal federal participation. Will have more to say after consulting with advisors.

Crime- Generally supportive of compensation for victims of crime, depending upon how far it goes in concept and how much it would cost.

Senator Tower--

Uranium- Should develop our increase in production under private auspices, perhaps with some form of federal incentives.

Crime- This is out of my baliwick, but I would be inclined to follow Roman Hruska's leadership in this area.

Senator McClure--

Uranium- Would rather see the undertaking exclusively private, but the reality of situation is that private sector will not be able to come up with the tremendous investment required. Accordingly, I would support a combined funding by private sources, to extent possible, and federal back-up to get the operation started.

Crime- Gut reaction is to oppose compensation to victims of crime; surprised that Eastland, Hruska and other conservatives are supporting the concept. Will have to consult with colleagues before giving you anything further.

Senator Hugh Scott-

On the oil fee imposition, he is very agreeable to action. Said his comment will be "the Congress hasn't produced enough energy to light a 5-watt bulb". He cautioned President not to be too critical of Congress yet...let the situation get much worse!

Crime- He is not too keen about S-1 feature for compensation to crime victims. It could lead to enormous expenditures... in effect subsidizing crime.

Uranium enrichment: Says he is not an expert. Leans toward combination of private enterprise plus government.

Senator Curtis-

On oil: Great!

On crime: No strong feelings on compensation feature

On uranium: Not an expert, but leans to private enterprise method for production.

Senator Packwood:

He was on the road, but his office says he will issue a statement supportive of the energy measures the President will take.

Senator Griffin-

Unable to reach; left word with personal secretary. He will get back with reactions if he has any.

THE WHITE HOUSE

WASHINGTON

May 28, 1975

MEMORANDUM FOR: MAX L. FRIEDERSDORF

THRU: VERN LOEN VL

FROM: DOUGLAS P. BENNETT DPB

SUBJECT: Conversations Yesterday with Members Regarding Crime and Uranium

CEDERBERG

Crime - Haven't thought too much about it. Worried about the cost.

Uranium - Quasi-government control. Government owns lands. Government should have some hand in production.

MC CLORY

Crime - Haven't thought too much about this, but will. How much money involved? I'd like to know. (He has been focusing on the gun control issue.)

Uranium - Not queried.

PRICE

Crime - Not queried.

Uranium - Talk with Chet Holifield and Craig Hosmer . . . they're the experts. Would not mind private control. Quasi-government control while business is being nursed into it. Must move immediately but business needs to be eased into the responsibility.

BUD BROWN

Crime - Not much for the principle of victim reimbursement.

Uranium - Don't know enough - inclined to go with private sector approach.

SCHNEEBELI

In Rome, Italy. Very good on energy.

CONABLE

Crime - Mixed emotions. Reluctant to guarantee everyone against disaster. Feels it might constitute bad social policy.

Uranium - Agrees with acceleration of production. Feels to meet capital requirements, approach must be quasi-government easing toward private sector control.

Attached is a very rough draft of a potential decision memorandum. It is based on only preliminary information and discussions with the task group. It is far from complete and, as it stands:

- does not necessarily reflect anyone's views.
- has noone's approval
- contains unnecessary information and omits other information that will have to be added.

Therefore, at this point, it is furnished only as a rough outline to get senior advisers' views as to whether the right issue, alternatives, considerations and facts are being assembled.

DRAFT #2 5/29/75

DECISION

MEMORANDUM FOR:

FROM:

SUBJECT: PROVIDING ADDITIONAL U.S. URANIUM ENRICHMENT CAPACITY

The Issue

The issue for your decision is whether to propose legislation which contemplates construction of the next increment of U.S. uranium enrichment capacity (a) by the Uranium Enrichmen Associaties(UEA) in a privately owned plant backed up by the potential for Federal by-out prior to completion, or (b) by a Government owned plant.

Both alternatives contemplet that construction of succeeding enrichment plants would be by private industry, probably with the initial plants subject to the same kind of conditions now proposed for UEA.

None of your advisers believe that you should consider proposing that all future enrichment capacity be in plants owned by the Government or a Government corporation. However, this alternative needs to be kept in mind because (a) it undoubtedly will be considered by the Congress, and (b) such an alternative provides a useful baseline for evaluating the the two alternatives presented for your decision.

Developments since your May 23 Meeting.

Since your last meeting with senior advisers on this subject:

- Negotiations have been conducted with UEA officials and their financial advisers -- which have resulted in a substantially different proposal from that previously discussed by UEA and ERDA. It is discussed under Alt. #1, below.

- The alternatives have been refined further and evaluated.

- More data have been assembled to respond to questions you have raised, including:
  - A comparison of the relative status of diffusion and centrifuge technology. (Tab A)
  - Projected world supply of enriched uranium (Tab B)
  - Projected world demand for enriched uranium(Tab C)
  - Extent of private industry interest in proceeding with centrifuge demonstration plants(Tab D) (To be supplied by ERDA).
- The Congressional Relations staff has assessed the attitudes of Congressional leaders(Tab E - to be supplied by Congressional Relations staff). Potential Congressional acceptance is one of the considerations discussed below in evaluating the alternatives.

The Alternatives

The principal features of the two alternatives are as follows:

- Alt. #1. UEA construction of a free standing 6.5 to 9 million unit diffusion plant. This would be followed by industry construction of succeeding plants (using either diffusion or centrifuge technology, as determined by industry. The arrangement would work as follows:

  - UEA and future enrichment firms would:
    - provide the organization, management, financing, plant site, power, customers.
    - Design,build and operate the plant.
  - ERDA:
    - transfers information on diffusion technology to the enrichers and receives a royalty payment (no new authority needed).
    - supplies and gives warranty for those materials for plant which are available only from the government. Enricher pays for these.
    - reviews and approves design of plant.
    - oversees construction and management, much as it would now if ERDA were going to own the plant.
  - New legislation would be needed to authorize the transfer of ownership of assets and liabilities of the enrichment firm to the Federal Government at any time prior to completion of the plant, with:
    -- either the enrichment firm or the Government able to request the transfer.
    -- with amount of payment depending upon the circumstances -- varying from essentially full repayment of U.S. equity investors funds to no repayment(total loss of equity).
    -- ownership then resting with the Federal government just as it would if the enterprise began with the intent of Federal ownership.

This alternative is described in more detail at Tab E, to which is appended the specific wording of the UEA proposal. (To be supplied by ERDA)

Alt. #2. ERDA would contruct an add-on diffusion plant of up to 5 million units adjacent to its existing 9 million unit plant at Portsmouth, Ohio. This would be followed by private industry construction of centrifuge plants, starting with competitive proposals from firms that would be prepared to build 1 million unit demonstration plants which are capable of being expanded to 3 million units. Depending upon the speed with which these plants could be built and production begun, it may be possible to reduce the size of the add-on ERDA-owned diffusion plant--perhaps even to zero. This approach would work as follows:

- Legislation and appropriations would be requested to permit ERDA to proceed with design, long-lead time procurement, and if necessary, construction of the add-on plant.
- For the centrifuge followon plants, the overall approach would be much the same as that outlined for private enrichers under alternative #1.
- Legislation would be needed to authorize the transfer of ownership.

This alternative is discussed in more detail at Tab G (to be supplied by ERDA).

Considerations bearing upon your Decision

A number of considerations are essentially equal with respect to either alternative and need not be considered further here. These include:

- The date when the next increment of capacity must be on line (now estimated at 1983).
- Nuclear materials safeguards(non-proliferation) in terms of both the physical security of the plant and Federal control over exports.
- Impact on the Government's stockpile of enriched uranium.
- Customers for the next increment of capacity which are expected to be predominantly foreign.
- Risk of not having the next increment of capacity on line when needed.
- Opposition from nuclear power opponents -- who may try to prevent any new increment of capacity as another way of slowing nuclear power(but who will be vulnerable to the answer that failure to build means dependence on foreign sources of enriched uranium).

Other considerations are important and the relationship to each alternative is discussed below:

1. Date when the U.S. will be perceived by potential foreign customers as a reliable supplier of uranium enrichment services. An early date is important to the nation's ability to obtain a large share(target 50%) of the foreign market. There are some differences between the two proposals for the next increment--in terms of when all arrangements will be firm. In the case of alternative #1, the foreign perception would depend heavily on how it was explained. The steps necessary and probable completion dates for the two alternatives are as follows:

	Alt #1 UEA	Alt #2 ERDA
. Propose legislation	6/30	6/30
. Congressional authorization		
. UEA obtain equity partners		na
. UEA obtain foreign equity and customers		na
. Obtain committment for electrical power		
. UEA obtain domestic orders		
. Plant design completed		
. NRC construction license		na
. Construction begins		
. NRC operating license		na
. Production begins		

In summary,
. Under alternative 1,.....

. Under alternative 2,....

2. Impact on the ability to achieve(and the timing) the objective of having indsutry build and operate succeeding increments of enrichment capacity.

Under alternative 1,....

Under alternative 2,....

3. Federal Budgetary impact(Budget authority and outlays). Tab H (to be supplied by OMB and ERDA) contrasts the budgetary impact of the two proposals over the next ____years. Briefly,

Under alternative 1,....

Under alternative 2,.....

4. Chances of Congressional acceptance of the proposal, and the probable impact of the timing of approval.

Under alternative 1,....

Under alternative 2,....

5. Ability to accommodate committments to foreign nations to permit non-discriminatory participation in the financing of enrichment capacity.

Under alternative 1,....

Under alternative 2,....

6. The risks and how they are shared from the viewpoint of:
- Domestic utility customers...
- Foreign customers...
- Domestic equity partners...
- Potential financiers for debt...
- Potential enrichers....

(These considerations may be worked in at other points in the memo)

7. Other Foreign Policy Considerations(if any -- to be identified by NSC staff by 5/29)

Other Actions Affecting Uranium Enrichment that must be taken by the Administration

. Submission of Commercial charge legislation...

. Decision on "open season" and conditions for escaping from enrichment contracts with ERDA.

Recommendations

_____, _____, _____and _____recommend Alternative 1 because.....

_____, _____, _____and _____recommend Alternative 2 because.....

Decision

_____Alt #1. _____Alt #2.

TABS

A - Comparison of status of technology centrifuge and diffusion	(attached)
B - Projected world supply of enriched uranium	(attached)
C - Projected world demand for enriched uranium	(attached)
D - Extent of private industry interest in proceeding with centrifuge demonstration plants now	(to be supplied by ERDA)
E - Assessment of Congressional situation	(to be supplied by Max Friedersdorf
F - Description of Alternative #1 - UEA builds next increment, private industry succeeding units.	(to be supplied by ERDA)
Addendum to "F" - UEA's specific proposal	
G - Description of Alternative #2 - ERDA builds next increment, private industry succeding units.	(to be supplied by ERDA)
H. Federal Budgetary Impact	(to be supplied by OMB and ERDA)

TABA

1. Question

Compare the status of gas centrifuge technology to gaseous diffusion insofar as its present commercialization potential is concerned.

Answer

With over 30 years of large-scale operating experience and development, the gaseous diffusion process has proved to be a highly reliable and economical method of enriching uranium. The gas centrifuge process which has been under development for 15 years and is now approaching production capability appears to be economically competitive and has been shown to have certain advantages in commercialization potential.

Plant Size

Gas centrifuge plants can be economically built in smaller capacities than gaseous diffusion. This results from a higher degree of separation inherent in individual gas centrifuge equipment and the ability to more readily scale the plant to desired size. Gaseous diffusion, on the other hand, requires many stages to achieve enrichment and is dependent on large equipment to achieve economy. The scaling of gas centrifuge plant size permits consideration of many smaller regional gas centrifuge enrichment plants providing greater flexibility. Provided that a sound centrifuge sub-supplier industry has been established, construction of small increments of capacity may permit "tracking" the enriching service demand.

Power Requirements

The gas centrifuge process is shown to use about 10 percent of the electric power consumed by the same capacity gaseous diffusion enrichment plants. This results from the fact that the gas centrifuge process is inherently more energy efficient. The lower electric power requirement allows locating gas centrifuge enrichment plants without major dependence on large electric power systems and sources. Projections of operating costs indicate that gas centrifuge plant operating costs will be largely under the control of the operator. Because of high power consumption, a large portion of gaseous diffusion plant operating cost will be dependent on utility control.

Technology Potential

The capacity and performance of gas centrifuge equipment is currently limited by materials, fabrication techniques and the understanding of gas centrifuge theory. Further developments are expected to increase the capacity and performance of individual centrifuges. These improvements could be incorporated in operating enrichment plants during normal replacement of centrifuges. Gaseous diffusion technology, although not exhausted, is more mature and by its nature is more difficult and expensive to incorporate into operating plants.

Patent and Proprietary Incentive

Since the gas centrifuge process is new and has large potential for improvements, patent and proprietary opportunities are great. These opportunities are part of the reasons that industry participants are considering gas centrifuge for uranium enriching and serve to encourage further industrial entry into the field of gas centrifuge fabrication. In the gaseous diffusion process, the Government has developed to a highly sophisticated level and is the sole fabricator of key elements of the process. Therefore, the patent and proprietary opportunities in gaseous diffusion enriching are limited.

Reliability and Demonstrated Performance

Adequate reliability and performance of production type gas centrifuges has been demonstrated in test facilities. These tests will continue with current and advanced centrifuges in support of new enrichment plants. The gaseous diffusion process with 30 years of operating experience has demonstrated high reliability and performance. A significant part of the operating cost of gas centrifuge enriching plants is the replacement and repair of the high speed centrifuges, thus the cost of enrichment in these plants is sensitive to the centrifuge operating life. Operation of gas centrifuge enriching plants would assure a manufacturing market for centrifuge component suppliers. The projected gas centrifuge enriching plant economics are based on short operating life centrifuges. If the plant operator can increase the life by reasonable operating changes or improved centrifuges, the economics would improve.

Risk

The overall risks associated with new enrichment plants are higher with the gas centrifuge process since industry has never been called upon to supply large quantities of equipment and materials used in manufacturing gas centrifuges. On-going ERDA programs are providing industry with the technology that has been developed and assisting in promoting the expansion of necessary supporting industries until the market is established. The gas centrifuge process cost projections assume conservative operating life for centrifuges tending to minimize the risk of higher operating costs. More ERDA effort is currently directed toward gas centrifuge manufacture consistent with the development program. For a new, large gaseous diffusion enrichment plant, ERDA assistance would be provided to minimize the risk.

General

Considering the major advantages, it appears that the gas centrifuge process provides a more likely ability to achieve a competitive industry by permitting more entrants, more regional participation, more industrial involvement (including more labor), with reduced electric power constraints. The "spin-off" of new technologies such as high speed rotating components, balancing procedures and special fabrication techniques associated with the gas centrifuge can be of significant benefit to industry. The availability of this technology can serve to encourage industrial entry as a supplier. The use of the technology without compromizing security can serve to upgrade the Nation's overall industrial capability.

2. Question

What is ERDA's current estimate of the foreign and domestic enrichment services market?

Answer

Based on the April 1975 IEA forecast of world-wide demand, the requirements for enrichment services in millions of SWU with plutonium recycle and a 0.25% tails assay are given below. The U.S. requirements and the foreign market currently under ERDA enrichment services contracts are also shown, resulting in a net foreign requirement.

Requirements	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
World-wide	10	12	14	19	25	28	31	34	38	41	47	52	58	64
U.S.	5	7	7	9	11	12	13	16	19	21	24	26	29	34
Foreign Supplied by ERDA	4	4	4	6	8	9	11	10	10	11	11	10	10	10
Net Foreign	1	1	3	4	6	7	7	8	9	9	12	16	19	20

The U.S. requirements for enrichment services from new domestic enrichment capacity in millions of SWU with plutonium recycle and a 0.30% tails assay is given below.

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
U.S. Requirements	--	--	--	--	--	--	--	0.2	0.7	3.2	5.0	8.3	11.6	15.6

TAB B

3. Question

What is the present status of foreign enrichment supply? What information do we have on foreign customer preferring U.S. versus foreign supply sources?

Answer

Based on the April 1975 IEA forecast, the projected enrichment services from foreign plants in millions of SWU are given below. The U.S.S.R. capacity under contract is also included in the totals. The net foreign requirements from Question 2 are deducted from the total foreign capacity, resulting in a projected excess capacity. Additional foreign capacity is then included, resulting in a total projected excess capacity.

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
U.K.	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
URENCO	--	--	0.2	0.5	0.8	1.2	1.8	2.7	4.5	7.0	10.0	10.0	10.0	10.0
Eurodif-I	--	--	--	--	3.1	6.5	8.4	10.8	10.8	10.8	10.8	10.8	10.8	10.8
U.S.S.R.	0.5	2.2	2.6	3.1	4.1	4.1	3.1	3.1	3.1	2.1	2.1	2.1	2.1	2.1
Subtotal	0.9	2.6	3.2	4.0	8.4	12.2	13.7	17.0	18.8	20.3	23.3	23.3	23.3	23.3
Net Foreign Requirements	1	1	3	4	6	7	7	8	9	9	12	16	19	20
Excess Capacity	--	--	--	--	2	5	7	9	10	11	11	7	4	3
Additional Foreign Capacity														
Eurodif-II	--	--	--	--	--	--	--	--	3.0	6.5	8.5	10.0	10.0	10.0
South Africa	--	--	--	--	--	--	--	--	--	--	--	5.0	5.0	5.0
Japan	--	--	--	--	--	--	--	--	--	--	5.0	5.0	5.0	5.0
Total Excess Capacity	--	--	--	--	2	5	7	9	13	17	24	27	24	23

The foreign demand for enrichment services could increase due to lack of plutonium recycle, a reduced enrichment plant tails assay or a growth in the foreign demand for nuclear power. Moreover, working inventories and stockplies of enriched uranium to backup the operation of the foreign enrichment plants are unknown; these inventories and stockpiles could add to foreign requirements.

TMSC

A domestic private enricher must compete with foreign suppliers by offering more competitive contract terms and assured reliable supply of enrichment services. Since the U.S. technology, particularly for the gaseous diffusion process, is well advanced and proven, it should have a tendency for lower costs, other factors being equal. The U.S. has also been nondiscriminatory in the treatment of all customers, which has assisted in promoting sales of U.S. enrichment services throughout the world. A similar policy for domestic private enrichers may be assumed for the future.

Only about 2.7 million SWU of the capacity of the URENCO plant is committed. An attractive feature claimed by the owners of the plant is that only five years are needed to expand the capacity, so that demand may be closely tracked. The Eurodif-I plant is fully committed. The Eurodif-II plant has not begun to be committed; it is beginning to go through the French political process. A domestic private enricher could affect this plant more than the URENCO or Eurodif-I plants. The South African plant is tied to the South African supply of feed. Since feed may be in short supply on the world market, the South African plant may penetrate the enriched uranium market. It is unknown what further market penetration the U.S.S.R. will make.

Addendum to TAB E

Loose 4th

5/28/75
(to Jessie)

A "transfer of ownership" involves assumption by the USG of the assets and liabilities of UEA and the controlling rights of UEA's domestic equity holders. This event may be triggered by the request of either UEA or the USG at any time prior to the enrichment plant achieving commercial operation. In the event of a "transfer of ownership," the following basis shall be employed to determine the appropriate degree of payment for USG assumption of such domestic UEA equity rights:

Fair compensation (as later defined) shall be paid by the USG for such rights in the event, as determined by the USG, that the proximate cause of the request for transfer of ownership was

1. failure of warranted USG technology to operate so as to permit the plant to achieve commercial operation within the agreed-upon time period and costs despite the best efforts of both UEA and the USG.

2. failure of necessary governmental licenses to be obtained in a timely manner so as to permit the plant to achieve commercial operation within the agreed-upon time period and costs despite the best efforts of both UEA and the USG.

3. interposition by the USG for national security reasons in the matter of contractual relationships between UEA and previously approved customers so

as to prevent the service of such customers to a degree which significantly threatens the economic viability of the project.

4. a matter of similar character as determined by the USG.

No compensation shall be paid by the USG for such rights in the event, as determined by the USG, that the proximate cause of the request for transfer of ownership was

1. gross mismanagement, or arbitrary and capricious action by UEA which significantly threatens the economic viability of the project or the reasonable reliability or assurance of supply to the customers, and following failure to correct the situation upon request by the USG.

2. a matter of similar character as determined by the USG.

In all other cases, the USG shall determine the appropriate degree of compensation for such rights recognizing the degree or lack thereof of UEA to reasonably foresee or deal with the particular situation.

In any event, the preliminary determination (for fair, modified or no compensation) shall be made by ERDA and the basis thereof reviewed with UEA. Before becoming final, the determination shall be submitted by ERDA to the JCAE for a 90-day period during which Congress is in session.

The determination shall then become final unless, during such period, the JCAE shall dissent from such preliminary determination by recommending an alternative basis for such settlements to the Congress in the form of a joint resolution shall be affirmatively acted upon by the Congress during the then current session of the Congress.

THE WHITE HOUSE

WASHINGTON

May 27, 1975

MEMORANDUM FOR: MAX FRIEDERSDORF

FROM: VERN LOEN

SUBJECT: Congressional Notifications on Energy, Crime and Uranium - May 27, 1975.

Speaker - Out of office, left word with Joel Jankowsky

O'Neill - Out of town, no answer at office. No answer at 5:30.

Michel - In Illinois. All for taking Congress to task on its failure to act on energy. People want to see President be a strong national leader, building on the Mayaguez performance.
On compensation for crime victims, has real doubts about it.
Will miss the Bi-Partisan Leadership meeting on June 4th because of commitment in Charlotte, North Carolina.

John Anderson - In Bali enroute back from Japan. Left word with Don Wolfensberger of his staff.

Edwards - Enroute to Alabama. All for the President's energy proposals. As for crime victims, is disturbed about such a provision. Feels it puts a premium on crime.

Lou Frey - In Bogota, Columbia. Left word with Toby Harder of his staff.

Ed Hutchinson - Energy problems can be solved better in the free market than by any federal agency program. On compensation to crime victims, feels it would reward the criminal vicariously. Money could be better spent to beef up law enforcement. Never favored concept of federal government being "insurer." Can imagine people setting themselves up for beatings just for financial compensation. Understands that Chief Justice Burger talked to Chairman Rodino, telling him to go

slow on criminal code revisions because some suggested changes are pretty revolutionary. Courts, already overburdened, could face chaos. Rodino agrees. Hungate's proposed Rules of Criminal Procedure (H. R. 6799) is scheduled for House floor consideration next week.

McCormack - Reached in Seattle. Open-minded on uranium enrichment questions. Wants to meet with Jim Cannon next week. Wants to cooperate. He will have basic jurisdiction in House Science and Astronautics Subcommittee. Is working on breeder legislation right now with nuclear plant siting his next priority. Believes legislation can be developed in July and August with hearings in September and passage in October. Agrees with objective of increased production as rapidly as possible.

Devine - Reached in Ohio. Pointed out that Democrats' plan would increase prices at pump also. Would limit compensation of crime victims to dependents of law enforcement officers only. Need tougher judges instead.

THE WHITE HOUSE

WASHINGTON

May 28, 1975

MEMORANDUM FOR: MAX L. FRIEDERSDORF

THRU: VERN LOEN

FROM: DOUGLAS P. BENNETT DPB

SUBJECT: Conversations Yesterday with Members Regarding Crime and Uranium

CEDERBERG

Crime - Haven't thought too much about it. Worried about the cost.

Uranium - Quasi-government control. Government owns lands. Government should have some hand in production.

MC CLORY

Crime - Haven't thought too much about this, but will. How much money involved? I'd like to know. (He has been focusing on the gun control issue.)

Uranium - Not queried.

PRICE

Crime - Not queried.

Uranium - Talk with Chet Holifield and Craig Hosmer . . . . they're the experts. Would not mind private control. Quasi-government control while business is being nursed into it. Must move immediately but business needs to be eased into the responsibility.

BUD BROWN

Crime - Not much for the principle of victim reimbursement.

Uranium - Don't know enough - inclined to go with private sector approach.

SCHNEEBELI

In Rome, Italy. Very good on energy.

CONABLE

Crime - Mixed emotions. Reluctant to guarantee everyone against disaster. Feels it might constitute bad social policy.

Uranium - Agrees with acceleration of production. Feels to meet capital requirements, approach must be quasi-government easing toward private sector control.

DECISION MEMO DRAFT #3
5/30/75

This draft is another step in the direction of excessive immersion into detail that is undesireable for the draft that we must circulate to senior staff later today. Please think about ways of reducing the complexity and length.

Timetable:

. Late today - distribute to senior staff here and by DEX to senior staff traveling with the President.

. Monday - 9AM - Comments due back.

. Monday - Meeting of principals, if necessary.

. Tuesday AM - Type final memo.

DRAFT #3 5/30/75

DECISION

MEMORANDUM FOR:

FROM:

SUBJECT: PROVIDING ADDITIONAL U.S. URANIUM ENRICHMENT CAPACITY

Issue

The issue for your decision is whether ~~you should propose that~~ the next increment of uranium enrichment capacity in the U.S. -- ~~which all agree must use~~ utilizing diffusion technology -- should be:

- A government-owned plant financed by ERDA, or
- A privately-owned plant financed, built and operated by the Uranium Enrichment Associates (UEA), ~~backed up by~~ with a Federal committment to ~~take over~~ buy out the plant if necessary prior to the time of its commercial operation.

Major Areas of Agreement

All ~~of~~ your advisers agree that:

- firm Administration committments must be made now to early construction of the next increment of capacity and to achieve~~ing~~ a private, competitive enrichment industry at the earliest possible date.
- ~~the~~ a legislative proposal covering the next increment of capacity (diffusion) should also provide for follow-on increments to be built by industry, ~~probably using~~ centrifuge technology, and a Federal back-up arrangement like that now proposed by UEA including demo prototypes should be proposed to the Congress.
- the legislative proposal should also authorize increasing the price of ERDA's enrichment services to a level more nearly comparable to a commercial rate (from the current $53 per unit to approximately $75).
- you should not consider proposing that all future enrichment capacity be in plants owned by the Government or a Government corporation, but that this alternative needs to be kept in mind because (a) it undoubtedly will be considered by the Congress, and (b) it provides a useful baseline for evaluating the alternatives now presented for your decision.

Developments since Your May 23 Meeting.

. ~~UEA has modified its proposal substantially~~. Discussions were conducted with UEA by an ERDA-FEA-Executive Office team, ~~focusing heavily on the weaknesses in the earlier UEA proposal which were identified by Dr. Seamans~~. A new UEA proposal is in hand which overcomes ~~those~~ previous weaknesses, and ~~which~~ provides a basis for a legislative proposal covering future increments of capacity built by industry--not just the 4th plant.

. The two alternatives have been refined and evaluated.

. More data ~~have~~ had been assembled to respond to questions you have raised, including:
  . A comparison of the relative status of diffusion and centrifuge technology (Tab A).
  . Projected world supply and demand for enriched uranium (Tab B).
  . Extent of private industry interest in proceeding with centrifuge demonstration plants (Tab C) (To be supplied by ERDA).

. The Congressional Relations staff has assessed the attitudes of Congressional leaders (Tab D - to be supplied by Congressional Relations staff). Potential Congressional acceptance is one of the considerations discussed below in evaluating the alternatives.

Alternatives

The principal features of the two alternative proposals are as follows:

. Alt #1. ERDA would construct a $1.2 billion diffusion plant with a capacity of up to 5 million units as an add-on to its existing 9 million unit plant at Portsmouth, Ohio. This would be followed by private industry construction of centrifuge plants, starting with competitive proposals from 3 or 4 firms which would be prepared to build 1 million unit demonstration plants capable of being expanded to 3 million units or more. This alternative would include the following:

  - Request to Congress for:
    . Authorization and appropriations (beginning in FY76) for construction of the $1.2 billion add-on diffusion plant.
    . Authorization for Federal Government back-up arrangements for the centrifuge plants like those now proposed by UEA for the diffusion plant--which back-up arrangements are discussed below. (This facet identical to Alt. #2).
    . Authorization for Commercial charge for ERDA services (identical to Alt. #2).
    . An ERDA policy which allows domestic utilities to delay or cancel contracts, without penalty, for purchase of uranium enrichment services.

  (To be expanded as necessary by ERDA)

  This alternative is discused in more detail at Tab E.

. Alt #2. UEA would construct a free-standing 6.5 to 9 million unit diffusion plant. This would be followed by industry construction of succeeding plants, probably using centrifuge technology, and with the same kind of backup Government arrangements now proposed for UEA's diffusion plant. This arrangement would include:

- A letter agreement with UEA signed by ERDA under existing authority which would permit UEA to proceed about July 1 toward completing financial and other arrangements leading to construction of the 4th plant, assuming Congress approves the approach discussed below.

- UEA, and other future enrichment firms would:
  . provide the organization, management, financing, plant site, power, customers.
  . Design, build and operate the plant.

- ERDA:
  . Provides information on diffusion technology to the enrichers and receives a royalty payment (no new authority needed).
  . Sells and gives warranty for those materials for plant which are available only from the government.
  . Reviews and approves design of plant.
  . Oversees construction and management, ~~much~~ as it would ~~now~~ if ERDA were going to own the plant.

- New legislation would be needed to authorize the transfer of ownership of assets and liabilities of UEA and future enrichment firms to the Federal Government at any time prior to completion of the plant, with:
  -- either the enrichment firm or the Government can request the transfer.
  -- with amount of payment depending upon the circumstances -- varying from essentially full repayment of U.S. equity investors funds to no repayment (total loss of equity).
  -- ownership then resting with the Federal Government just as it would if the enterprise began with the intent of Federal ownership.

- ERDA would maintain a tight policy with respect to relieveing domestic utilities from current contracts for enriched uranium (so-called "open season") -- so as to (a) encourage potential new enrichment customers to go to UEA rather than pick up contracts that are made cheap by waiving penalties, and (b) avoid providing another example of liberal government approaches which might further encourage utilities to prevent government rather than industry construction of new capacity.

This alternative is described in more detail at Tab F to which is appended the new UEA proposal. (To be supplied by ERDA.)

Considerations bearing upon your Decision

A number of considerations are essentially equal with respect to either alternative and need not be considered further here. These include:

- The date when the next increment of capacity must be on line (now estimated at 1983).
- Nuclear materials safeguards (non-proliferation) in terms of both the physical security of the plant and Federal control over exports.
- Impact on the Government's stockpile of enriched uranium.
- Customers for the next increment of capacity which are expected to be predominantly foreign.
- Risk of not having the next increment of capacity on line when needed.
- Opposition from nuclear power opponents -- who may try to prevent any new increment of capacity as another way of slowing nuclear power (but who will be vulnerable to the counter argument that failure to build means dependence on foreign sources of uranium enriched services.
- The committment to permit foreign investment in an enrichment plant on a non-discriminatory basis.

Other considerations are important and the relationship to each alternative is discussed below:

1. Date when the U.S. will be perceived by potential foreign customers as a reliable supplier of uranium enrichment services. An early date is important to the Nation's ability to obtain a large share (target 50%) of the foreign market. Your June 30 announcement will be an important signal. Beyond that, there are some differences in timing between the two proposals for the next increment.

   . Under Alternative 1 (Government Plant), Congressional review is required of any ERDA proposal to resume firm contracting with foreign and domestic customers for enrichment services. Congressional authorization of a new Government enrichment plant project is also required. Assent to the first is not likely to be given without positive action on the other. Thus, customer assurance of U.S. supply would be strong upon Congressional passage of the project authorization which, unless rejected be Congress, probably could be expected in the late summer or early fall of this year.

   . Under Alternative 2 (UEA Plant), Congressional authorization of ERDA's ability to enter into a support and take-over arrangement with UEA would be required. An initial high level of customer assurance would be obtained when the Congressional action is taken which, unless rejected by Congress, probably can be late in this session of Congress -- possibly one or two months later than under Alternative 1 because it is a more novel approach. Any uncertainty from this delay would be offset to some extent by the planned July 1 letter contract.

In addition to the probable initial one or two month time differentital, however, the UEA approach involves an additional period of six months to a year during which the project, as originally conceived, may fail to achieve the intended full degree of organization. During this period, UEA will be firming up its contracts, customers, partners, power supply and initial short-term financing. Should serious difficulties arise in any of these areas a significant modification of the project might be required. These risks act to reduce customer confidence. Other major milestones of similar significance which occur subsequently include the anti-trust review, construction permit, arrangement of long-term financing, and operating license. However, it is in recognition of such risks and issues that the UEA approach is structured as equivalent to a joint ERDA-UEA project in the initial phases with an ERDA take-over right should the project falter with respect to such key characteristics. Thus customers should be assured of supply, following Congressional authorization of tha approach, of either a successful UEA plant or of UEA's responsibilities taken over by ERDA and thus also leading to an assured U.S. source of supply.

2. Impact on the ability to achieve (and the timing) the objective of having industry build and operate succeeding increments of enrichment capacity.

. Under Alternative 1, the major step toward commercialization enrichment services would be deferred, the policy of the past three years that the next increment of capacity would be built by private industry would be reversed -- with loss of momemtum and uncertainty as to whether future attempts to achieve will be taken seriously. (UEA would fail.) Proceeding now with a government plant will mean that the current opportunity for a private venture will be lost. Furthermore, the inertia now present will reappear when the next opportunity emerges. At that time, private entry will be even more difficult because of the need to use new (centrifuge) technology.

. Under Alternative 2, a major step toward private entry would have been taken, including the development of Congressional attitudes. Uncertainties specifically or uniquely associated with the centrifuge approach would still remain for later resolution but this signal would be clear that future increment would be at private industry initiative.

3. Federal Budgetary impact (Budget authority and outlays).
The table at Tab G contrasts the budgetary impact of the two proposals over the next 15 years. Briefly,

. Under Alternative 1, net ERDA outlays through FY 1990 would be $508 million, but net ERDA outlays would be $761 million in the short term -- through FY 1981.

. Under Alternative 2, net ERDA outlays through 1990 would be$245 million, but ERDA would hold resalable assets(in the form of enriched uranium) with an acquisition cost of $300 million which would sold around 1990. These figures exclude revenues to the U.S. through 1990 in the form of income tax payments by UEA($175 million) and royalty payments ($140 million). the contingent "buy out" feature might well require $1.5 billion of contract authority(BA) initially, but the outlay projection would be zero.

4. Chances of Congressional acceptance of the proposal.

. Under Alternative 1, some members of Congress could argue that private initiatives, as represented by UEA, were being thwarted and should be given an opportunity to proceed. The likely outcome is clear Congressginal support, however, since assent would ensure early progress towards U.S. capacity expansion.

. Under Alternative 2, a sizable Congressional group might well oppose elements of the Government support and take-over arrangement on numerous grounds. While the proposal is designed to minimize substantial grounds for objection, there are many who would still prefer Government rather than private construction. The likely outcome is less certain than under Alternative 1. On balance, however, it is believed that the proposal would be approved, although possibly only after extended debate.

5. The question of the optimum size for the next diffusion plant.

. Alternative 1 (ERDA plant) assumes that a single 5 million unit plant would be an adequate bridge to private centrifuge plants, but this is not assured -- leaving open the possible need for an additional add-on or free standing Government diffusion plant.

. Alternative 2 reflects UEA's assessment of the market, technoloy, and diffusion plant economics led to a conclusion that a 9 million unit diffusion plant should be built, but UEA has agreed to begin with a 6.5 million unit plant if market efforts justify only this level -- with the understanding that it would be expanded to 9 million.

6. Impact on centrifuge commercialization.

. Under Alternative 1, centrifuge commercialization action might be somewhat deterred by the example of UEA's failure to be able to proceed despite continued Government assurance that the next increment of capacity would be private. On the other hand, ERDA's add-on plant at an existing site could be sized to a minimum level necessary to sustain contracting with current customers and leave a maximum and early market for centrifuge entrepreneurs.

. Under Alternative 2, the existence of one group of U.S. firms already in the market, and the successful addressing of many commercialization issues, might spur centrifuge entrepreneurs to more vigorous efforts to enter the market at an early date. On the other hand UEA's larger stand-alone plant capacity might absorb additional market opportunities and leave an initially smaller market size open for centrifuge competition. Because of rapid market growth, the time period of delay in market availability, relative to Alternative 1, should not exceed 1 year.

7. The risks and how they are shared.

. Under Alternative 1, there is a greater tendency for the USG to absorb risks relative to risks to be assumed by customers and to reflect these risks in enrighment charges. However, there continue to be questions as to the ability of any Government charge process to fully recover all appropriate costs.

. Under Alternative 2, USG risks and responsibilities are reduced; larger risks will be borne by utility customers through contract obligations which are more commercial in nature than current Government contracts; foreign debt and equity sources and domestic equity sources will assume risks associated with project management and plant operation.

8. Other considerations (To be discussed at 2PM Friday meeting)

. Complexity of management arrangements for Alt. #2.
. Government risk of ending up with 2 nuclear power plants.
. ???

9. Foreign Policy Considerations (See draft supplied by Dave Elliott)
- Next page.

Dave Gill: H

8.

Foreign Policy Considerations

The major nuclear supplier countries have been meeting at U.S. request for the purpose of coordinating their respective nuclear export policies, with an objective of strengthening these policies to control those nuclear materials and technologies which could lead to the proliferation of nuclear weapons. Two areas of agreement among all suppliers are the necessity of (1) precluding the use of the plutonium derived from spent reactor fuel for developing so-called peaceful nuclear explosives (the Indian excuse) and (2) requiring adequate physical security to foreclose acquisition of strategic nuclear materials by terrorist groups. The mechanism by which the U.S. will ultimately impose these new conditions is through amendment of the bilateral agreements for cooperation with recipient countries (or immediately through any new agreements, such as with Iran). In an interim period, lasting possibly several years, we may well have to impose these conditions through the fuel contracts.

There have been recent cases where the U.S.G. has intervened to alter the terms of U.S. nuclear fuel contracts to prospective foreign customers in order to assure more equitable distribution during scarcity and to avoid acquisition of excess fuel which could subsequently be brokered. Because nuclear fuel is an energy source of growing importance, the U.S.G. may well want to maintain some political control of its world distribution as part of our energy strategy.

Alternative # 1

The imposition of foreign-policy related controls over nuclear fuel will be particularly important over the next few years and a government enrichment plant will provide the U. S. G. with the maximum flexibility in exercising such controls.

Alternative # 2

Some control may be possible through a private enrichment plant, augmented by advisory dealings with the export licensing agency (NRC). However, flexibility is obviously less and it may be considered unfair by the private owner to introduce non-commercial considerations into his business.

Recommendations

_____, _____, _____and _____recommend Alternative 1 because.....

_____, _____, _____and _____recommend Alternative 2 because.....

Decision

_____Alt #1. _____Alt #2.

TABS

A -	Comparison of status of technology centrifuge and diffusion	(attached)
B -	Projected world supply and demand for enriched uranium	(draft attached but to be rewritten)
C -	Extent of private industry interest in proceeding with centrifuge demonstration plants now	(to be supplied by ERDA)
D -	Assessment of Congressional situation	(to be supplied by Max Friedersdorf)
E -	Description of Alternative #1 - UEA builds next increment, private industry succeeding units.	(to be supplied by ERDA)
	Addendum to "F" - UEA's specific proposal	
F -	Description of Alternative #2 - ERDA builds next increment, private industry succeeding units.	(to be supplied by ERDA)
G -	Federal Budgetary Impact	(to be supplied by OMB and ERDA)

TAB A

1. Question

Compare the status of gas centrifuge technology to gaseous diffusion insofar as its present commercialization potential is concerned.

Answer

With over 30 years of large-scale operating experience and development, the gaseous diffusion process has proved to be a highly reliable and economical method of enriching uranium. The gas centrifuge process which has been under development for 15 years and is now approaching production capability appears to be economically competitive and has been shown to have certain advantages in commercialization potential.

Plant Size

Gas centrifuge plants can be economically built in smaller capacities than gaseous diffusion. This results from a higher degree of separation inherent in individual gas centrifuge equipment and the ability to more readily scale the plant to desired size. Gaseous diffusion, on the other hand, requires many stages to achieve enrichment and is dependent on large equipment to achieve economy. The scaling of gas centrifuge plant size permits consideration of many smaller regional gas centrifuge enrichment plants providing greater flexibility. Provided that a sound centrifuge sub-supplier industry has been established, construction of small increments of capacity may permit "tracking" the enriching service demand.

Power Requirements

The gas centrifuge process is shown to use about 10 percent of the electric power consumed by the same capacity gaseous diffusion enrichment plants. This results from the fact that the gas centrifuge process is inherently more energy efficient. The lower electric power requirement allows locating gas centrifuge enrichment plants without major dependence on large electric power systems and sources. Projections of operating costs indicate that gas centrifuge plant operating costs will be largely under the control of the operator. Because of high power consumption, a large portion of gaseous diffusion plant operating cost will be dependent on utility control.

Technology Potential

The capacity and performance of gas centrifuge equipment is currently limited by materials, fabrication techniques and the understanding of gas centrifuge theory. Further developments are expected to increase the capacity and performance of individual centrifuges. These improvements could be incorporated in operating enrichment plants during normal replacement of centrifuges. Gaseous diffusion technology, although not exhausted, is more mature and by its nature is more difficult and expensive to incorporate into operating plants.

Patent and Proprietary Incentive

Since the gas centrifuge process is new and has large potential for improvements, patent and proprietary opportunities are great. These opportunities are part of the reasons that industry participants are considering gas centrifuge for uranium enriching and serve to encourage further industrial entry into the field of gas centrifuge fabrication. In the gaseous diffusion process, the Government has developed to a highly sophisticated level and is the sole fabricator of key elements of the process. Therefore, the patent and proprietary opportunities in gaseous diffusion enriching are limited.

Reliability and Demonstrated Performance

Adequate reliability and performance of production type gas centrifuges has been demonstrated in test facilities. These tests will continue with current and advanced centrifuges in support of new enrichment plants. The gaseous diffusion process with 30 years of operating experience has demonstrated high reliability and performance. A significant part of the operating cost of gas centrifuge enriching plants is the replacement and repair of the high speed centrifuges, thus the cost of enrichment in these plants is sensitive to the centrifuge operating life. Operation of gas centrifuge enriching plants would assure a manufacturing market for centrifuge component suppliers. The projected gas centrifuge enriching plant economics are based on short operating life centrifuges. If the plant operator can increase the life by reasonable operating changes or improved centrifuges, the economics would improve.

Risk

The overall risks associated with new enrichment plants are higher with the gas centrifuge process since industry has never been called upon to supply large quantities of equipment and materials used in manufacturing gas centrifuges. On-going ERDA programs are providing industry with the technology that has been developed and assisting in promoting the expansion of necessary supporting industries until the market is established. The gas centrifuge process cost projections assume conservative operating life for centrifuges tending to minimize the risk of higher operating costs. More ERDA effort is currently directed toward gas centrifuge manufacture consistent with the development program. For a new, large gaseous diffusion enrichment plant, ERDA assistance would be provided to minimize the risk.

General

Considering the major advantages, it appears that the gas centrifuge process provides a more likely ability to achieve a competitive industry by permitting more entrants, more regional participation, more industrial involvement (including more labor), with reduced electric power constraints. The "spin-off" of new technologies such as high speed rotating components, balancing procedures and special fabrication techniques associated with the gas centrifuge can be of significant benefit to industry. The availability of this technology can serve to encourage industrial entry as a supplier. The use of the technology without compromizing security can serve to upgrade the Nation's overall industrial capability.

2. Question

What is ERDA's current estimate of the foreign and domestic enrichment services market?

Answer

Based on the April 1975 IEA forecast of world-wide demand, the requirements for enrichment services in millions of SWU with plutonium recycle and a 0.25% tails assay are given below. The U.S. requirements and the foreign market currently under ERDA enrichment services contracts are also shown, resulting in a net foreign requirement.

Requirements	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
World-wide	10	12	14	19	25	28	31	34	38	41	47	52	58	64
U.S.	5	7	7	9	11	12	13	16	19	21	24	26	29	34
Foreign Supplied by ERDA	4	4	4	6	8	9	11	10	10	11	11	10	10	10
Net Foreign	1	1	3	4	6	7	7	8	9	9	12	16	19	20

The U.S. requirements for enrichment services from new domestic enrichment capacity in millions of SWU with plutonium recycle and a 0.30% tails assay is given below.

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
U.S. Requirements	--	--	--	--	--	--	--	0.2	0.7	3.2	5.0	8.3	11.6	15.6

TAB B

3. Question

What is the present status of foreign enrichment supply? What information do we have on foreign customer preferring U.S. versus foreign supply sources?

Answer

Based on the April 1975 IEA forecast, the projected enrichment services from foreign plants in millions of SWU are given below. The U.S.S.R. capacity under contract is also included in the totals. The net foreign requirements from Question 2 are deducted from the total foreign capacity, resulting in a projected excess capacity. Additional foreign capacity is then included, resulting in a total projected excess capacity.

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
U.K.	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
URENCO	--	--	0.2	0.5	0.8	1.2	1.8	2.7	4.5	7.0	10.0	10.0	10.0	10.0
Eurodif-I	--	--	--	--	3.1	6.5	8.4	10.8	10.8	10.8	10.8	10.8	10.8	10.8
U.S.S.R.	0.5	2.2	2.6	3.1	4.1	4.1	3.1	3.1	3.1	2.1	2.1	2.1	2.1	2.1
Subtotal	0.9	2.6	3.2	4.0	8.4	12.2	13.7	17.0	18.8	20.3	23.3	23.3	23.3	23.3
Net Foreign Requirements	1	1	3	4	6	7	7	8	9	9	12	16	19	20
Excess Capacity	--	--	--	--	2	5	7	9	10	11	11	7	4	3
Additional Foreign Capacity														
Eurodif-II	--	--	--	--	--	--	--	--	3.0	6.5	8.5	10.0	10.0	10.0
South Africa	--	--	--	--	--	--	--	--	--	--	--	5.0	5.0	5.0
Japan	--	--	--	--	--	--	--	--	--	--	5.0	5.0	5.0	5.0
Total Excess Capacity	--	--	--	--	2	5	7	9	13	17	24	27	24	23

The foreign demand for enrichment services could increase due to lack of plutonium recycle, a reduced enrichment plant tails assay or a growth in the foreign demand for nuclear power. Moreover, working inventories and stockplies of enriched uranium to backup the operation of the foreign enrichment plants are unknown; these inventories and stockpiles could add to foreign requirements.

A domestic private enricher must compete with foreign suppliers by offering more competitive contract terms and assured reliable supply of enrichment services. Since the U.S. technology, particularly for the gaseous diffusion process, is well advanced and proven, it should have a tendency for lower costs, other factors being equal. The U.S. has also been nondiscriminatory in the treatment of all customers, which has assisted in promoting sales of U.S. enrichment services throughout the world. A similar policy for domestic private enrichers may be assumed for the future.

Only about 2.7 million SWU of the capacity of the URENCO plant is committed. An attractive feature claimed by the owners of the plant is that only five years are needed to expand the capacity, so that demand may be closely tracked. The Eurodif-I plant is fully committed. The Eurodif-II plant has not begun to be committed; it is beginning to go through the French political process. A domestic private enricher could affect this plant more than the URENCO or Eurodif-I plants. The South African plant is tied to the South African supply of feed. Since feed may be in short supply on the world market, the South African plant may penetrate the enriched uranium market. It is unknown what further market penetration the U.S.S.R. will make.

May 30, 1975

Comparative Analysis of Budgetary Impact on ERDA of Uranium Enrichment Capacity Expansion Alternatives
(in millions of FY 1976 dollars)

	FY 1976	TQ	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990	Total
A. Alternative 1 (ERDA assistance to the 9 million SWU venture)																	
Obligations																	
1. Performance assurance, net of revenues ..	33	-3	-14	-20	-4	-8	-8	-31									-55
2. Stockpile backup/ load leveling 1/ 2/									60	60	60	60	60				300
3. Government buyout (contingent) 3/ ...	1,500																
Total	1,533	-3	-14	-20	-4	-8	-8	-31	60	60	60	60	60				245
Outlays																	
1. Performance assurance, net of revenues ..	-1	0	-1	-2	-4	-8	-8	-31									-55
2. Stockpile backup/ load leveling 1/ 2/									60	60	60	60	60				300
3. Government buyout (contingent)	See footnote 3 below																
Total	-1	0	-1	-2	-4	-8	-8	-31	60	60	60	60	60				245
B. Alternative 1 (Construction of add-on 5 million SWU diffusion plant by ERDA)																	
Obligations	16	21	109	169	269	289	247	165	158	160	150	150	150	150	150	150	2,503
Outlays	15	6	34	79	229	294	313	247	191	195	150	150	150	150	150	150	2,503
Revenues			-15	-50	-70	-55	-19				-161	-374	-253	-265	-400	-333	- 1,995
Net outlays	15	6	19	29	159	239	294	247	191	195	-11	-224	-103	-115	-250	-183	508
C. Net cash flow from 3 existing ERDA plants 4/ (for reference only)	164	139	294	-41	-436	-820	-1,107	-1,222	-743	-1,053	-1,137	-1,053	-660	-990	-1,013	-984	-10,662 4/

TRG

Footnotes

Note:

a. All figures assume "most likely" case, rather than minimum or maximum estimates.

b. Follow-on increments of capacity in either alternative are expected to be provided by private industry (using centrifuge technology), with Government assistance (at least for the first few plants). The cost of such an assistance program is not yet known but would be essentially the same under both alternatives. However, such an assistance program might well occur a little later (6-18 months) under Alt. 2.

1/ Government costs would be recoverable through sale of these excess SWUs, probably in the late 1980's or beyond.

2/ Assumes excess uranium feed (yellow cake) available from ERDA stocks. If such feed must instead be purchased by ERDA at $30/lb. U_3O_8, an additional $500 million would be required. Furthermore, potential [illegible] obligation proposed by UEA could cost the Government $1.2 billion.

3/ [illegible] Government support of domestic share of UEA project by ERDA. Assuming UEA project cost of [illegible] million ($1976 dollars), this feature could cost the Government up to 40% of $3.8 billion, or [illegible] differ for domestic work and equity. If the Government should be obligated only to buy domestic equity [illegible] of [illegible] plants), this feature would cost the Government up to $225 million. It [illegible] would be difficult unless Congress were willing to approve, and UEA were [illegible] appropriation of "such amounts as may be necessary" when and if [illegible]. In any event, the "most likely" outlay projection would be zero.

4/ [illegible] charge for enrichment services and maintaining current contract schedules. If the Government allows contracted commitments and schedules to be relaxed, as planned by ERDA, [illegible] would be reduced by about $2.6 billion over the 15-year period.