The original documents are located in Box 18, folder "Nuclear Fuel Assurance Act: ERDA Response to Joint Committee on Atomic Energy Questions" of the Loen and Leppert Files at the Gerald R. Ford Presidential Library.

ENERGY RESEARCH AND
DEVELOPMENT ADMINISTRATION

11/75?

Office of
Congressional Relations

For your information~~/ Per your request.~~

H. Hollister Cantus
Director

GENERAL QUESTIONS

1. How will UEA be able to build up design and management forces in the very short time schedule available? Where will they obtain experienced people in this very unique area?

Answer:

UEA would draw on the resources of Bechtel Corporation and its project subcontractors for engineering, procurement, construction, management, and the other more conventional design aspects of the project. Goodyear, another partner in UEA would be able to draw from its general management and operational experience in enrichment. UEA has, over the past three years, developed a cadre of technically qualified uranium enrichment design personnel. Because ERDA and its operating contractors are responsible for existing plants and for a major technology development effort, the experience and know how with respect to process design technology specific to enriching uranium rests largely with ERDA and its operating contractors. This experience can and will be made available to UEA from ERDA and its operating contractors on a full cost reimbursable basis.

2. What services are to be provided UEA and gas centrifuge proposals by ERDA?

Answer:

Services to be provided to UEA at full cost recovery include: Manufacture of barrier and seals; assistance in developing the plant description (establishing the size and numbers of stages); stage and cell layout; process engineering design; preparation of specifications for process and process related equipment; design review, review of development efforts; testing of new equipment; equipment supplier evaluation; review of startup operation and quality control procedures; development of training programs and training personnel, and developing environmental statements. It is expected that similar types of technical services would be requested and would be provided to successful bidders for gas centrifuge projects.

3. Do ERDA and its contractors have the resources and expert manpower to handle both the hedge plan and assistance to private enrichers?

Answer:

ERDA and its contractors do have the resources and engineering capability to handle simultaneously the gaseous diffusion "hedge plan" and assistance to UEA. Resources and expert manpower could be a problem if it were necessary to maintain both projects for a long period of time. However, we do not expect this to be a problem because we are assuming that the Congress will act in the near future on the President's plan and remove the uncertainty.

We are not certain at this time of the extent of the effort that may be requested by the centrifuge proposers, but we can continue the necessary conceptual design work for a gas centrifuge project with resources now available.

4. Is ERDA thinking about a revolving account for applying revenues against cost?

Answer:

ERDA has deferred further consideration of this matter until National Policy as to the future of the uranium enrichment program has been established.

In any consideration that is given to a revolving account, we must be very clear on the potential budget impact. For example:

A. There has been some confusion in thinking that revenue from existing plants could offset the cost of a new government plant when, in fact, the revenue now being received is largely a reimbursement of funds for the past and current construction and operation of the three existing plants. Building an add-on plant would involve negative cash flow into the 1990's for that plant.

B. Even the revenue from the existing plants has not yet reached a level where it fully offsets expenditures on those plants and will not do so until sometime in the early 1980's. If revenues from existing plants were to be placed in a revolving fund the costs of other ERDA programs would still have to be paid from taxes or higher deficits.

5. What is ERDA's target date for the start of design and power procurement if the UEA project is not accepted? What steps are being taken now in preparation for this possible event? (Proposals for architect engineers, construction, power and equipment, staffing, etc.)

Answer:

Conceptual design work has been under way since 1973. ERDA is maintaining a schedule that will permit completion of conceptual design and start of further design of an add-on diffusion plant at Portsmouth during the first quarter of CY 1976. This start will permit a half-size add-on diffusion

plant to be in full production in the first quarter of CY 84. In order to meet this schedule, it would be necessary to initiate negotiations for power procurement, and undertake further work to identify architect engineering and construction contractors, for the Portsmouth site during the first part of CY 1976. Requests for Proposals for obtaining necessary architect engineering and construction work are being developed.

6. How realistic is the target date of January 1976 for going ahead with UEA? What information has been supplied to ERDA by UEA since their initial proposal made in December 1974? (Covering such items as power, utility contracts, partners, foreign negotiations, antitrust data, market data, financial arrangements, etc.)

Answer:

From a technology and engineering point of view, a target date of January 1976 for going ahead with UEA is realistic. The development of the plant description and other determinations required to establish the basic design approach and criteria should be advanced enough by that time so that significant numbers of additional engineers and designers can be put on the job. Since December 1974 there has been through the industrial participation program, a continuing exchange of information with UEA, which includes the conceptual design work being accomplished for ERDA's hedge plan. UEA has incorporated the basic concepts included in the hedge plan in the planning for their project. An active consulting effort for UEA was initiated by ERDA and its operating contractors in August 1975. Work on the critical path to develop the UEA plant description has been accomplished. Cost of all work performed for UEA will be paid by UEA.

Extensive information was supplied by UEA in February - March 1975 which, together with that supplied by prospective centrifuge enrichers, has been helpful in development of the Administration's program.

We understand that UEA has had extensive discussions with a prospective power supplier (the Southern Company), that further studies are being made by the supplier, and that they are moving forward on what appears to be a sound basis. UEA has kept ERDA informally advised of their discussions with potential non-United States participant investors/customers and expected domestic customers. UEA has kept ERDA generally advised of its activities toward securing domestic partners, including the recently announced partnership arrangement of Bechtel, Goodyear, and the Williams Companies. Early enactment of the Nuclear Fuel Assurance Act of 1975 would undoubtedly provide a stimulus to the parties to conclude these arrangements.

7. Did the UEA proposal originally contemplate governmental guarantees? Does the UEA proposal now have a competitor? Were potential competitors ever given the opportunity to compete with UEA on the basis that extensive governmental guarantees would be available?

Answer:

As detailed subsequently in the answers to these questions, the UEA proposal did originally contemplate Government guarantees. However, the current UEA proposal involves less Government assurance than its earlier proposal.

The UEA proposal was in response to the general policy first ennunciated by the AEC several years ago inviting industry to consider providing new enrichment capacity.

An attempt was also made in 1974 to obtain industry participation specifically in demonstration sized centrifuge enriching projects; however, the program was not successful because it was not sufficiently broad, either in its scope or in the type of assistance contemplated. Subsequently, on June 26, 1975, a Request for Proposals was issued for Centrifuge Enrichment Plants which recognized that substantial Government assistance would be required to bring such projects into being. This was an outgrowth of an extensive dialogue with prospective centrifuge enrichers. The three firms who have now submitted proposals (CENTAR, Exxon Nuclear and Garrett) have been fully cognizant of the proposed forms of Government cooperation and assurances that are embodied in the proposed Nuclear Fuel Assurance Act of 1975.

While the UEA proposal is the only one incorporating the gaseous diffusion process, we believe that the next increment of new enrichment capacity must employ this proven process to provide assurance of supply.

Both UEA and the centrifuge enrichers are now competing for customers.

8. Please make a comparison between the Bechtel December, 1974, proposal and their subsequent May, 1975, proposal. Does the May proposal appear to provide more overall guarantees to Bechtel/Goodyear or less?

Answer:

The December 1974 UEA proposal, as clarified in discussions with UEA, contemplated several forms of Government assistance, listed below. It must be recognized, however, that February - March discussions of this proposal sought to clarify all the forms of assistance that might be required rather than to arrive at the minimum possible assurances.

A. Completion Guarantees, involving:

1. Contingent Government loan guarantee (to assure an "A" rating for borrowings for domestic debt).

2. Overrun funding by further Government loan guarantees or direct Government loans.

3. Government assumption of domestic debt, compensation of domestic equity investors in case of "economic frustration" (e.g., licensing action delaying or preventing completion or operation).

B. ERDA termination of enough of its enriching services contracts to assure that the UEA plant is "sold out".

C. Government's assumption of a substantial portion of the obligations of defaulting domestic utility customers.

D. ERDA stockpile backup and load leveling of the UEA plant, involving:

1. Access to Government stockpile on lease or purchase basis at outset of operations and for 5 years thereafter to assure ability to meet customer needs, up to a maximum access of 11 million separative work units.

2. ERDA purchase of product for its stockpile during first 5 years of operation if necessary to assure levelized operation, up to a maximum of 6 million SWU.

E. Government warranty of technology performance and equipment furnished.

The May 1975 proposal substantially modified the earlier one by:

A. Replacing the completion guarantee with the concept of project takeover by the Government, should the private effort falter prior to commercial operation. In such event, all or part of the domestic equity investment could be lost, depending on degree of responsibility for failure.

B. Dropping the request that ERDA terminate enough contracts to load UEA's plant.

C. Dropping the request that the Government assume significant contingent liability with respect to defaulting utility obligations.

D. Limiting access to the Government stockpile to a maximum of 9 million SWU the first year, declining step wise to zero five years later. The ERDA purchase obligation, up to 6 million SWU, was not changed.

E. Government technology and equipment warranty requests were not changed.

The May 30, 1975, proposal involves considerably less Government-provided assurance than did the earlier proposal. There are now definable time limits on the Government's involvement, and the domestic equity proposes to assume greater risk.

FOREIGN PARTICIPATION

1. Is the U.S. plant commitment the first step in the sharing of enrichment technology with foreign entities? How detailed are the criteria for U.S. firms and foreign entity participation? What triggers private companies to allow them to discuss the sharing of enrichment technology with foreign entities? Following discussions, what triggers the actual exchange of enrichment technology with foreign entities?

Answer:

No; the U.S. plants to be constructed under the Nuclear Fuel Assurance Act do not involve access by foreign entities to enrichment technology. The commitment of a U.S. plant has nothing to do, per se, with sharing of enrichment technology and such sharing is neither more likely nor less likely due to commitment of such a plant. The possibility of technology sharing with a specific foreign entity is an independent event which must be judged on the basis of appropriate Government criteria. It has, however, been expected that any implementation of a technology sharing arrangement, which would have to meet the test of National interest, would be implemented through the U.S. private enrichment industry. The creation of the International Energy Agency has been regarded as signaling achievement of the broad cooperation in energy matters on which subsequent steps in considering enrichment technology sharing were dependent. On January 28, 1975, a meeting was held with companies active in ERDA's Industrial Participation Program. The policy of henceforth allowing U.S. companies who expect to provide enrichment capacity in the U.S. to initiate unclassified discussions with foreign entities, within the confines of the Atomic Energy Act and the requirements of Title 10 of the Code of Federal Regulations, Part 810 Rules and Procedures, was explained to the industrial participants. However, they were told clearly and explicitly that there could be no assumption that any proposed arrangement that might result from commercial negotiations would be approved by the U.S. Government. The Government would have to determine that the proposed arrangement would, on overall balance, be beneficial to the U.S. The Government's findings as to the acceptability of such proposals would consider:

1. compatibility with overall foreign policy objectives including effective international energy cooperation;

2. assurance that international security interest would be protected;

3. assurance of domestic U.S. interests including the surety of U.S. fuel supply needs being met, establishment of a competitive private supply industry;

4. reasonable compensation to the U.S. public for publicly developed technology.

Any arrangement which involved the transfer of classified information would be subject to an appropriate Agreement for Cooperation between the U.S. and the country or countries of the foreign entity and thus subject to Congressional oversight. No arrangements, which, if implemented, could result in technology sharing have been proposed to ERDA.

2. Has Bechtel performed unclassified work in the enrichment field for foreign entities? With whom, in what detail, for how much money, and how were such arrangements approved?

Answer:

The following is a brief summary of unclassified activities which Bechtel has been authorized by AEC/ERDA to perform for foreign clients under the provisions of 10CFR810 (formerly 10CFR110). In general we do not know the dollar value of such work. In any event the dollar value had no bearing upon whether approvals were given.

(1) Bechtel Siting Study for CEA (France) 1971

In early 1971, the CEA announced that they had selected Bechtel to conduct a site selection study for the Eurodif Enrichment Plant. Eurodif is based on French enrichment technology. The project was initiated at a meeting on May 1, 1971, and Bechtel was asked to find the optimum plant site in France for the enrichment facility based on a list of criteria specified by the CEA which included acreage and foundation requirements, power, transportation labor and water. No access was given to French enrichment technology and Bechtel had no access to U.S. technology. The study was conducted by the Bechtel staff working both in France and San Francisco. The site selection study recommended a site on the Rhine, however, the French selected a site at Pierrelatte (now known as Tricastin). The study was completed in March 1972.

This study did not require authorization under 10CFR110 as the requirement for specific authorization by the Commission for unclassified activities relating to uranium enrichment was not established until July 26, 1972.

(2) Technology Services Requested by BRINCO Ltd., Canada.

Bechtel was authorized to provide service in the following areas with respect to a proposed multinational enrichment plant in Canada.

a. Economic Studies - an analysis of unclassified capital and operating cost data to determine cash flow requirements, effect of escalation, and projected selling price of separative work.

b. Siting Studies - analysis of unclassified data on electric system requirements, cooling system requirements, site geology requirements for structures, transportation requirements, and other related areas.

c. Schedule Studies - preparation of a master time schedule for engineering and construction of the project to the extent possible with unclassified data.

d. Staff Training - instruction to BRINCO staff in the basic theoretical process calculations and unclassified published data pertinent to gaseous diffusion cascade operations to permit optimization studies and a technical understanding of a diffusion stage.

e. Market Studies - assist BRINCO in preparing detailed market demand studies including the quantities of enriched material required at various enrichment levels for various regional markets.

f. Presentations - to the extent required by BRINCO, utilizing data and information developed in the above tasks, support BRINCO in the preparation and presentation of information to potential investors, customers, and other interested groups.

The AEC, by letter of August 1, 1972, approved the preceding items of the Bechtel scope of work and advised Bechtel any additional assistance would require additional specific authorization by the Commission.

(3) Siting Study in Territory of Papua for a Japanese client

Bechtel was authorized by the AEC on June 5, 1973, to undertake this unclassified study provided there was no objection from the Australian and/or Papuan governments and the information to be provided by Bechtel was based on unclassified information available in the published literature. Approval of the two governments was obtained and Bechtel completed this study.

(4) UEA request to participate with the Japanese in a U.S. Enrichment Project Study.

UEA was authorized on July 31, 1973, to participate with the Japanese Enrichment Survey Committee in an evaluation study concerning an enrichment facility to be built in the U.S. The scope of work for this project included general management activities, preparation of a conceptual design for 9 million SWU Baseline Gaseous Diffusion and Gas Centrifuge Plants, preparation of a business plan incorporating marketing studies and preparation of a project financing plan.

The AEC authorization precluded transmission of any restricted data or other classified information, or unclassified technical data not available to the general public which might be considered useful in the design, fabrication or operation of a uranium enrichment facility, or specialized components especially designed therefor.

(5) Siting Study in Western Australia for Japanese Client

Bechtel was authorized by AEC letter dated November 15, 1973, to conduct the siting study based on unclassified published information if there were no objection by the Government of Australia. Bechtel has advised that this study was not conducted since the Government of Australia did not grant an authorization to the client.

(6) Supply of Unclassified Enrichment Technical Data to the Japanese.

The AEC authorized UEA to transmit an unclassified report containing technical data involving the gaseous diffusion process which was not available to the public in general form. The report was part of the work carried out under the evaluation phase of the joint UEA-ESC program. The report was reviewed for classification and technical content by AEC staff prior to UEA being authorized to release the report. The AEC authorization by letter of September 16, 1974, was given subject to the proviso that a commitment be obtained from the ESC that the data would be solely used for evaluation of further participation in the UEA project. The ESC provided such an assurance.

The AEC, by letter of October 17, 1974, authorized UEA to transmit an unclassified evaluation report covering a gas centrifuge complex to the ESC. This report was also reviewed for classification and technical content by staff prior to this authorization.

(7) Siting Study in Zaire

The AEC authorized Bechtel to conduct an unclassified site suitability study for a prospective uranium enrichment plant in the territory of Inga, Zaire. This study was authorized by an AEC letter dated November 1, 1974. This study was to be sponsored by the Syndicat d`Etude de L`Endustrie Atomique of Belgium with part or all of the costs to be borne by the Government of Zaire. We understand this study has not been carried out due to a lack of funding.

(8) Unclassified Business Data to Iran

The Administrator, by letter of January 29, 1975, authorized UEA to transmit its unclassified but proprietary Evaluation Phase Business Plan and Economic Analysis report to Iran.

(9) UEA Request to Transmit Unclassified Report Regarding Uranium Enrichment to Several Foreign Countries.

ERDA, by letter of March 6, 1975, authorized UEA to transmit to the Japanese ESC the following unclassified UEA proprietary reports:

GDP System Evaluation Studies - Plant Design
Add-on Plant Study
Short Gradient Study, and the
Evaluation Phase Business Plan and Economic Analysis Report

ERDA also authorized UEA to transmit its "Evaluation Phase Business Plan and Economic Analysis" report to the following prospective customers.

France	Italy	Spain
Electric de France	ENEL	ENUSA
CEA	CNEN	

3. If U.S. guarantees the gaseous diffusion process now, (which is different than the arrangements two years ago when there appeared to be no U.S. Government guarantees involved in any arrangement by which the government would allow private industry to get into the enrichment business) -- why should U.S. firms be allowed to benefit from the sharing of uranium technology when it appears that private firms have made no contribution to this effort and indeed even need governmental guarantees which would assure that there is no private financial risk?

   If these points are valid, shouldn't the question of sharing nuclear technology with foreign entities through private companies be reexamined in light of the U.S. Government guarantees of enrichment technology?

Answer:

First, there are several implications in the question that are not correct, e.g., that private firms will bear no financial risk. It is not correct to conclude that there is no private financial risk in enrichment ventures. Depending upon circumstances, there is risk of all or partial loss of equity, and/or loss of return on equity. The preceding statement applies to the UEA project, and it is likely that it will also apply to centrifuge projects. The question of guarantee of technology was not addressed two years ago. Now that this point has been addressed, it is clear that it is appropriate for the Government to guarantee the technology to prospective enrichers since the Government is the supplier. Private firms will pay a royalty. Furthermore, private firms have made, and it is expected that they will continue to make, contributions to enrichment technology at their own expense.

It appears that the question is directed toward the possibility of enrichment technology sharing which was outlined by Secretary Kissinger in 1974 at the Washington Energy Conference and which has been tied to achievement of certain National objectives. Any such technology sharing, if it were determined by the Government

to be in the National interest, is expected to be conducted through those private companies involved in uranium enrichment in the United States, recognizing, as one element, that U.S. taxpayers would receive reasonable compensation e.g. royalties for Government-developed technology. The prime criterion is that the United States should benefit in any such arrangement. The use of private firms as a channel for enrichment technology sharing abroad is appropriate for the following reasons:

(1) Future decisions regarding any implementation of the technology exchange principle remain totally in Government hands, to be decided upon on the basis of National interest.

(2) It is consistent with the premise that the U.S. system will be one of private enterprise.

(3) It encourages private enterprise to invest in uranium enrichment projects which will lead to a private competitive enrichment industry, and further the development of enrichment technology by the private sector.

(4) It tends to encourage foreign investment in U.S. private enriching projects as a way of establishing relationships with the U.S. companies.

(5) It does not prevent the Government from obtaining desired Government benefits that would have to be obtained as a part of any approved arrangement.

It should be strongly stressed that involvement by a private entity in domestic enrichment establishes no prior right to technology sharing. On the contrary, the Government retains full control over whether, or under what conditions, such might be permitted.

4. Which foreign nations are expected to contract with UEA to buy into the plant? When is it expected that these nations will sign a final agreement indicating funds to be paid and the percentage of their buy-in to the UEA plant? Has the Department of State discussed the UEA arrangements with the foreign governments or organizations since the President's June 26, 1975 announcement? If so, what has been the foreign reaction?

Answer:

UEA has indicated that it expects its major investors abroad to be Iran, Japan, France and West Germany, with lesser participation by other countries such as Italy, Spain, Portugal, Switzerland, Taiwan, and Australia. It is expected that passage of the Nuclear Fuel Assurance Act of 1975 would remove uncertainties that may be impeding foreign investors' decisions to participate financially in the project since it would then be clear that Congress supports the transition to a private enrichment industry.

Since the President's June 26, 1975, announcement, the Department of State, primarily through its embassies, has discussed with Japan and Iran the President's Plan for uranium enrichment expansion including UEA's proposed project. ERDA has also discussed this matter with officials of these two countries. Japan has stated that it is still too early to make specific arrangements with any of the U.S. potential private enrichers and it will make no decision until after it has carefully reviewed its enrichment needs, the Nuclear Fuel Assurance Act is passed, and specific contracts between ERDA and U.S. enrichment projects are written. Iran has previously expressed its willingness to participate in UEA but this is contingent upon the negotiation of an Agreement for Cooperation. As of the present time, these negotiations are still in progress.

5. How does the U.S. plan to avoid foreign controlling interest in the UEA proposal? (For example, foreign governments might exert pressure on U.S. companies that do business overseas in their country).

Answer:

The U.S. will insure that there is no foreign domination of the UEA project through its licensing process giving due recognition to all appropriate factors. Under the Atomic Energy Act, NRC must, as a condition of granting a license, assure that the UEA project is not subject to foreign domination. Also, ERDA plans to require that UEA offer foreign investors only a minority of ERDA voting rights. UEA has established Uranium Enrichment Technology, Inc. which is totally U.S. owned and which will be the entity with access to the technology, and Uranium Enrichment Services, Inc. covering financial and marketing matters, in which foreign interests will have the previously discussed minority voting rights.

6. What are the rights of foreign entities if there is a takeover of UEA by the U.S. Government in the event that the UEA venture fails? Does the U.S. repay in enriched uranium, in enriching services or money, or does the U.S. Government have no obligation to foreign entities?

Answer:

We believe that the possibility of takeover is remote since the U.S. Government would be involved in the project from the outset and under conditions which will serve to make takeover highly unlikely. In all reasonable circumstances, however, if takeover were to take place near plant completion, the project would result in an operable plant. In this case all plant investment would be protected automatically by long term sales contracts for plant output. However, if the UEA venture involves takeover by the U.S. Government at an early stage, involving proportionately smaller investments to that point, the rights of foreign entities could vary according to what the U.S. Government actually did with the plant. If the plant were completed and operated successfully

by ERDA, as is most likely, foreign debt and equity relationships would continue as the project was originally conceived, i.e., foreign customers/investors would receive their product on the basis of the project pricing formula which would recognize all project-related costs, including investment costs. The foreign investors would then have the U.S. Government as a partner in the plant.

It is the intention of the U.S. Government to complete the plant in the event of the takeover unless it would be to the economic advantage of the plant's customers, both domestic and foreign to provide alternate capacity.

In the remote contingency that the plant were not completed by the Government, foreign investors would receive, in fair and reasonable settlement of their interests:

a. Any funds provided by them not required for liquidation of their share of obligations of the venture; and

b. their share of the value associated with liquidation of the assets of the venture.

Furthermore, under such conditions the Government would be willing to consider the possibility of foreign investment in any alternative project constructed by the U.S. Government. And, of couse, the possibility of foreign participation in other private ventures would also exist.

However, of most significance, all customers, both foreign and domestic, which had contracted for enrichment services from the uncompleted plant would be assured by the U.S. Government that their contracted amounts of, and schedules for, enrichment services would be met by other domestic sources.

It is to be emphasized that the type of ERDA participation contemplated in the program gives great assurance that projects will perform successfully, essentially equivalent in our judgment to the assurance associated with direct Government construction of new facilities.

7. Do foreign customers in the UEA venture want a long-term commitment insuring that there would be no U.S. export control relating to their arrangement under the UEA concept? If so, does this interfere with the Nuclear Regulatory Commission's role in this field?

Answer:

We are not aware of any specific request of this nature. In any event, there is no action contemplated to exempt foreign sales by UEA from export controls or to interfere in any way with the Nuclear Regulatory Commission's role in this field.

8. Is the UEA arrangement dealing in enrichment services as a commodity rather than filling orders for identified reactors as is now the case in ERDA? If the UEA arrangement with foreign entities can be in terms of a commodity, what arrangements have been made regarding excess material that a foreign nation might accumulate?

Please explain how difficult it is to enrich uranium up to 4%. Also, please explain the additional difficulty to enrich the 4% uranium to 90%. Is it correct to say that most of the work in enrichment is done to get the material up to 4% with it being much less difficult to go from 4% to 90%?

Answer:

Under the proposed UEA arrangement, enrichment services would be dealt in as a commodity to the extent that identified reactors were not involved. As such a commodity, it would be subject to all appropriate domestic controls while in this country. Any excess material that a foreign nation might be permitted to transfer from the United States would be subject to the same export license and other requirements, including the appropriate provisions of the applicable Agreement for Cooperation, as now prevail or as might be required in the future.

Depending upon the operating tails assay, 85-90% of the separative work required to produce 90% enriched product has been expended in bringing normal assay feed to 4% enrichment.

To enrich uranium to 4% utilizing gaseous diffusion requires three sizes of equipment, which for a 9 million SWU plant are quite large in physical size. There would be a total of approximately 1200 stages, utilizing approximately 2400 MW of power. Such a plant could produce higher enrichment by operating at a low effeciency and at reduced power or by operating in a batch mode. In such a mode, the product would be withdrawn at an intermediate enrichment, the plant shut down, cleaned out, and the product refed and enriched to a higher level. These abnormal operations would be readily observable under applicable IAEA safeguards procedures, and would be very costly in both time and money. For comparison purposes, a gaseous diffusion plant specifically designed to enrich material to 90% or more would require several sizes of equipment and about 4200 stages.

If the gas centrifuge process were being used, only one size of equipment, albeit large and complicated, is involved in a production plant. Due to the higher enrichment per stage of equipment -- relative to the gaseous diffusion process -- only a relatively few additional stages would be required to enrich material from 4% to 90%. Materials safeguards, control, and tamperproof instrumentation could detect such abnormal operations in a centrifuge enrichment plant.

It is because of non-proliferation concerns such as this question raises that we believe it is in our best interests that the U.S. move more aggressively to provide timely U.S. enrichment capacity to serve a large portion at the foreign market, as such action would be expected to inhibit further construction of foreign enrichment projects.

9. What studies have been performed by the U.S. Government regarding the classification of technology in the event of the sharing of enrichment technology with foreign entities as proposed by the Administration?

Answer:

As indicated previously, enrichment technology sharing with foreign entities has not been proposed by the Administration. It has been held out as a contingent possibility if certain National interest benefits could be achieved and then only after appropriate review. To date there have been no studies regarding the classification of technology in the hypothetical event of sharing enrichment information with foreign entities. As noted in the answer to question #1, above, an arrangement for the sharing of U.S. enrichment technology would be judged on the basis of certain criteria, including the "assurance that international security interests would be protected." If the determination is made that information classified by the U.S. will not be compromised or used to the detriment of the common defense and security and the other criteria are met, then the sharing of enrichment technology could be considered under the provisions of the Atomic Energy Act of 1954, as amended. Any decision to make available unclassified, unpublished enrichment technology is, of course, also subject to similar legal criteria. In any event, classification policy decisions with regard to uranium enrichment technology will continue to be made on the basis of a careful evaluation of the benefits to the U.S. versus the risks to the common defense and security of the release of any information.

TAKEOVER BY U.S. GOVERNMENT IN THE EVENT THE UEA VENTURE FAILS

1. Is there sufficient inventory of separative work units to cover the long delay that would appear to be inherent in a takeover of the UEA plant by the Government in the next several years?

Answer:

Government participation in the UEA project is designed to assure that the project will work, thus the prospect of takeover is very remote. However, ERDA is making its stockpile plans to cover the eventuality that delays which impact agreed upon delivery commitments could occur whether involving takeover or not. ERDA will have available up to 9 million SWU (1 year's production from the UEA project) to "backstop" such a delay. Stockpile backup for new capacity is not unique to the UEA project. Even if the Government were to build additional enrichment capacity, a comparable stockpile backup would still have to be maintained to protect against potential project delays. We do not feel that there would be a "long delay" inherent in takeover of the project from UEA if that were ever necessary.

2. The UEA venture appears to have within it the requirements for a dual organization because of Government guarantees. This dual management concept of shared responsibilities appears to be similar to the Clinch River arrangement. Does this potential problem increase the possibility of Government takeover as has been the case in the Clinch River Breeder Reactor?

Answer:

The basic management concept that UEA proposes for their project would vest the responsibility for management of all engineering, construction and operation with UEA. ERDA's responsibilities for guaranteeing plant operability involve identifying criteria which must be met to warrant Government-supplied components, plant operation and performance, and monitoring the project to assure that these criteria are incorporated in the design, construction, and operation. We do not see the Government's role in support of its warranting the operation and performance of the process as involving a mixed management situation as exist in the CRBR. It will, of course, be necessary for ERDA to set up a group to follow the project and exercise the various review and approval functions necessary in support of the Government's warranties and contingent liabilities, currently being spelled out in the negotiations of the basic ERDA/UEA contractual arrangement. Services provided to the project from ERDA and its contractors would be on a full-cost recovery basis.

3. What are the different actions needed now in the event of the transfer to the Government of UEA facilities and obligations in the event that UEA venture fails? For example, what would be the Government's role and responsibility in regard to (a) terms and charges for enrichment services (b) schedule of deliveries (c) commitments to subcontractors and suppliers and (d) obligations and any special arrangements between customers and UEA.

Answer:

In the remote event that the Government were to take over the project, we would expect to inherit an operable plant or one which could be made operable upon completion of construction. In such event, the Government would assume UEA's rights and obligations under UEA's contracts with others for the provision of services, materials, and equipment required for the design, construction and operation of the project and would assume UEA's obligations to supply enrichment services in the amount and on the schedule contracted for by its customers. Actions necessary at this time concerning these matters are the negotiation of appropriate provisions in the cooperative arrangement between UEA and ERDA affording ERDA sufficient participation in the development of the terms and conditions for UEA's contracts with its suppliers and customers to assure the provision of services and materials to the project in a timely and competent manner and that the amount and schedule of enriching services committed to be supplied can reasonably be met by ERDA from the project's capacity (and/or ERDA's other sources of supply) in the event the project experiences difficulty. In this sense ERDA's actions would be essentially equivalent to those it would take if it supplied services from its own new capacity.

4. When does the U.S. Government commitment to takeover UEA end?

Answer:

The UEA proposal of May 30, 1975, proposes that this commitment would cease "one year after full scale, steady commercial operations". The precise definition of this term is being established in the UEA/ERDA cooperative arrangement.

ANTITRUST

1. Will UEA's entry into the enrichment field delay competition? Is price regulation a necessary step in connection with this venture?

Answer:

We do not believe UEA's entry will delay competition. In fact, as noted earlier, UEA, CENTAR, Exxon, Garrett, and above all, foreign suppliers are presently competing for customers.

Price regulation would not appear to be a necessary step at this time in connection with the UEA venture. Assistant Attorney General Thomas E. Kauper expressed this opinion in his testimony during Phase 1 of the hearings before the JCAE on actions necessary to be taken to insure supply of enriched uranium sufficient to meet present and future needs. He indicated that the justification for price regulation would be that the economics of the enrichment process require that the industry will be a monopoly or, absent a natural monopoly, consist of a small number of competitors having the ability to set monopoly prices. With respect to the latter possibility he noted that enrichment customers are not small or extremely numerous and are sophisticated and informed customers who could be expected to have a bargaining position offsetting, to some degree, excessive pricing as in an oligopoly.

2. If the startup of UEA is delayed to as late as 1983-85, should this proposal be considered in competition with gas centrifuge proposals?

Answer:

No. As stated in the answers to General Question 7, the UEA proposal is not considered to be an alternative to the gas centrifuge proposals. We believe that the next increment of added capacity, even if it should suffer such delays, should employ the proven gaseous diffusion process. The availability of this capacity will provide assurance of supply and will permit flexibility in the timing and sizing of centrifuge projects whose economics remain to be proven in a large scale production environment. Since delay could affect either new gaseous diffusion or centrifuge plants, we believe it is clearly in the National interest to have both processes moving forward essentially in parrallel.

3. What are the antitrust implications if UEA or gas centrifuge proposers decide to get into the business of purchasing supplies of uranium feed as well as the business of producing and selling enriched uranium? Which agency or department would rule on any such questions?

Answer:

We wish to defer to the views of the Department of Justice and the Nuclear Regulatory Commission, which have jurisdiction over such matters, as to the antitrust implications of UEA or gas centrifuge proposers deciding to enter the business of purchasing supplies of uranium feed as well as the business of producing and selling enriched uranium. Whether such vertical integration would be considered inconsistent with the antitrust laws will depend upon the analysis of the Department and the Commission.

4. Is UEA pricing nondiscriminatory or does the first buyer-in receive a favored position?

Answer:

Although UEA's negotiation with potential customers of the terms of UEA's contract to supply enriching services have not been concluded, we understand that UEA contemplates offering a favored position to customers making 25 year commitments to take enriching services in an amount sufficient to support UEA's proceeding with its project, i.e., contracts covering at least 75% of plant capacity. We understand that the price for services to these customers will be nondiscriminatory among them and will normally consist of the costs of such services plus a 15% return on equity after taxes. The remaining "additional capacity", if any, would be sold to subsequent customers at the best market price obtainable with some of the proceeds of such sales applied to reduce costs payable by initial customers.

5. Should the U.S. Government permit the same financial groups or companies to commit investments in both UEA and gas centrifuge proposals?

Answer:

Again we wish to defer to the views of the Department of Justice and the Nuclear Regulatory Commission. Inasmuch as one of the barriers to entry in the enrichment industry is its capital intensive nature, permitting the same financial groups and companies to participate in more than one enrichment venture could result in additional ventures and a more competitive industry. Of course, the antitrust laws would apply to restrain any anti-competitive practices.

UNITED STATES
ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
WASHINGTON, D.C. 20545

NOV 1 1 1975

Mr. George F. Murphy, Jr.
Executive Director
Joint Committee
On Atomic Energy

Dear Mr. Murphy:

Attached, for the information of the Joint Committee on Atomic Energy, are answers to questions posed in your letter of October 1, 1975. It is noted that the questions appear to relate almost exclusively to a single project, that contemplated by UEA, whereas the purpose of S.2035, the proposed Nuclear Fuel Assurance Act of 1975, is to permit cooperative arrangements with several private ventures leading toward achievement of a competitive private enriching industry. It needs to be stressed that the Act is designed to include a number of private projects, proceeding more or less in parallel, and that it should be considered in this light.

With respect to the UEA project, it must be recognized that negotiation of that particular proposed cooperative arrangement has not been completed. The Act contemplates that the basis for, and the general features of, any proposed cooperative arrangement are to be placed before the Committee, and subject to its oversight, before any arrangement could be entered into by the Administrator. Thus, in approving the Nuclear Fuel Assurance Act, the Committee would not, by that action, be approving a particular proposed arrangement with UEA. Rather, the Committee will have full opportunity to focus on and consider all aspects of the arrangement when a proposed cooperative arrangement is negotiated.

You have previously requested a copy of Dr. Seamans letter of October 14, 1975, to Mr. Staats providing our comments on the General Accounting Office's draft report on these matters. The GAO subsequently completed and submitted its report to the Committee, together with a summary section of our letter. However, since the detailed supporting rationale for our very significant disagreement with the conclusions of the draft report was not included in the GAO final report (and in the light of your request) I am herewith providing a complete copy of the October 14 letter.

While most of the factual inaccuracies of the draft report have been removed or corrected in the final version, the report remains, in our judgment, seriously deficient since its conclusions have not altered. We are now studying the GAO report in detail.

Sincerely,

/s/

Robert W. Fri
Deputy Administrator

Attachments:
1. Questions and Answers
2. October 14, 1975, letter

GENERAL QUESTIONS

1. How will UEA be able to build up design and management forces in the very short time schedule available? Where will they obtain experienced people in this very unique area?

Answer:

UEA would draw on the resources of Bechtel Corporation and its project subcontractors for engineering, procurement, construction, management, and the other more conventional design aspects of the project. Goodyear, another partner in UEA would be able to draw from its general management and operational experience in enrichment. UEA has, over the past three years, developed a cadre of technically qualified uranium enrichment design personnel. Because ERDA and its operating contractors are responsible for existing plants and for a major technology development effort, the experience and know how with respect to process design technology specific to enriching uranium rests largely with ERDA and its operating contractors. This experience can and will be made available to UEA from ERDA and its operating contractors on a full cost reimbursable basis.

2. What services are to be provided UEA and gas centrifuge proposals by ERDA?

Answer:

Services to be provided to UEA at full cost recovery include: Manufacture of barrier and seals; assistance in developing the plant description (establishing the size and numbers of stages); stage and cell layout; process engineering design; preparation of specifications for process and process related equipment; design review, review of development efforts; testing of new equipment; equipment supplier evaluation; review of startup operation and quality control procedures; development of training programs and training personnel, and developing environmental statements. It is expected that similar types of technical services would be requested and would be provided to successful bidders for gas centrifuge projects.

3. Do ERDA and its contractors have the resources and expert manpower to handle both the hedge plan and assistance to private enrichers?

Answer:

ERDA and its contractors do have the resources and engineering capability to handle simultaneously the gaseous diffusion "hedge plan" and assistance to UEA. Resources and expert manpower could be a problem if it were necessary to maintain both projects for a long period of time. However, we do not expect this to be a problem because we are assuming that the Congress will act in the near future on the President's plan and remove the uncertainty.

We are not certain at this time of the extent of the effort that may be requested by the centrifuge proposers, but we can continue the necessary conceptual design work for a gas centrifuge project with resources now available.

4. Is ERDA thinking about a revolving account for applying revenues against cost?

Answer:

ERDA has deferred further consideration of this matter until National Policy as to the future of the uranium enrichment program has been established.

In any consideration that is given to a revolving account, we must be very clear on the potential budget impact. For example:

A. There has been some confusion in thinking that revenue from existing plants could offset the cost of a new government plant when, in fact, the revenue now being received is largely a reimbursement of funds for the past and current construction and operation of the three existing plants. Building an add-on plant would involve negative cash flow into the 1990's for that plant.

B. Even the revenue from the existing plants has not yet reached a level where it fully offsets expenditures on those plants and will not do so until sometime in the early 1980's. If revenues from existing plants were to be placed in a revolving fund the costs of other ERDA programs would still have to be paid from taxes or higher deficits.

5. What is ERDA's target date for the start of design and power procurement if the UEA project is not accepted? What steps are being taken now in preparation for this possible event? (Proposals for architect engineers, construction, power and equipment, staffing, etc.)

Answer:

Conceptual design work has been under way since 1973. ERDA is maintaining a schedule that will permit completion of conceptual design and start of further design of an add-on diffusion plant at Portsmouth during the first quarter of CY 1976. This start will permit a half-size add-on diffusion

plant to be in full production in the first quarter of CY 84. In order to meet this schedule, it would be necessary to initiate negotiations for power procurement, and undertake further work to identify architect engineering and construction contractors, for the Portsmouth site during the first part of CY 1976. Requests for Proposals for obtaining necessary architect engineering and construction work are being developed.

6. How realistic is the target date of January 1976 for going ahead with UEA? What information has been supplied to ERDA by UEA since their initial proposal made in December 1974? (Covering such items as power, utility contracts, partners, foreign negotiations, antitrust data, market data, financial arrangements, etc.)

Answer:

From a technology and engineering point of view, a target date of January 1976 for going ahead with UEA is realistic. The development of the plant description and other determinations required to establish the basic design approach and criteria should be advanced enough by that time so that significant numbers of additional engineers and designers can be put on the job. Since December 1974 there has been through the industrial participation program, a continuing exchange of information with UEA, which includes the conceptual design work being accomplished for ERDA's hedge plan. UEA has incorporated the basic concepts included in the hedge plan in the planning for their project. An active consulting effort for UEA was initiated by ERDA and its operating contractors in August 1975. Work on the critical path to develop the UEA plant description has been accomplished. Cost of all work performed for UEA will be paid by UEA.

Extensive information was supplied by UEA in February - March 1975 which, together with that supplied by prospective centrifuge enrichers, has been helpful in development of the Administration's program.

We understand that UEA has had extensive discussions with a prospective power supplier (the Southern Company), that further studies are being made by the supplier, and that they are moving forward on what appears to be a sound basis. UEA has kept ERDA informally advised of their discussions with potential non-United States participant investors/ customers and expected domestic customers. UEA has kept ERDA generally advised of its activities toward securing domestic partners, including the recently announced partnership arrangement of Bechtel, Goodyear, and the Williams Companies. Early enactment of the Nuclear Fuel Assurance Act of 1975 would undoubtedly provide a stimulus to the parties to conclude these arrangements.

7. Did the UEA proposal originally contemplate governmental guarantees? Does the UEA proposal now have a competitor? Were potential competitors ever given the opportunity to compete with UEA on the basis that extensive governmental guarantees would be available?

Answer:

As detailed subsequently in the answers to these questions, the UEA proposal did originally contemplate Government guarantees. However, the current UEA proposal involves less Government assurance than its earlier proposal.

The UEA proposal was in response to the general policy first ennunciated by the AEC several years ago inviting industry to consider providing new enrichment capacity.

An attempt was also made in 1974 to obtain industry participation specifically in demonstration sized centrifuge enriching projects; however, the program was not successful because it was not sufficiently broad, either in its scope or in the type of assistance contemplated. Subsequently, on June 26, 1975, a Request for Proposals was issued for Centrifuge Enrichment Plants which recognized that substantial Government assistance would be required to bring such projects into being. This was an outgrowth of an extensive dialogue with prospective centrifuge enrichers. The three firms who have now submitted proposals (CENTAR, Exxon Nuclear and Garrett) have been fully cognizant of the proposed forms of Government cooperation and assurances that are embodied in the proposed Nuclear Fuel Assurance Act of 1975.

While the UEA proposal is the only one incorporating the gaseous diffusion process, we believe that the next increment of new enrichment capacity must employ this proven process to provide assurance of supply.

Both UEA and the centrifuge enrichers are now competing for customers.

8. Please make a comparison between the Bechtel December, 1974, proposal and their subsequent May, 1975, proposal. Does the May proposal appear to provide more overall guarantees to Bechtel/Goodyear or less?

Answer:

The December 1974 UEA proposal, as clarified in discussions with UEA, contemplated several forms of Government assistance, listed below. It must be recognized, however, that February - March discussions of this proposal sought to clarify all the forms of assistance that might be required rather than to arrive at the minimum possible assurances.

A. Completion Guarantees, involving:

1. Contingent Government loan guarantee (to assure an "A" rating for borrowings for domestic debt).

2. Overrun funding by further Government loan guarantees or direct Government loans.

3. Government assumption of domestic debt, compensation of domestic equity investors in case of "economic frustration" (e.g., licensing action delaying or preventing completion or operation).

B. ERDA termination of enough of its enriching services contracts to assure that the UEA plant is "sold out".

C. Government's assumption of a substantial portion of the obligations of defaulting domestic utility customers.

D. ERDA stockpile backup and load leveling of the UEA plant, involving:

1. Access to Government stockpile on lease or purchase basis at outset of operations and for 5 years thereafter to assure ability to meet customer needs, up to a maximum access of 11 million separative work units.

2. ERDA purchase of product for its stockpile during first 5 years of operation if necessary to assure levelized operation, up to a maximum of 6 million SWU.

E. Government warranty of technology performance and equipment furnished.

The May 1975 proposal substantially modified the earlier one by:

A. Replacing the completion guarantee with the concept of project takeover by the Government, should the private effort falter prior to commercial operation. In such event, all or part of the domestic equity investment could be lost, depending on degree of responsibility for failure.

B. Dropping the request that ERDA terminate enough contracts to load UEA's plant.

C. Dropping the request that the Government assume significant contingent liability with respect to defaulting utility obligations.

D. Limiting access to the Government stockpile to a maximum of 9 million SWU the first year, declining step wise to zero five years later. The ERDA purchase obligation, up to 6 million SWU, was not changed.

E. Government technology and equipment warranty requests were not changed.

The May 30, 1975, proposal involves considerably less Government-provided assurance than did the earlier proposal. There are now definable time limits on the Government's involvement, and the domestic equity proposes to assume greater risk.

FOREIGN PARTICIPATION

1. Is the U.S. plant commitment the first step in the sharing of enrichment technology with foreign entities? How detailed are the criteria for U.S. firms and foreign entity participation? What triggers private companies to allow them to discuss the sharing of enrichment technology with foreign entities? Following discussions, what triggers the actual exchange of enrichment technology with foreign entities?

Answer:

No; the U.S. plants to be constructed under the Nuclear Fuel Assurance Act do not involve access by foreign entities to enrichment technology. The commitment of a U.S. plant has nothing to do, per se, with sharing of enrichment technology and such sharing is neither more likely nor less likely due to commitment of such a plant. The possibility of technology sharing with a specific foreign entity is an independent event which must be judged on the basis of appropriate Government criteria. It has, however, been expected that any implementation of a technology sharing arrangement, which would have to meet the test of National interest, would be implemented through the U.S. private enrichment industry. The creation of the International Energy Agency has been regarded as signaling achievement of the broad cooperation in energy matters on which subsequent steps in considering enrichment technology sharing were dependent. On January 20, 1975, a meeting was held with companies active in ERDA's Industrial Participation Program. The policy of henceforth allowing U.S. companies who expect to provide enrichment capacity in the U.S. to initiate unclassified discussions with foreign entities, within the confines of the Atomic Energy Act and the requirements of Title 10 of the Code of Federal Regulations, Part 810 Rules and Procedures, was explained to the industrial participants. However, they were told clearly and explicitly that there could be no assumption that any proposed arrangement that might result from commercial negotiations would be approved by the U.S. Government. The Government would have to determine that the proposed arrangement would, on overall balance, be beneficial to the U.S. The Government's findings as to the acceptability of such proposals would consider:

1. compatibility with overall foreign policy objectives including effective international energy cooperation;

2. assurance that international security interest would be protected;

3. assurance of domestic U.S. interests including the surety of U.S. fuel supply needs being met, establishment of a competitive private supply industry;

4. reasonable compensation to the U.S. public for publicly developed technology.

Any arrangement which involved the transfer of classified information would be subject to an appropriate Agreement for Cooperation between the U.S. and the country or countries of the foreign entity and thus subject to Congressional oversight. No arrangements, which, if implemented, could result in technology sharing have been proposed to ERDA.

2. Has Bechtel performed unclassified work in the enrichment field for foreign entities? With whom, in what detail, for how much money, and how were such arrangements approved?

Answer:

The following is a brief summary of unclassified activities which Bechtel has been authorized by AEC/ERDA to perform for foreign clients under the provisions of 10CFR810 (formerly 10CFR110). In general we do not know the dollar value of such work. In any event the dollar value had no bearing upon whether approvals were given.

(1) Bechtel Siting Study for CEA (France) 1971

In early 1971, the CEA announced that they had selected Bechtel to conduct a site selection study for the Eurodif Enrichment Plant. Eurodif is based on French enrichment technology. The project was initiated at a meeting on May 1, 1971, and Bechtel was asked to find the optimum plant site in France for the enrichment facility based on a list of criteria specified by the CEA which included acreage and foundation requirements, power, transportation labor and water. No access was given to French enrichment technology and Bechtel had no access to U.S. technology. The study was conducted by the Bechtel staff working both in France and San Francisco. The site selection study recommended a site on the Rhine, however, the French selected a site at Pierrelatte (now known as Tricastin). The study was completed in March 1972.

This study did not require authorization under 10CFR110 as the requirement for specific authorization by the Commission for unclassified activities relating to uranium enrichment was not established until July 26, 1972.

(2) Technology Services Requested by BRINCO Ltd., Canada.

Bechtel was authorized to provide service in the following areas with respect to a proposed multinational enrichment plant in Canada.

a. Economic Studies - an analysis of unclassified capital and operating cost data to determine cash flow requirements, effect of escalation, and projected selling price of separative work.

b. Siting Studies - analysis of unclassified data on electric system requirements, cooling system requirements, site geology requirements for structures, transportation requirements, and other related areas.

c. Schedule Studies - preparation of a master time schedule for engineering and construction of the project to the extent possible with unclassified data.

d. Staff Training - instruction to BRINCO staff in the basic theoretical process calculations and unclassified published data pertinent to gaseous diffusion cascade operations to permit optimization studies and a technical understanding of a diffusion stage.

e. Market Studies - assist BRINCO in preparing detailed market demand studies including the quantities of enriched material required at various enrichment levels for various regional markets.

f. Presentations - to the extent required by BRINCO, utilizing data and information developed in the above tasks, support BRINCO in the preparation and presentation of information to potential investors, customers, and other interested groups.

The AEC, by letter of August 1, 1972, approved the preceding items of the Bechtel scope of work and advised Bechtel any additional assistance would require additional specific authorization by the Commission.

(3) Siting Study in Territory of Papua for a Japanese client

Bechtel was authorized by the AEC on June 5, 1973, to undertake this unclassified study provided there was no objection from the Australian and/or Papuan governments and the information to be provided by Bechtel was based on unclassified information available in the published literature. Approval of the two governments was obtained and Bechtel completed this study.

(4) UEA request to participate with the Japanese in a U.S. Enrichment Project Study.

UEA was authorized on July 31, 1973, to participate with the Japanese Enrichment Survey Committee in an evaluation study concerning an enrichment facility to be built in the U.S. The scope of work for this project included general management activities, preparation of a conceptual design for 9 million SWU Baseline Gaseous Diffusion and Gas Centrifuge Plants, preparation of a business plan incorporating marketing studies and preparation of a project financing plan.

The AEC authorization precluded transmission of any restricted data or other classified information, or unclassified technical data not available to the general public which might be considered useful in the design, fabrication or operation of a uranium enrichment facility, or specialized components especially designed therefor.

(5) Siting Study in Western Australia for Japanese Client

Bechtel was authorized by AEC letter dated November 15, 1973, to conduct the siting study based on unclassified published information if there were no objection by the Government of Australia. Bechtel has advised that this study was not conducted since the Government of Australia did not grant an authorization to the client.

(6) Supply of Unclassified Enrichment Technical Data to the Japanese.

The AEC authorized UEA to transmit an unclassified report containing technical data involving the gaseous diffusion process which was not available to the public in general form. The report was part of the work carried out under the evaluation phase of the joint UEA-ESC program. The report was reviewed for classification and technical content by AEC staff prior to UEA being authorized to release the report. The AEC authorization by letter of September 16, 1974, was given subject to the proviso that a commitment be obtained from the ESC that the data would be solely used for evaluation of further participation in the UEA project. The ESC provided such an assurance.

The AEC, by letter of October 17, 1974, authorized UEA to transmit an unclassified evaluation report covering a gas centrifuge complex to the ESC. This report was also reviewed for classification and technical content by staff prior to this authorization.

(7) Siting Study in Zaire

The AEC authorized Bechtel to conduct an unclassified site suitability study for a prospective uranium enrichment plant in the territory of Inga, Zaire. This study was authorized by an AEC letter dated November 1, 1974. This study was to be sponsored by the Syndicat d`Etude de L`Endustrie Atomique of Belgium with part or all of the costs to be borne by the Government of Zaire. We understand this study has not been carried out due to a lack of funding.

(8) Unclassified Business Data to Iran

The Administrator, by letter of January 29, 1975, authorized UEA to transmit its unclassified but proprietary Evaluation Phase Business Plan and Economic Analysis report to Iran.

(9) UEA Request to Transmit Unclassified Report Regarding Uranium Enrichment to Several Foreign Countries.

ERDA, by letter of March 6, 1975, authorized UEA to transmit to the Japanese ESC the following unclassified UEA proprietary reports:

GDP System Evaluation Studies - Plant Design
Add-on Plant Study
Short Gradient Study, and the
Evaluation Phase Business Plan and Economic Analysis Report

ERDA also authorized UEA to transmit its "Evaluation Phase Business Plan and Economic Analysis" report to the following prospective customers.

France	Italy	Spain
Electric de France	ENEL	ENUSA
CEA	CNEN	

3. If U.S. guarantees the gaseous diffusion process now, (which is different than the arrangements two years ago when there appeared to be no U.S. Government guarantees involved in any arrangement by which the government would allow private industry to get into the enrichment business) -- why should U.S. firms be allowed to benefit from the sharing of uranium technology when it appears that private firms have made no contribution to this effort and indeed even need governmental guarantees which would assure that there is no private financial risk?

   If these points are valid, shouldn't the question of sharing nuclear technology with foreign entities through private companies be reexamined in light of the U.S. Government guarantees of enrichment technology?

Answer:

First, there are several implications in the question that are not correct, e.g., that private firms will bear no financial risk. It is not correct to conclude that there is no private financial risk in enrichment ventures. Depending upon circumstances, there is risk of all or partial loss of equity, and/or loss of return on equity. The preceding statement applies to the UEA project, and it is likely that it will also apply to centrifuge projects. The question of guarantee of technology was not addressed two years ago. Now that this point has been addressed, it is clear that it is appropriate for the Government to guarantee the technology to prospective enrichers since the Government is the supplier. Private firms will pay a royalty. Furthermore, private firms have made, and it is expected that they will continue to make, contributions to enrichment technology at their own expense.

It appears that the question is directed toward the possibility of enrichment technology sharing which was outlined by Secretary Kissinger in 1974 at the Washington Energy Conference and which has been tied to achievement of certain National objectives. Any such technology sharing, if it were determined by the Government

to be in the National interest, is expected to be conducted through those private companies involved in uranium enrichment in the United States, recognizing, as one element, that U.S. taxpayers would receive reasonable compensation e.g. royalties for Government-developed technology. The prime criterion is that the United States should benefit in any such arrangement. The use of private firms as a channel for enrichment technology sharing abroad is appropriate for the following reasons:

(1) Future decisions regarding any implementation of the technology exchange principle remain totally in Government hands, to be decided upon on the basis of National interest.

(2) It is consistent with the premise that the U.S. system will be one of private enterprise.

(3) It encourages private enterprise to invest in uranium enrichment projects which will lead to a private competitive enrichment industry, and further the development of enrichment technology by the private sector.

(4) It tends to encourage foreign investment in U.S. private enriching projects as a way of establishing relationships with the U.S. companies.

(5) It does not prevent the Government from obtaining desired Government benefits that would have to be obtained as a part of any approved arrangement.

It should be strongly stressed that involvement by a private entity in domestic enrichment establishes no prior right to technology sharing. On the contrary, the Government retains full control over whether, or under what conditions, such might be permitted.

4. Which foreign nations are expected to contract with UEA to buy into the plant? When is it expected that these nations will sign a final agreement indicating funds to be paid and the percentage of their buy-in to the UEA plant? Has the Department of State discussed the UEA arrangements with the foreign governments or organizations since the President's June 26, 1975 announcement? If so, what has been the foreign reaction?

Answer:

UEA has indicated that it expects its major investors abroad to be Iran, Japan, France and West Germany, with lesser participation by other countries such as Italy, Spain, Portugal, Switzerland, Taiwan, and Australia. It is expected that passage of the Nuclear Fuel Assurance Act of 1975 would remove uncertainties that may be impeding foreign investors' decisions to participate financially in the project since it would then be clear that Congress supports the transition to a private enrichment industry.

Since the President's June 26, 1975, announcement, the Department of State, primarily through its embassies, has discussed with Japan and Iran the President's Plan for uranium enrichment expansion including UEA's proposed project. ERDA has also discussed this matter with officials of these two countries. Japan has stated that it is still too early to make specific arrangements with any of the U.S. potential private enrichers and it will make no decision until after it has carefully reviewed its enrichment needs, the Nuclear Fuel Assurance Act is passed, and specific contracts between ERDA and U.S. enrichment projects are written. Iran has previously expressed its willingness to participate in UEA but this is contingent upon the negotiation of an Agreement for Cooperation. As of the present time, these negotiations are still in progress.

5. How does the U.S. plan to avoid foreign controlling interest in the UEA proposal? (For example, foreign governments might exert pressure on U.S. companies that do business overseas in their country).

Answer:

The U.S. will insure that there is no foreign domination of the UEA project through its licensing process giving due recognition to all appropriate factors. Under the Atomic Energy Act, NRC must, as a condition of granting a license, assure that the UEA project is not subject to foreign domination. Also, ERDA plans to require that UEA offer foreign investors only a minority of ERDA voting rights. UEA has established Uranium Enrichment Technology, Inc. which is totally U.S. owned and which will be the entity with access to the technology, and Uranium Enrichment Services, Inc. covering financial and marketing matters, in which foreign interests will have the previously discussed minority voting rights.

6. What are the rights of foreign entities if there is a takeover of UEA by the U.S. Government in the event that the UEA venture fails? Does the U.S. repay in enriched uranium, in enriching services or money, or does the U.S. Government have no obligation to foreign entities?

Answer:

We believe that the possibility of takeover is remote since the U.S. Government would be involved in the project from the outset and under conditions which will serve to make takeover highly unlikely. In all reasonable circumstances, however, if takeover were to take place near plant completion, the project would result in an operable plant. In this case all plant investment would be protected automatically by long term sales contracts for plant output. However, if the UEA venture involves takeover by the U.S. Government at an early stage, involving proportionately smaller investments to that point, the rights of foreign entities could vary according to what the U.S. Government actually did with the plant. If the plant were completed and operated successfully

by ERDA, as is most likely, foreign debt and equity relationships would continue as the project was originally conceived, i.e., foreign customers/investors would receive their product on the basis of the project pricing formula which would recognize all project-related costs, including investment costs. The foreign investors would then have the U.S. Government as a partner in the plant.

It is the intention of the U.S. Government to complete the plant in the event of the takeover unless it would be to the economic advantage of the plant's customers, both domestic and foreign to provide alternate capacity.

In the remote contingency that the plant were not completed by the Government, foreign investors would receive, in fair and reasonable settlement of their interests:

a. Any funds provided by them not required for liquidation of their share of obligations of the venture; and

b. their share of the value associated with liquidation of the assets of the venture.

Furthermore, under such conditions the Government would be willing to consider the possibility of foreign investment in any alternative project constructed by the U.S. Government. And, of couse, the possibility of foreign participation in other private ventures would also exist.

However, of most significance, all customers, both foreign and domestic, which had contracted for enrichment services from the uncompleted plant would be assured by the U.S. Government that their contracted amounts of, and schedules for, enrichment services would be met by other domestic sources.

It is to be emphasized that the type of ERDA participation contemplated in the program gives great assurance that projects will perform successfully, essentially equivalent in our judgment to the assurance associated with direct Government construction of new facilities.

7. Do foreign customers in the UEA venture want a long-term commitment insuring that there would be no U.S. export control relating to their arrangement under the UEA concept? If so, does this interfere with the Nuclear Regulatory Commission's role in this field?

Answer:

We are not aware of any specific request of this nature. In any event, there is no action contemplated to exempt foreign sales by UEA from export controls or to interfere in any way with the Nuclear Regulatory Commission's role in this field.

8. Is the UEA arrangement dealing in enrichment services as a commodity rather than filling orders for identified reactors as is now the case in ERDA? If the UEA arrangement with foreign entities can be in terms of a commodity, what arrangements have been made regarding excess material that a foreign nation might accumulate?

Please explain how difficult it is to enrich uranium up to 4%. Also, please explain the additional difficulty to enrich the 4% uranium to 90%. Is it correct to say that most of the work in enrichment is done to get the material up to 4% with it being much less difficult to go from 4% to 90%?

Answer:

Under the proposed UEA arrangement, enrichment services would be dealt in as a commodity to the extent that identified reactors were not involved. As such a commodity, it would be subject to all appropriate domestic controls while in this country. Any excess material that a foreign nation might be permitted to transfer from the United States would be subject to the same export license and other requirements, including the appropriate provisions of the applicable Agreement for Cooperation, as now prevail or as might be required in the future.

Depending upon the operating tails assay, 85-90% of the separative work required to produce 90% enriched product has been expended in bringing normal assay feed to 4% enrichment.

To enrich uranium to 4% utilizing gaseous diffusion requires three sizes of equipment, which for a 9 million SWU plant are quite large in physical size. There would be a total of approximately 1200 stages, utilizing approximately 2400 MW of power. Such a plant could produce higher enrichment by operating at a low effeciency and at reduced power or by operating in a batch mode. In such a mode, the product would be withdrawn at an intermediate enrichment, the plant shut down, cleaned out, and the product refed and enriched to a higher level. These abnormal operations would be readily observable under applicable IAEA safeguards procedures, and would be very costly in both time and money. For comparison purposes, a gaseous diffusion plant specifically designed to enrich material to 90% or more would require several sizes of equipment and about 4200 stages.

If the gas centrifuge process were being used, only one size of equipment, albeit large and complicated, is involved in a production plant. Due to the higher enrichment per stage of equipment -- relative to the gaseous diffusion process -- only a relatively few additional stages would be required to enrich material from 4% to 90%. Materials safeguards, control, and tamperproof instrumentation could detect such abnormal operations in a centrifuge enrichment plant.

It is because of non-proliferation concerns such as this question raises that we believe it is in our best interests that the U.S. move more aggressively to provide timely U.S. enrichment capacity to serve a large portion at the foreign market, as such action would be expected to inhibit further construction of foreign enrichment projects.

9. What studies have been performed by the U.S. Government regarding the classification of technology in the event of the sharing of enrichment technology with foreign entities as proposed by the Administration?

Answer:

As indicated previously, enrichment technology sharing with foreign entities has not been proposed by the Administration. It has been held out as a contingent possibility if certain National interest benefits could be achieved and then only after appropriate review. To date there have been no studies regarding the classification of technology in the hypothetical event of sharing enrichment information with foreign entities. As noted in the answer to question #1, above, an arrangement for the sharing of U.S. enrichment technology would be judged on the basis of certain criteria, including the "assurance that international security interests would be protected." If the determination is made that information classified by the U.S. will not be compromised or used to the detriment of the common defense and security and the other criteria are met, then the sharing of enrichment technology could be considered under the provisions of the Atomic Energy Act of 1954, as amended. Any decision to make available unclassified, unpublished enrichment technology is, of course, also subject to similar legal criteria. In any event, classification policy decisions with regard to uranium enrichment technology will continue to be made on the basis of a careful evaluation of the benefits to the U.S. versus the risks to the common defense and security of the release of any information.

TAKEOVER BY U.S. GOVERNMENT IN THE EVENT THE UEA VENTURE FAILS

1. Is there sufficient inventory of separative work units to cover the long delay that would appear to be inherent in a takeover of the UEA plant by the Government in the next several years?

Answer:

Government participation in the UEA project is designed to assure that the project will work, thus the prospect of takeover is very remote. However, ERDA is making its stockpile plans to cover the eventuality that delays which impact agreed upon delivery commitments could occur whether involving takeover or not. ERDA will have available up to 9 million SWU (1 year's production from the UEA project) to "backstop" such a delay. Stockpile backup for new capacity is not unique to the UEA project. Even if the Government were to build additional enrichment capacity, a comparable stockpile backup would still have to be maintained to protect against potential project delays. We do not feel that there would be a "long delay" inherent in takeover of the project from UEA if that were ever necessary.

2. The UEA venture appears to have within it the requirements for a dual organization because of Government guarantees. This dual management concept of shared responsibilities appears to be similar to the Clinch River arrangement. Does this potential problem increase the possibility of Government takeover as has been the case in the Clinch River Breeder Reactor?

Answer:

The basic management concept that UEA proposes for their project would vest the responsibility for management of all engineering, construction and operation with UEA. ERDA's responsibilities for guaranteeing plant operability involve identifying criteria which must be met to warrant Government-supplied components, plant operation and performance, and monitoring the project to assure that these criteria are incorporated in the design, construction, and operation. We do not see the Government's role in support of its warranting the operation and performance of the process as involving a mixed management situation as exist in the CRBR. It will, of course, be necessary for ERDA to set up a group to follow the project and exercise the various review and approval functions necessary in support of the Government's warranties and contingent liabilities, currently being spelled out in the negotiations of the basic ERDA/UEA contractual arrangement. Services provided to the project from ERDA and its contractors would be on a full-cost recovery basis.

3. What are the different actions needed now in the event of the transfer to the Government of UEA facilities and obligations in the event that UEA venture fails? For example, what would be the Government's role and responsibility in regard to (a) terms and charges for enrichment services (b) schedule of deliveries (c) commitments to subcontractors and suppliers and (d) obligations and any special arrangements between customers and UEA.

Answer:

In the remote event that the Government were to take over the project, we would expect to inherit an operable plant or one which could be made operable upon completion of construction. In such event, the Government would assume UEA's rights and obligations under UEA's contracts with others for the provision of services, materials, and equipment required for the design, construction and operation of the project and would assume UEA's obligations to supply enrichment services in the amount and on the schedule contracted for by its customers. Actions necessary at this time concerning these matters are the negotiation of appropriate provisions in the cooperative arrangement between UEA and ERDA affording ERDA sufficient participation in the development of the terms and conditions for UEA's contracts with its suppliers and customers to assure the provision of services and materials to the project in a timely and competent manner and that the amount and schedule of enriching services committed to be supplied can reasonably be met by ERDA from the project's capacity (and/or ERDA's other sources of supply) in the event the project experiences difficulty. In this sense ERDA's actions would be essentially equivalent to those it would take if it supplied services from its own new capacity.

4. When does the U.S. Government commitment to takeover UEA end?

Answer:

The UEA proposal of May 30, 1975, proposes that this commitment would cease "one year after full scale, steady commercial operations". The precise definition of this term is being established in the UEA/ERDA cooperative arrangement.

ANTITRUST

1. Will UEA's entry into the enrichment field delay competition? Is price regulation a necessary step in connection with this venture?

Answer:

We do not believe UEA's entry will delay competition. In fact, as noted earlier, UEA, CENTAR, Exxon, Garrett, and above all, foreign suppliers are presently competing for customers.

Price regulation would not appear to be a necessary step at this time in connection with the UEA venture. Assistant Attorney General Thomas E. Kauper expressed this opinion in his testimony during Phase I of the hearings before the JCAE on actions necessary to be taken to insure supply of enriched uranium sufficient to meet present and future needs. He indicated that the justification for price regulation would be that the economics of the enrichment process require that the industry will be a monopoly or, absent a natural monopoly, consist of a small number of competitors having the ability to set monopoly prices. With respect to the latter possibility he noted that enrichment customers are not small or extremely numerous and are sophisticated and informed customers who could be expected to have a bargaining position offsetting, to some degree, excessive pricing as in an oligopoly.

2. If the startup of UEA is delayed to as late as 1983-85, should this proposal be considered in competition with gas centrifuge proposals?

Answer:

No. As stated in the answers to General Question 7, the UEA proposal is not considered to be an alternative to the gas centrifuge proposals. We believe that the next increment of added capacity, even if it should suffer such delays, should employ the proven gaseous diffusion process. The availability of this capacity will provide assurance of supply and will permit flexibility in the timing and sizing of centrifuge projects whose economics remain to be proven in a large scale production environment. Since delay could affect either new gaseous diffusion or centrifuge plants, we believe it is clearly in the National interest to have both processes moving forward essentially in parrallel.

3. What are the antitrust implications if UEA or gas centrifuge proposers decide to get into the business of purchasing supplies of uranium feed as well as the business of producing and selling enriched uranium? Which agency or department would rule on any such questions?

Answer:

We wish to defer to the views of the Department of Justice and the Nuclear Regulatory Commission, which have jurisdiction over such matters, as to the antitrust implications of UEA or gas centrifuge proposers deciding to enter the business of purchasing supplies of uranium feed as well as the business of producing and selling enriched uranium. Whether such vertical integration would be considered inconsistent with the antitrust laws will depend upon the analysis of the Department and the Commission.

4. Is UEA pricing nondiscriminatory or does the first buyer-in receive a favored position?

Answer:

Although UEA's negotiation with potential customers of the terms of UEA's contract to supply enriching services have not been concluded, we understand that UEA contemplates offering a favored position to customers making 25 year commitments to take enriching services in an amount sufficient to support UEA's proceeding with its project, i.e., contracts covering at least 75% of plant capacity. We understand that the price for services to these customers will be nondiscriminatory among them and will normally consist of the costs of such services plus a 15% return on equity after taxes. The remaining "additional capacity", if any, would be sold to subsequent customers at the best market price obtainable with some of the proceeds of such sales applied to reduce costs payable by initial customers.

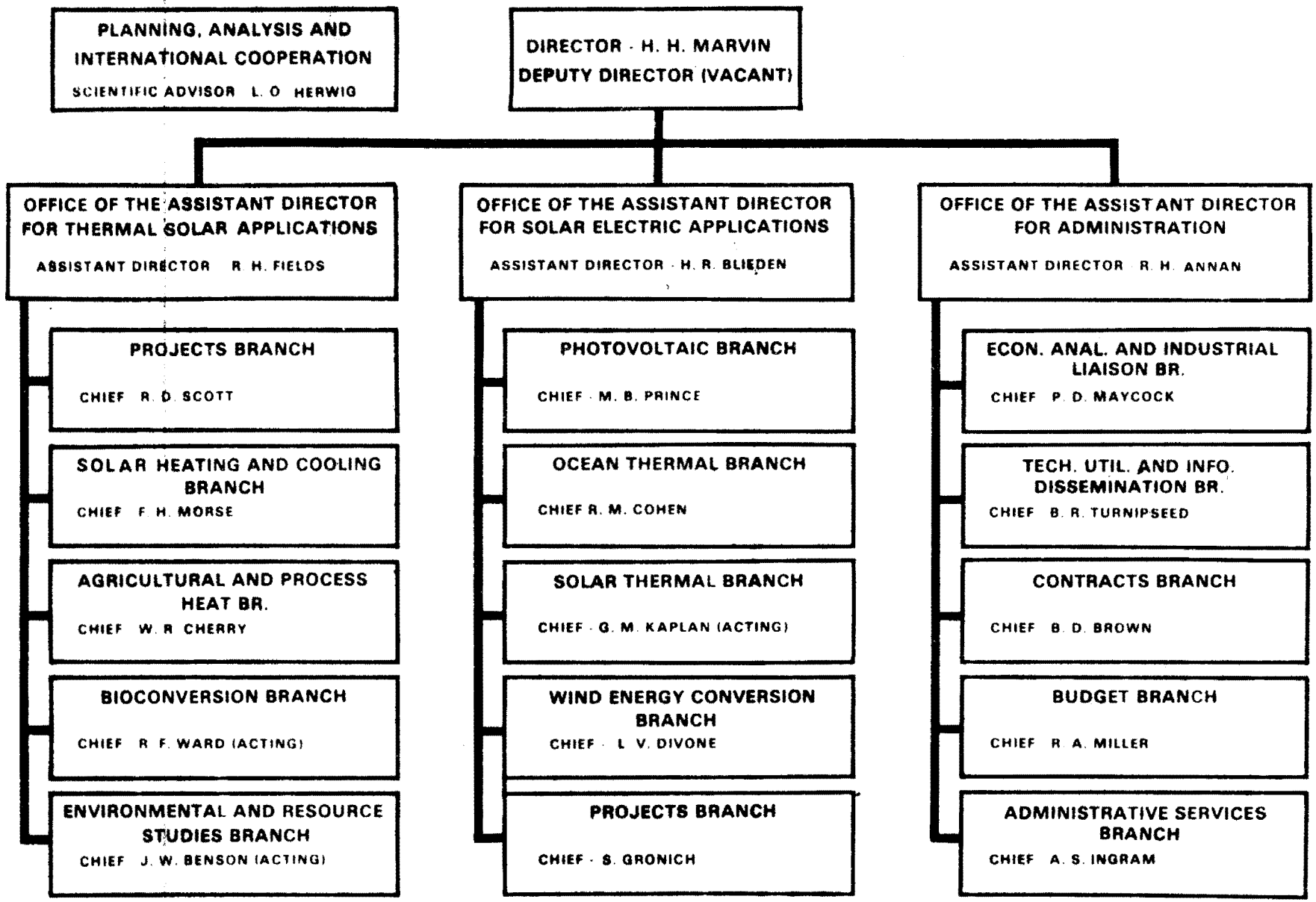
5. Should the U.S. Government permit the same financial groups or companies to commit investments in both UEA and gas centrifuge proposals?

Answer:

Again we wish to defer to the views of the Department of Justice and the Nuclear Regulatory Commission. Inasmuch as one of the barriers to entry in the enrichment industry is its capital intensive nature, permitting the same financial groups and companies to participate in more than one enrichment venture could result in additional ventures and a more competitive industry. Of course, the antitrust laws would apply to restrain any anti-competitive practices.

DIVISION OF SOLAR ENERGY

NOVEMBER 5, 1975



October 14, 1975

The Honorable Elmer B. Staats
The Comptroller General
of the United States
Washington, D.C. 20548

Dear Mr. Staats:

Thank you for the opportunity to review and comment on your draft report on the expansion of uranium enrichment capacity in the United States. As indicated in the President's June 26, 1975, message to Congress, this matter is of great importance to the Nation.

The President's proposal was designed to:

- Make clear immediately our National commitment to provide the needed increase in U.S. capacity to produce enriched uranium for domestic and foreign nuclear power plants.

- Retain U.S. leadership as a supplier of services and technology for peaceful uses of nuclear energy.

- Assure early creation of a private competitive uranium enrichment industry -- ending the Government monopoly.

- Accomplish the above with little or no cost to taxpayers and with all necessary controls and safeguards.

In contrast to the President's proposal, the GAO draft report concludes that (a) ERDA should reject the proposal received from the private firm that wishes to build a gaseous diffusion plant, (b) the Government should build and own the next increment of needed capacity, and (c) that a Government Corporation should be created to take over existing and the next new capacity.

We believe the most complete, accurate and objective possible analysis and presentation of the problems, issues, and alternatives is necessary to increase public understanding of the President's proposal and to provide the basis for early Congressional action on that proposal. However, as detailed below, the presentation, analysis and evaluation in your draft report is not sufficiently complete, accurate or objective to sustain its conclusions.

We believe the report should be improved substantially because it:

- Does not address fully the President's proposal.
- Contains factual inaccuracies or misinterpretations.
- Omits important considerations which, if taken into account, would lead to different conclusions.
- Reflects philosophic preferences (e.g., for a Government Corporation) rather than an objective evaluation of the many considerations involved.
- Does not emphasize the urgency of a decision on expanding the Nation's uranium enrichment capacity -- which is important to our international leadership in nuclear energy and our non-proliferation objectives.

Briefly, our major substantive reservations about the report are summarized below. Each of these points is discussed further in Attachment A and detailed page-by-page comments on the draft report are included in Attachment B.

- The draft report is almost exclusively limited to a discussion of a proposal (still under negotiation) from one industrial group -- Uranium Enrichment Associates -- UEA, almost to the exclusion of an evaluation of the President's total program which would cover a number of cooperative agreements with firms that wish to build plants using diffusion and centrifuge technology in the transition to a private competitive industry.

- The draft report does not reflect a clear understanding of the remaining uncertainties in centrifuge technology or the role that both technologies can play in sequence in achieving a private competitive industry.

- The report does not seem to recognize that following its conclusions may prevent ever achieving a private competitive uranium enrichment industry -- even though it professes to support that objective.

- The report (a) understates the risks to be assumed by private firms that are contemplated in the President's proposal, (b) understates the risks to UEA in its proposal, and (c) overstates the potential risks and costs to the Government.

- The report does not analyze objectively its strong recommendation that a Government corporation be created to provide uranium enrichment services -- which corporation would have many of the same drawbacks as direct government financing.

- The discussion of cash flow and Government financing is inaccurate and misleading in that it (a) does not make clear the large budget outlays that would result over the next few years if the Government builds new capacity; (b) incorrectly implies that costs of a new add-on Government plant would be recouped in about 6 years; and (c) confuses revenue from existing plants and eventual revenue from a new add-on Government plant. The revenue from existing plants is largely a repayment for past and current costs to taxpayers for building and operating these plants.

- The statement that Government-owned capacity could be added at a cost significantly less than that of a similar sized privately-owned plant ignores the broader benefits of private financing and ownership of uranium enrichment plants including the possibility of attracting some $2 billion in foreign capital for the UEA plant.

- While an early decision on the approach to expansion of U.S. capacity is essential to maintain the credibility of the U.S. as a reliable supply source, a delay of one year or two -- beyond the UEA planned date for having a plant on line -- would not present serious problems. Furthermore, although a half-sized, Government-owned add-on plant could be completed by the beginning of 1984, a plant equivalent in capacity to the proposed UEA plant could not be brought on line until at least 18 months after the presently scheduled date for UEA plant compeletion (mid-1983).

- The criticism in the draft report of private ventures' plans to obtain long-term "take-or-pay" contracts for enrichment services, and implied criticism of not providing the uranium which is to be enriched, suggests that GAO may not recognize current, widely accepted practices. "Take-or-pay" contracts are now used by ERDA in selling services from existing plants and are often used in industry -- for example by utilities in purchasing coal.

- The criticism of private ventures' slowness in signing up foreign customers suggests a lack of understanding of the impact of the uncertainty while Congressional action is awaited, and the positive effect that early Congressional approval would have.

. The report is correct in concluding that the safeguarding of nuclear materials and protection of classified technology is not an issue in the debate over Government vs. private ownership of a plant. However, we believe the report should emphasize that prompt action toward expanding the Nation's uranium enrichment capacity would be a major contribution to continued U.S. technological leadership and to non-proliferation objectives.

We urge strongly that the General Accounting Office proceed promptly with the correction and completion of its report so that it will not contribute further to delay in Congressional action on the President's proposal. We believe it is essential that a National decision on the means for expanding U.S. capacity to enrich uranium be reached without further delay.

We are prepared to cooperate fully in providing any additional information and assistance that you might need in completing your report.

Sincerely,

Signed, R.C. Seamans

Robert C. Seamans, Jr.
Administrator

ATTACHMENT A

DETAILED DISCUSSION OF PROBLEMS SUMMARIZED
IN THE LETTER TO MR. STAATS

The draft report is almost exclusively limited to a discussion of a proposal -- still under negotiation -- from one industry group, almost to the exclusion of an evaluation of the President's total proposal. Thus, it does not address the main issue which is the appropriateness and adequacy of the President's plan.

- The President's legislative proposal provides the basis for negotiating cooperative agreements with a number of private firms that propose to finance, build, own, and operate uranium enrichment plants -- both diffusion and centrifuge -- so that the Nation may move toward a private competitive industry.

- The context for this proposal is important:

  - The Atomic Energy Act requires that "The development, use and control of atomic energy shall be directed so as to . . . strengthen free competition in private enterprise."

  - A program was undertaken to provide industry with access to enrichment technology so that firms could decide whether to enter the field.

  - One firm, Uranium Enrichment Associates (UEA), has proposed to build a plant utilizing the proven gaseous diffusion process to satisfy the need for the next increment of capacity. Three firms have now proposed plants using centrifuge technology for succeeding increments.

- The draft report focuses narrowly on the proposal submitted by UEA. This proposal is important because it is the only one that deals with the next increment of needed capacity. However, it must be viewed in its proper context, i.e., as the starting point for negotiating a cooperative agreement under the proposed legislation and as an important first step in private financing and ownership of all future increments of capacity.

. Contrary to the implications of the draft report, the terms in the UEA proposal are still under negotiation and have not been accepted by the Government. Work is underway on the draft of a definitive contract.

2. The draft report does not reflect a clear understanding of the remaining uncertainties in centrifuge technology or the role that both diffusion and centrifuge technology play in sequence in moving toward a private competitive uranium enrichment industry.

. Misunderstandings are reflected in the report's:

  . Prompt dismissal of diffusion as being unimportant in moving toward private involvement, and the jump to centrifuge as an easier -- rather than more difficult -- solution without private financing and ownership of a diffusion plant as a first step.

  . Conclusion that UEA's choice of diffusion technology is one valid reason for rejecting its proposal.

  . Repeated reference to centrifuge as the "more efficient technology" -- without recognizing the uncertainties associated with it.

  . Suggestion that centrifuge ventures should accept more risk when centrifuge involves greater risks.

. There is general agreement that the next increment of capacity should utilize diffusion technology. There is also substantial agreement that succeeding increments should utilize centrifuge technology -- but this is not assured. Substantial economic uncertainties remain and the diffusion process may still be competitive for future increments.

. U.S. centrifuge technology is well ahead of other nations and a pilot production plant is scheduled to be completed in 1976. But, we do not yet know the economics and reliability, for example, of mass production of the required large number of centrifuge units, or the operating, maintenance and replacement costs of such mass produced units.

. Because of greater uncertainties, private firms wishing to use the centrifuge process may need more assistance and be able to assume less risk -- directly contrary to the report's conclusions.

- A successful private diffusion venture would -- contrary to the draft report -- have a direct relationship to the success of private centrifuge ventures. For example, it could demonstrate:

  - The end of uncertainty -- rather than continued delay -- as to whether the Government is serious about establishing a private competitive industry and ending its monopoly.

  - That private industry can raise capital for building enrichment plants and establish satisfactory relationships with customers, both domestic and foreign.

  - That private industry financing and ownership is possible while maintaining all necessary controls and safeguards.

3. The draft report does not seem to recognize that following its conclusions may prevent ever achieving a private competitive uranium enrichment industry in the U.S. The report indicates support for the objective of a private uranium enrichment industry but recommends (a) summarily rejecting the private industry proposal for building a diffusion plant -- rather than pursuing negotiations toward a cooperative agreement, (b) building additional Government-owned capacity, and (c) creating a Government Corporation.

   - Ending a Government monopoly is extremely difficult at best. The current need to commit to major new plants offers an excellent opportunity. The progress that has been made thus far in moving toward a private competitive industry -- including the proposals now before ERDA -- is the result of (a) the statutory requirement cited earlier, (b) a strong policy position taken in 1971, and (c) a vigorous effort by industry to respond to the Government's actions, and (d) a concerted effort by the Government to define conditions under which such involvement can occur with all necessary controls and safeguards.

- To decide now to build more government-owned capacity (after a period of many years without constructing new plants) could not help but cast doubts -- among potential private industry participants and customers, domestic and foreign -- about current or future assertions that the Government is serious in its efforts to involve industry and end its monopoly.

- Contrary to implications in the report, there is no strong reason to suggest that it would be easier or more effective to begin the transition to a competitive industry with centrifuge technology. Not only would the same types of Government cooperation and temporary assurances be required -- and possibly more because of the larger uncertainties -- but the creation of a Government corporation at this time would undercut the whole concept of a private industry in the field.

4. The draft report (a) understates the risks to be assumed by private firms contemplated in the President's proposal, (b) particularly understates the risk to UEA in its proposal, and (c) overstates the potential risk to the Government.

- The report fails to recognize the risks that private firms would have in dealing with multi-billion dollar projects involving classified technology which has not yet been proven in a commercial setting. Without exception, potential entrants in the enriching industry and representatives of the U.S. financial community viewed this activity as presenting abnormal business risk -- according to their testimony before the JCAE in 1974 hearings.

- The report does not recognize adequately that, under the President's proposal, Government assurances would last only for a limited transition period and then terminate automatically, leaving the plant owner with many business risks for at least the 20-25 year period of plant operation.

- The report recommends getting "more equitable sharing of risks" when centrifuge technology is ready, but gives no clear indication of what, specifically, would constitute "more equitable sharing of risks" or how this goal might be achieved. There seems no recognition that centrifuge technology, in the near term, involves more risk than diffusion technology.

- In the case of the UEA proposal, the report (a) erroneously states or implies in several contexts that UEA would receive a guaranteed 15% return on equity, and (b) fails to grasp that, while complete loss of private equity in the project is perhaps remote, there is a substantial risk of partial loss of private equity. Thus, the report gives an erroneous and distorted view of the UEA proposal. It is particularly important that the question of risk be completely and fairly treated since "inadequate risk" is central to the GAO thesis that the proposal be rejected.

- The report implies that there are substantial financial risks to the Government, e.g., the implication at the outset that the Government probably would spend $8 billion to implement its proposed program -- when the plan virtually assures that this will not happen.

- The report fails to note that even under the most severe consequances (need for Government to take over a project) -- let alone the more likely circumstances, Government funds would not be at risk. Government funds would all be recovered, normally from the private project but, in any case, from the sale of uranium enrichment services.

- The argument that risks would be unduly shifted to the Federal Government overlooks the fact that if the Federal Government finances and owns additional capacity it bears all the risks for the entire life of plants.

5. The draft report does not analyze objectively its strong recommendation that a Government corporation be created to provide uranium enrichment services. For example:

   - The assertion that management by a Government corporation would be "more effective" is not backed up by reasons -- other than freedom from the budget and appropriations process which may be undesirable.

   - The report seems to conclude that a Government corporation is somehow substantially different from the present ERDA-run operation when, in fact, it still amounts essentially to continuation of a Government monopoly.

- Many disadvantages of a Government corporation -- which also apply in most cases to the present operations -- are not mentioned, including:

  - Uranium enrichment is not an activity that can be performed well only by the Federal Government. It is essentially a commercial/industrial activity.

  - Uranium enrichment service capacity must expand rapidly over the next few years and that expansion could occur in the private sector -- rather than swell the Federal sector.

  - Borrowing from the Treasury by a Government corporation -- as in the case of ERDA building added capacity -- would add to the total of the national debt and net outlays would add to the Federal budget deficit.

  - As the Nation's reliance on nuclear power grows, maintaining a Federal monopoly would lead to an unprecedented degree of Federal control over the Nation's electrical energy supply and ending that monopoly could become even more difficult with an entrenched Government corporation.

  - The Nation would forego the advantages of private competition which can provide incentives over the long run for lower costs, improved efficiences and technological advancement -- as well as a more diverse base for utilities to obtain their fuel.

- The argument in the report that UEA may encounter problems in obtaining long-term debt financing because of anticipated shortages of capital in the U.S. would apply equally to borrowing by a Government Corporation.

- The possibility of setting up a Government Corporation -- to take over existing plants and finance, build and operate new capacity -- in time to meet the U.S. needs for additional capacity is open to serious question.

6. The discussion of cash flow and Government financing is inaccurate and misleading in that it (a) does not make clear the large budget outlays that would result over the next few years if the Government builds new capacity; (b) incorrectly implies that costs of a new add-on Government plant would be recouped in about 6 years; and (c) confuses revenue from existing plants and eventual revenue from a new add-on Government plant.

- Construction of additional Government enriching facilities would have a significant near term budget impact. The initial increment of a Government add-on plant would involve budget outlays in the period of FY 1976 to FY 1983 of about $1.6 billion (1976 dollars). A Government-owned plant comparable in size to the UEA plant would require nearly $2.5 billion (in 1976 dollars) in outlays between FY 1976 and FY 1983.

- These outlays could represent a significant additional financing requirement from domestic funds, particularly over the next few years. The UEA proposal submitted in May and now the subject of negotiations contemplates using significant amounts of foreign capital -- but with firm U.S. control of the venture -- thus minimizing the impact of financing requirements on domestic capital markets.

- An add-on plant would not produce enough revenue to recoup costs until after 1990 rather than in 6 years as the draft report implies.

- Revenues from existing uranium enriching plants largely represent a repayment for costs borne by the taxpayers. These revenues are counted on to offset the costs of existing plants and other Federal programs and, if not available for this purpose, would have to be replaced by higher taxes or deficits. These revenues should not be confused with the eventual revenues from building new Government capacity.

7. The statement that Government-owned capacity could be added at a cost significantly less than that of a similar sized privately-owned plant ignores the broader benefits of private financing and ownership of uranium enrichment plants.

. There undoubtedly would be some savings in building an add-on Government facility -- through use of common support facilities and from tying in with an existing plant's production process; but a construction cost differential is unlikely to be as great as GAO's estimate of $600 million.

However, it must be recognized that this differential (a) ignores the substantial advantages of moving toward a private competitive industry, and (b) ignores the greater potential of drawing on foreign sources of financing (but with U.S. control) if private industry is involved. The UEA proposal contemplates attracting some $2 billion in foreign capital which, if it can be attained, would result in domestic capital financing of some $1 billion less than for a Government plant.

. A number of the benefits of private financing and ownership are summarized under point 5, above.

8. While an early decision on the approach to expansion of U.S. capacity is essential to maintain the credibility of the U.S. as a reliable supply source, a delay of a year or two beyond UEA's planned dates for actually having a plant on the line would not present serious problems.

. The draft report reflects concern about potential slippage in the date when UEA would have a plant on line. UEA's proposal contemplates initial production in 1981 with full production in mid-1983.

. If the Government were to add on a "half-size" plant to an existing plant, initial production would not begin until 1983, with full production at the beginning of 1984. If the add-on plant was equivalent in capacity to that of the UEA-proposed plant, initial production would commence in 1983 with full production at the beginning of 1985.

- In any case, the cancellations in nuclear power plant orders and slippages in plant on-line dates here and abroad -- combined with the ability of the U.S. Government to use its stockpile of enriched uranium -- would allow flexibility to accommodate some slippage in the on-line date proposed by UEA.

- Whether or not there would be a delay is still a matter of conjecture. Some believe UEA could not meet its proposed schedule; others point out that privately-managed construction projects could move more quickly than those undertaken for the Government.

9. The criticism of private ventures' plans to obtain long-term "take-or-pay" contracts for enrichment services, and implied criticism for not providing the uranium to be enriched, suggests a lack of understanding of current, widely-accepted practices.

- Long-term "take-or-pay" contracts are now used by ERDA for enrichment services from Government-owned plants and foreign sources. Also, ERDA contracts require a substantial customer down payment. Moreover, firms planning to employ centrifuge technology will most likely employ long-term "take-or-pay" contracts.

- Long-term "take-or-pay" contracts are common in industry, particularly between utilities and firms in the coal industry. Such contracts are used as security for obtaining long-term debt financing when large capital investments are required, as in opening new coal mines.

- Uranium feed materials are not conventionally supplied by any uranium enricher.

10. The criticism of private ventures' slowness in signing up foreign customers suggests a lack of understanding of the impact of the uncertainty while Congressional action is awaited.

- The need for Congressional action on the President's legislative proposal is well recognized by potential domestic and foreign customers and investors.

- The preference in some quarters for continuing the Government monopoly through building added capacity by ERDA or a Government Corporation is also well known.

- Both factors contribute, quite understandably, to the uncertainty as to U.S. plans and thus to some delay in signing up customers and investors.

11. The report is correct in concluding that the safeguarding of nuclear materials and protection of classified technology is not an issue in the debate over Government vs. private ownership of a plant. However, the report should emphasize that prompt action toward expanding the Nation's uranium enrichment capacity would be a major contribution to continued US technological leadership and to non-proliferation objectives.

    . The fact that foreign customers were not able for many months to sign firm long-term contracts with a US source of uranium enrichment services damaged the credibility of the Nation as a supplier and has increased pressure in other nations for development of enrichment technology and construction of plants.

    . There is increasing evidence that other nations are turning to potential suppliers outside the US, thus increasing the pressure for construction of more enrichment plants abroad.

ATTACHMENT B

COMMENTS ON DRAFT GAO REPORT ON URANIUM ENRICHMENT

Report Reference Digest	Comments
Page i, Para. 2	Erroneous implication that Government will expend $8 billion, when plan virtually assures that this will not happen. Moreover, any Government expenditures will be recovered by Government through reimbursement of cost of assistance or, in event of takeover, from revenues received from Government sales of enriching services.
Page ii, next to last point	Factually incorrect in that Government purchase of UEA SWU's will not be unlimited, rather specifically limited as to amount, time and circumstance.
Page ii, last point	Factually incorrect in that UEA access to Government SWU's will not be unlimited, rather specifically limited as to amount, time, and purpose.
Page iii, first 2 lines	Erroneous implication that the Government will reimburse domestic equity in UEA in all circumstances if UEA project fails. Depending upon circumstances, UEA domestic equity could be totally or partially forfeited
Page iii, Para. 1	Factually incorrect in that UEA domestic equity will not receive an essentially guaranteed return on their investment. In event of takeover domestic equity may lose part or all of its investment. Further after the transition period, UEA will risk losing return on equity if it fails to produce product to meet commitments to its customers.
Page iii, Para. 2	While probably correct, this statement does not appear to be relevant to an evaluation of the proposed Nuclear Fuel Assurance Act of 1975. Furthermore, we do not believe that use of gaseous diffusion technology is appropriate as a reason for recommended rejection of the UEA proposal since many of the values of private enrichment are independent of the technology employed. It is generally agreed that the next plant should use this process. Additionally, it is not at all clear at this time that plants using gaseous diffusion will not compete with gas centrifuge plants for future increments of capacity.

Report Reference Digest	Comments
Page iii, last three points under Conclusions	Factually incorrect in that investors are not guaranteed a rate of return. Furthermore, with the exception of the first conclusion (treated above) the observations made could apply equally well to private efforts employing the centrifuge process. Any "financing uncertainties" are largely the result of the uncertainty over the present position of the Government and can be expected to be resolved by passage of the Nuclear Fuel Assurance Act. There is no reason for believing that the UEA plant would be on line any later than a similar sized Government plant.
Page iii, next to last point	Factually incorrect in that Government add-on plant schedules 4.5 million SWU in 1983, 9 million by 1985, about 1 1/2 years behind UEA proposed schedule for a plant of the same size--so even a substantial slip in UEA schedule would not put it behind the Government schedule. Moreover, Government operations are also, like private efforts, vulnerable to interruptions, uncertainties and delays.
Page iv, middle para.	Erroneous implication that private centrifuge enrichers are likely to be willing to assume more total risk with a less advanced technology when all evidence points in the contrary direction.
Page v, 2nd point	There is no basis developed in the report for this recommendation; nothing in the report indicates any reason for concluding that the proposed Nuclear Fuel Assurance Act of 1975 is inadequate or undesirable legislation for assisting private employment of advanced enriching technologies.
Main Text	
Page 7, last sentence, first para.	Factually incorrect in that a new plant to operate economically employing the gaseous diffusion process requires approximately 9 million SWU and the gas centrifuge process capacity probably somewhere in the range of 2 to 3 million SWU, as yet undetermined.

Report Reference	Comments
Page 9, first sentence	Incomplete, thus misleading. Text should indicate that ERDA officials stressed that the process has not yet been determined to be technically or economically feasible, thus that production plant extrapolations at this time are meaningless.
Page 10, second para.	Misleading and incomplete in that no mention is made of the fact that several years of intensive work and sizeable commitment of resources have been made by a substantial number of private firms in developing their present positions, and, in the case of the four groups cited, in developing extensive plans for participation in private enrichment. Very extensive marketing efforts have been undertaken, particularly by UEA.
Page 11, last para.	Seriously erroneous implication in that needed assistance and assurance to private projects is expected to be on a basis which provides such support at the expense of the private project, whereas the context implies that this would be at Government expense.
Page 14, last sentence	Misleading, implies no efforts underway on hedge plan; approximately $4,100,000 has been expended to date on conceptual design of an add-on gaseous diffusion plant.
Page 17, 5th sentence	Erroneous implication that participation will be 55% domestic, 45% foreign. Participation contemplated is 40% domestic with 55% of voting right and 60% foreign with 45% voting rights.
Page 22, 2nd sentence under Access to ERDA stockpile	Factually incorrect in that 9 million SWU are not available throughout the 5 year period, but on a declining basis to zero over the five year period.
Page 23, 3rd para. within 3rd sentence	Erroneously implies that the Government would be required to pay return on equity in the cases noted. UEA in such cases proposes (May 30 letter) "return of their original investment and additional compensation, as determined by USG, to reflect the results achieved to the date of transfer." (Underlining added.)

Report Reference	Comments
Page 24, last word at end of first para.	Factually incorrect - should read "gross negligence". This is important because simple negligence is cause for partial loss of equity.
Page 25, last para.	Seriously incomplete and potentially misleading; context unclear; may depend upon whether UEA or ERDA complete the project; should be expanded extensively or deleted.
Page 26, last sentence	Factually incorrect - it does not constitute a Government guarantee of this rate of return - see earlier comment on page iii of Digest.
Page 27, first para.	Seriously erroneous implication that the $1.4 billion maximum "takeover" commitment and $1.2 billion SWU purchase commitment (which might be required if 6 million SWU were purchased) are additive. In any credible situation SWU purchase would only occur if the plant were operable by UEA in a production sense, hence "takeover" had not occurred or would not then occur.
Page 28, first para. within first sentence	Factually incorrect; should read "gross negligence or willful misconduct."
Page 28, 2nd para. 2nd sentence	Factually incorrect; UEA risks loss of part or all of domestic equity during transition period, thereafter risks loss of return on equity due to failure to produce product. Furthermore if the project proceeds satisfactorily as is implied by the term "essentially riskless" then there would be no cost "borne by the Government" except for any SWU purchases which are, of course, resaleable.
Page 29, 3rd sentence	Erroneous implication that "normal business operations" (see page 28) associated with businesses performing services always cover risk of supplying materials being processed (millers do not supply grains being milled). The normal business operations of supplying enriching services does not involve supplying the feed material. Neither ERDA nor foreign enrichers undertake this risk. Therefore the implication that UEA is proposing a novel system is factually incorrect.

Report Reference	Comments
Page 30a, first sentence	Erroneous implication that all "normal" operating risks are hedged - not so - after transition period UEA has risks of loss of return on equity through failure to produce product; factually incorrect in that the Government does not guarantee equity if the plant is not completed - UEA may lose all or a portion of equity during the transition period, thereafter it may lose return on equity due to inability to produce product to meet commitments during an exposure period of 20-25 years.
Page 31, 2nd para.	Erroneously implies that long term take or pay contracts with cost pass through pricing are abnormal for enriching services industry. This is the practice of ERDA and may well be the practice of those employing the centrifuge process.
Page 31, 2nd para. last sentence	Erroneous implication that industry will not be regulated should the need arise. Moreover, the relevance of the point is questionable if customers have no objection to 15% return, cost-pass-through, long term take or pay contracts. Unless customers do subscribe to the project, it cannot proceed. The industry will be subject to NRC regulation.
Page 31, last para. 2nd sentence thru end of para.	Erroneous implication that advanced technologies do not offer competition to UEA. They will do so with respect to uncommitted portions of UEA's initial plant capacity and to any potential future additions of capacity. The same comment could apply equally well to a Government add-on plant.
Page 32a, 2nd para. portion of last line	Factually incorrect; under no circumstances is UEA guaranteed a 15% return on investment equity in a takeover situation.
Page 32b, last sentence first para.	Factually incorrect; in the event of takeover during this period for reasons other than gross mismanagement, gross negligence, or willful misconduct UEA risks losing both a return on equity investment and a portion of its equity investment. It could be pointed out that inability of UEA to roll over construction loans at the end of the construction period could trigger a Government takeover but would also presumeably permit the Government to be the owner of an operable plant at a cost (considering foreign investment) substantially less than the Government would incur in construction of its own plant.

Report Reference	Comments
Page 32c, first para. portion of last sentence	Relevance of absence of price regulation is questionable. In fact, price regulation could operate to remove risk of competition.
Page 33, the word negligence in the first and fourth sentence	Factually incorrect (should read "gross negligence") and strongly misleading; implies only risk to equity is in extreme conditions cited which would be "difficult to prove." In fact equity is at risk in many other situations. Report fails to recognize extremely important point of potential for <u>partial loss</u> of equity.
Page 33, first sentence under first major heading	Factually incorrect, UEA is not assured of a constant 15% rate of return
Page 33, first para. end to last sentence	Erroneous implication; while the gaseous diffusion process could be considered as a chemical process, the enriching services industry does not resemble the chemical industry - no single chemical product or service involves a capital investment of $3.5 billion and long term pay out - a more nearly comparable industry in these respects (but not in degree of business risk) is the electric utility industry.
Page 33, first para. last sentence	Seriously erroneous implication that entry into enrichment industry presents only the normal business risks - overlooks unusual difficulties in licensing nuclear activities, possibilities of nuclear moratoriums in various states and the unprecedented risk of investing $3.5 billion in a single venture as yet unproven commercially based on secret technology. It should be noted that without exception, potential entrants into the enrichment industry and representatives of the U.S. financial community during 1974 hearings before the JCAE viewed this activity as presenting abnormal business risks.

Report Reference	Comments
Page 44-45 Beginning last sentence page 44	Factually incorrect; should read "ERDA's present policy is to permit domestic companies who expect to provide enrichment capacity in the United States to initiate unclassified discussions with foreign entities within the confines of the Atomic Energy Act and the requirements of Title 10 of the Code of Federal Regulations, Part 110 Rules and Procedures."
last sentence, first para.	Incomplete. Should add statement that "The Government would have to assure that the proposed arrangement would be beneficial to the U.S." Also should revise last sentence as follows: "Any arrangement would be subject to an appropriate Agreement for Cooperation between the U.S. and the country or countries of the foreign entity. The Government findings as to the acceptability of such proposals would be judged on the basis of:"
Page 46, first para.	Seriously erroneous and misleading implication that cost benefit cited is due to Government construction of "next increment of enrichment capacity" whereas figures cited are due to the existing Government plants and assumes ERDA estimates of revenues based on attainment of proposed legislation permitting establishment of commercial charge, presently estimated at $76 per SWU.
Page 61, 1st para. first sentence	Factually incorrect in that the UEA plant, which may be the last of its kind, if more advanced processes prove economical in time, is in fact related to the interests of other potential entrants. Early action by the Government to support UEA would enable other private entrants to secure foreign and domestic customers by virtue of this demonstration of serious intention of the Government to rely on private enterprise to supply needed enrichment capacity.
Page 61, 1st para. second sentence	Factually incorrect. See earlier comments in regard to facts of UEA's risks. Moreoever, as to competition, UEA is already encountering competition from the centrifuge because several large potential customers (TVA, Consumers Power, two Texas utilities and others) appear to have passed up UEA as a supplier and are already dealing with potential centrifuge enrichment suppliers.

Report Reference	Comments
Page 61, 2nd para.	Incomplete in that borrowing from the Treasury under Government ownership would swell the total of the national debt and, in such case, net outlays would add to the budget deficit.
Page 61, third para. first sentence	Erroneous implication that this potential difficulty of obtaining long term financing is peculiar to UEA and not equally applicable to other potential entrants. Moreoever, all private industry will experience these difficulties if more and more new Government agencies (such as the proposed government enrichment corporation proposed by GAO) are enabled to borrow in the money markets.
Page 61, third para. 2nd sentence	Erroneous implication that this is an inherent problem when it probably would be overcome immediately (for UEA and other private projects) if the Congress passes the Nuclear Fuel Assurance Act, thus serving clear notice of U. S. Government support for private entry.
Page 61, fourth para.	Factually incorrect; UEA investors will not receive a guaranteed return, furthermore Government funds are not at risk.
Page 62, first para. third sentence	Erroneous implication; Government schedule is end of 1983 for 4.5 million SWU and the first part of 1985 for 9 million SWU whereas if UEA schedule slips 1 1/2 years they will have 9 million SWU by the first part of 1985. It should be observed that Government schedules also might slip.
Page 62, 2nd para. 2nd sentence	We would disagree. Separate corporate management of enrichment facilities, due to time required to obtain necessary legislation and dispersion of experienced personnel between ERDA and the corporation, might well preclude timely implementation of Government's hedge plan should such action become necessary. Moreover, establishment of such a corporation would reduce confidence in Government's intentions to transfer responsibilities for future enrichment plants to the private sector.

Report Reference	Comments
Page 62, 2nd para. last sentence	Erroneous implication. It is not at all clear that a Government corporation would be freed from budget constraints. This would be contrary to the spirit, if not the letter, of the "Budget Reform Act" of 1974.
Page 63,	Erroneous implication that private centrifuge enrichers are likely to be willing to assume more total risk with a less advanced technology when all evidence points in a contrary direction.
Page 63, last point	No basis is established in the report for this recommendation, i.e., the report does not indicate where the proposed Nuclear Fuel Assurance Act of 1975 is inadequate, or an undesirable mechanism, for assisting development of a competitive uranium enrichment industry.
Appendix I Page 65, 2nd para. 2nd sentence	Factually erroneous. The statement should read: "The Eurodif consortium, in which France has a 42 percent interest, Italy 24 percent, Spain 12 percent, Belgium 12 percent, and Iran 10 percent,"
Page 66, first para. last sentence	Factually incomplete. The following should be inserted: "Brazil has recently made an agreement with the Federal Republic of Germany under which Germany will not only sell power reactors to Brazil but also establish in Brazil the complete nuclear fuel cycle, including an enrichment plant using the jet nozzle technology."
Page 67, last sentence	Incomplete. In lieu of the last sentence, the following could be used: "Zaire has expressed interest in some type of enrichment plant to utilize excess hydropower but so far no one has come forward to finance, build and operate a plant there."

Note: Proposed arrangements between UEA and the Government are in the process of negotiation.

THE WHITE HOUSE

WASHINGTON

November 13, 1975

MEMORANDUM FOR: BILL KENDALL
PAT O'DONNELL
CHARLES LEPPERT

FROM: GLENN R. SCHLEEDE

SUBJECT: Responses to JCAE Questions on Uranium Enrichment

Attached are copies of ERDA's response to a whole series of questions on uranium enrichment asked by George Murphy. ERDA is also providing, formally, a copy of Bob Seaman's letter to Elmer Staats which criticizes the GAO draft report.

I am attaching extra copies of the package in case you want to get it to some members of JCAE. As a minimum, I'd suggest getting it to minority members and to Senator Bellmon.

cc: Jim Connor