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STATEMENT OF HONORABLE FRANK ZARB  
ADMINISTRATOR  
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BEFORE THE  
JOINT COMMITTEE ON ATOMIC ENERGY  
DECEMBER 3, 1975

Introduction

Mr. Chairman, I am pleased to appear before you today to discuss the Nuclear Fuel Assurance Act, which has been proposed by the President and is now being considered by your Committee. The Federal Energy Administration has a great interest in early passage of this bill, because it is vital to the continued viability of our Nation's nuclear power capacity, and hence to our goals of energy independence. Passage of this bill is central to our ability to continue to supply much of the free world's enrichment requirements and thereby benefit our economy. It will permit us to maintain a key position in nuclear technology from which to influence the development and implementation of international safeguards systems, and it will help us sell American reactors to the world market with resultant trade benefits.

I will divide my testimony into three basic parts. First, I will put this bill into the perspective of our



national energy independence goals, and explain the importance of this bill to the achievement of those goals. Second, I will discuss briefly the significance of the bill from the standpoint of our international energy position. Third, I will express my views on why we must begin now the transition to a private uranium enrichment industry. This will avoid subjecting the Federal budget to substantial requests for funding enrichment expansions.

#### NFAA as Related to National Energy Policy

We have today about 220 nuclear plants either operating, under construction, or ordered. All but about 10 of these have firm contracts with ERDA for enrichment services. When all of these plants have become operational, sometime in the 1986-1987 time period, they will represent about one-third of the total U. S. electric generating capacity. There is no question in my mind that this additional capacity will be needed, as will comparable additions to our coal-fired generating capacity. In fact, I am devoting an increasing portion of my own time to dealing with factors which threaten to delay the addition of this needed generating capacity.

Yet, there are some who question whether we need any more additional electrical generating capacity at all.

For the past 2 years we have witnessed the combined impact on electric growth of a sluggish economy, mild weather, and conservation, partially motivated by price elasticity. In 1974, there was no growth in electricity at all. So far in 1975, residential use of electricity has increased some 6% over 1974. However, the recession has continued to depress industrial requirements so that total electricity usage is projected to grow only 2.5% for the year. With the continuation of the economic recovery, we expect electricity growth to resume, and for the long term we expect it to increase at a rate of 5 to 6% per year. This is substantially greater than the expected increase of total energy demand, which has grown at about 3 1/2% per year since World War II and is projected to grow at somewhat lower rates in the next 10 years.

This future growth will favor electrification, both with respect to new installations and to conversions of existing energy using installations. In both cases,

substitution of electricity for oil and gas will occur as our efforts to conserve these fossil fuels take hold. Thus, coal and uranium will be needed in increasing amounts to generate our future electric energy.

Despite the projections for continued demand growth, however, the nuclear outlook is far from bullish. Utilities are faced with capital formation problems which cause curtailments of expansion programs to meet financial realities rather than projected service needs. This affects all electric expansion.

An additional set of problems faces nuclear power. There is uncertainty over Government policy on nuclear power and the capacity of industry and Government to resolve remaining questions with respect to reprocessing, recycle, and waste management. If not corrected, this uncertainty will greatly inhibit the nation's utilities from being able to choose nuclear energy. I believe that there are some aspects of the nuclear fuel cycle in which the Government must continue to play a role and that we must take prompt action in these areas or bear a major responsibility for the consequences.

In the case of nuclear power, this uncertainty arises from a number of factors -- possible state-imposed moratoria on building new plants, delays in final action on the storage and processing of spent fuel, possible shortages of mining and milling capability to produce uranium, and possible shortage of enrichment capacity. Consider the following:


1. Our present enrichment facilities, even when expanded to nearly 28 million SWU/yr. capacity, from their present 15 million, will be able to handle only the 329,000 MW of nuclear power under long term Government enrichment contracts. These contracts include 208,000 MW of domestic reactors and the 121,000 MW foreign reactors. This estimate assumes significant plutonium recycle by the early 1980's.
2. If plutonium recycle is not initiated in the next 7 years, then the existing enrichment capacity can support these contracts only if the enrichment plant tails assay were increased, with a concomitant increase in demand for uranium feed. Other temporary alternatives would be to draw on the limited

national stockpile of enriched uranium or to reduce contractual commitments to meet available enrichment plant capacity.

The utilities know this situation and would be reluctant to order new nuclear plants, even if financial conditions improve, until questions such as the availability of adequate enrichment capacity to meet domestic needs are resolved. A definite plan to add new enrichment capacity by the time it is needed would provide utilities a degree of certainty needed to justify commitments to order new plants as required, for at least several more years. By removing uncertainty in this part of the fuel cycle, the Government would have taken an important step in maintaining nuclear power as a viable energy supply component to meet future electrical demand.

#### International Aspects of NFAA

The Nuclear Fuel Assurance Act is also a key factor in our ability to continue to supply most of the free world's enrichment capacity, our ability to retain our world leadership position in nuclear technology from which to influence international safeguards systems, and our ability to continue to sell American nuclear plants to the world market.



About one-third of our present and planned Government enrichment capacity is committed to foreign nuclear plants. Foreign countries including Japan, France, Germany, and Spain are investing large sums of money in nuclear plant construction based on the assumption that we will deliver on our commitments. We have always expressed a willingness to supply this service in an effort to help the industrial development of foreign nations. In return, we have asked that the materials we supply and the fissionable materials in the spent fuel be safeguarded to avoid diversion and use for military purposes. If we fail to keep pace with the expanding foreign market for enriched uranium by adding additional U. S. capacity, then other nations will move in to fill the gap. The consequences will not only be a loss of our technological lead in this field, but even more important, we will have weakened our ability to insist on additional plutonium safeguards and non-proliferation guarantees.

Many of the nuclear power plants ordered in foreign countries have been ordered from U. S. firms. A total of 33 nuclear plants have been ordered from U. S. firms for export overseas in the last 5 years alone. Failure of the





U. S. to expand promptly its capacity to produce enriched uranium will surely mean a reduction of these sales by U. S. companies in the future.

The GAO report to this Committee sums up the contribution this bill could make towards our international position this way: "It is important for the U. S. to maintain as much of the foreign market as possible to (1) maximize our balance of payments position, (2) obtain the commitment of additional nations to accept the principle of nuclear non-proliferation, and (3) cooperate with other major oil-consuming nations which are looking to nuclear power to help reduce their dependence on foreign oil imports." I thoroughly endorse this position. I also want to make it clear that we must not subordinate our domestic needs for enrichment capacity to these foreign policy objectives. I believe that if the U. S. acts promptly in constructing additional enrichment capacity, as intended by the NFAA, we can and will meet both objectives.

Importance of NFAA to Conserving Uranium Resources

Prompt enactment of the NFAA will also help us to use our uranium resources more efficiently. If we have to




operate existing capacity in a tails assay mode selected to gain the most separative work capacity from existing plants, it will be done with a 15 to 20% increase in uranium feed requirement. Considering the history of our wasteful habits in consuming fossil fuels, I certainly think it makes sense to do all we can to conserve our nuclear fuel resources. Adding enrichment capacity expeditiously will aid significantly in that endeavor, by allowing operation of existing capacity in a more material-conservative mode.

#### Private versus Public Enrichment Additions

The GAO report which comments on the proposed Nuclear Fuel Assurance Act supports the conclusions which I have just elaborated on - that expansion of our enrichment capacity is needed promptly, for both domestic and foreign policy needs, and that private entry for centrifuge enrichment should be vigorously pursued. However, the GAO report opposes the privatization approach for the next increment of diffusion capacity and recommends that ERDA construct the next increment and that a Government corporation be established to manage the Government's existing plants and any additional plants. The main reason offered by GAO for preferring this approach to that of NFAA is that GAO

contends that the firm wishing to build the next increment of capacity would bear very little risk. I would like to briefly address these points.

First, we have some very urgent energy problems which demand major Government participation in R&D programs. Development of synthetic fuels, solar, and geothermal energy, and nuclear fusion, as well as energy conservation efforts, all will require large expenditures of Federal dollars. In the nuclear area, we must continue with the breeder development, and we must provide additional effort on nuclear fuel reprocessing and waste management. If the government does not assist with these programs, we will be jeopardizing our future energy supply capability. With existing uncertainties, private ventures, financed with private capital, are simply not available to expand all the nuclear fuel cycle facilities that will be needed. On the other hand, private financing in the enrichment area can be made available, given the cooperation and temporary assurances, permitted by the act. Such cooperation and temporary assurances, I believe, are well suited to the enrichment business and are reasonable, considering the classified nature of the technology and the lack of commercial experience in this business.



It makes sense, considering the very limited Federal budget, to avoid using Federal dollars on projects which, while of critical importance, can be funded privately, and instead, apply available Federal dollars in the energy areas where needed most.

Establishing a Government corporation to manage the Government's enrichment program, as called for by the GAO report, has the following shortcomings:

- It inhibits diversity of technology, which is an important ingredient if we are to maintain our world leadership in this field. There is no substitute for competition as a driving force to bring the most efficient, productive, and reliable technology to the fore.
- It inhibits diversity of marketing approaches. In competing for foreign contracts especially, the opportunity for the U. S. to capture a large share of the market will be enhanced if several firms, each with its own conditions, schedules, and price packages, are competing. A single U. S. enrichment corporation would not have that advantage.




Creating a new Government corporation would introduce new delays and uncertainties.

Insofar as the question risk is concerned, the NFAA is designed to remove only that element of risk which arises out of possible actions which are beyond the control of the company involved. Risks associated with licensing and regulatory actions, import/export policies, possible nuclear moratoria, and deficiencies in Government supplied technology and hardware -- these are the risks which Government guarantees are designed to mitigate -- and properly so.

I would like to comment briefly on one additional point raised by GAO; that is, the question of whether the completion of a free standing diffusion plant, financed and built by a private firm would be delayed beyond the time a Government owned add-on plant could be available. Dr. Seamans discussed this in his statement yesterday, and I would like to comment also, based on FEA's experience in coal. The possibility of using coal-based electricity is relevant because the power supply arrangement being considered under ERDA's hedge plan for a Government add-on facility would require that two coal-fired electric generating units of 1200-1300 mwe each be built by the utility combine now serving the Portsmouth plant.


I am hopeful that such plants could be built on schedule if needed, but I want to make clear that substantial



uncertainties are involved with these plants as well. These coal-fired plants would have to meet a number of air quality requirements, including any new standards to prevent significant deterioration of air quality which are now being considered by the Congress; new source performance and national ambient air quality standards which are set by the EPA, and air quality emission limits set by states.

The expectation is that current standards could be met by either the installation of scrubbers or with the use of low sulfur coal probably from the West. If scrubbers are not installed, which is the condition for building the plants announced by one potential power supplier, low sulfur coal would be a necessity. The availability of low sulfur coal is dependent upon a variety of restrictions we now face in expanding coal production and utilization. Thus, prompt installation of coal-fired units to serve a Government add-on diffusion plant is subject to considerable uncertainty.

On the other hand, the privately owned diffusion plant, covered by the proposal now before ERDA, would be supplied electric power by two nuclear units which have already been sited and issued construction permits. It is, therefore, likely that this privately owned diffusion facility would be on-line no later than a Government add-on enrichment plant.



The FEA was charged by the Congress in Public Law 93-275, "To promote free and open competition in all aspects of the energy field, prevent unreasonable profits within various segments of the energy industry, and promote free enterprise." The proposed Government enrichment corporation does not meet this charge; the Nuclear Fuel Assurance Act does.

That completes my prepared testimony. I will be pleased to answer any question.

