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The General Accounting Office and Its Role in Energy Issues

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Before

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I appreciate your invitation to participate in this Energy Conference. In my capacity as Director of the Energy and Minerals Division of the U.S. General Accounting Office, I have great deal of interest in the subjects on the agenda. I have been asked to discuss recent GAO studies in the field of energy. I would like to approach this by first briefly discussing the broad function of the GAO and then focus on the specific role and activities of the Energy and Minerals Division.

THE GENERAL ACCOUNTING OFFICE'S MISSION

As you are probably aware, the GAO directly assists the Congress, its committees, and its Members in carrying out their legislative and oversight responsibilities by serving as an independent nonpolitical agency of the Congress. This Congressional assistance is rendered

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1/ I am indebted to Richard M. Greene of my staff for helping with the preparation of this presentation.

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primarily through our legal, accounting, auditing, and claims settlement functions with respect to Federal Government programs and operations. We are organized into 12 operating divisions which have responsibility for 34 broad issue areas including energy. My division is directly responsible for all GAO work in the energy area.

ENERGY: THE GAO's ROLE

As previously noted, GAO's traditional functions constitute the bulk of its Congressional assistance. However, we have been increasingly called upon to go beyond basic audit/accounting functions and make recommendations designed to provide for more efficient and effective Government operations. Additionally, we have been asked to prepare more and more material of a policy analysis nature. This is especially true in GAO's energy work.

With that note in mind, I will now turn to discussion of some of our recent energy reports.

GAO ENERGY REPORTS

In the last 18 months, the GAO has issued more than 100 energy-related studies and reports. These studies have covered the complete spectrum of energy topics including Nuclear Powerplant Lead Times, Employment Impacts of Various Energy Technologies, Net Energy

Analysis, Construction of the Trans-Alaska Oil Pipeline, Opportunities to Improve Planning for Solar Energy Research and Development and more topics too numerous to mention. We currently have more than 100 on-going energy-related jobs.

I would like to take this time to discuss in some detail some of the more significant studies recently completed by the Energy and Minerals Division.

NATIONAL ENERGY POLICY: An Agency For Analysis (EMD-77-16)

In January 1977, we issued this report based on our observation that the Nation had lacked both a focal point for dealing with energy problems and a coherent set of energy policies.

Based partly on our past work on energy problems and partly on our continuing reassessment of critical national issues, we tried to identify in that report those key energy issues we felt were most in need of attention. At that time, we identified the following eight critical national energy issues:

--How can the Federal Government encourage energy conservation?

--Can the problems of nuclear fission be resolved so it can become a major energy source?

--To what extent can fossil fuels (espcially coal) be relied upon to fulfill future energy demand?

--How do Federal subsidies, taxes, and regulations affect energy supply and demand actions?

--How can the Executive Branch energy organization and decision-making processes be improved?

--What are the prospects for transition to essentially renewable energy resources (geothermal, solar, fusion)?

--Are the energy resources on public lands being wisely managed by the Federal Government?

--Are our domestic and international energy policies compatible and do they reflect international economic and political realities?

For each of these critical national energy issues, we discussed the major questions requiring analysis and presented GAO's ongoing and planned work.

Incidentally, one point noted in that report was the inability to solve many energy problems stemed at least in part from the diffusion of major energy programs among several Federal agencies. We again pointed out the need for a Department of Energy and Natural Resources or, as an interim step, an organization similar to the newly created Department of Energy. I will say more about this later.

Each member of Congress received a copy of that report, and over 3000 additional copies were requested within a few weeks of its publication.

Energy Policy Decisionmaking, Organization, and National Energy Goals (EMD-77-31)

This report was issued in March 1977, and identified a number of gaps in the energy policy decisionmaking process which showed the need for better coordination among agencies carrying out energy functions and for establishing a system of priorities among energy goals. We discussed energy reorganization and issues the Congress should address in enacting Federal energy structure reorganization legislation.

We noted that the primary Federal energy agencies; the Federal Energy Administration, the Energy Research and Development Administration, the Federal Power Commission, and the Department of the Interior, in carrying out their separate missions, do not always take actions or make decisions that are compatible with overall national energy goals.

In that report, we discussed energy policy decisions in three broad areas:

--Energy conservation

--Development of nonrenewable energy resources, and

--Energy price regulation.

Finally, we pointed out that a number of remedies were available to close the gaps in the energy-decisionmaking process, but the one common to most was

a reorganization of Federal energy functions. We again proposed as the best long-term approach the establishment of a Department of Energy and Natural Resources. However, as an interim step, we recommended that the Congress enact legislation to establish a Department of Energy along the lines proposed by the administration and include the following provisions:

--Make clear the continued existence of the Professional Audit Review Team which was designed to provide an independent review of and reporting on Federal energy data functions.

--Provide the Department of Energy the responsibility for energy production formulation, planning, and programming to provide an appropriate basis for interface with agencies having health and safety responsibilities.

--Make clear the relationship between the Department of Energy and the Department of the Interior with respect to whether or not the Secretary of the Interior has veto power in the leasing of specific areas.

--Establish a high-level council to coordinate energy and energy-related issues and reconcile energy goals issues with other national goals.

--Reaffirm GAO's authority to continously monitor,

evaluate, and report to the Congress on the policies, plans, and programs of the Department of Energy. (Close congressional scrutiny will be needed in several key areas.)

Energy: Issues Facing the 95th Congress (EMD-77-34)

This report was issued in April 1977, and augments GAO's previous "Agenda" report discussed earlier. The report summarized our contributions to answering energy questions and discussed our views in more detail on questions and concerns that related to the five energy agencies during the 95th Congress.

Included in the questions we addressed were:

--How effective are the conservation programs that have been enacted?

--What should our Outer Continental Shelf Leasing Goals be and how do they relate to national energy needs?

--What levels of domestic refining capacity are desirable?

--What are the effects of pricing, tax, and other regulatory actions on the production and price of energy supplies?

--What is and will be the role of Alaskan energy resources?

--How urgent is the need for additional uranium

enrichment capacity and how should that capacity be provided?

We noted that over $11 billion would be spent in fiscal year 1977 on energy programs primarily by five Federal agencies: the Federal Energy Administration, Department of the Interior, Federal Power Commission, Nuclear Regulatory Commission, and Energy Research and Development Administration. Within these agencies, the Government's energy programs are diffused among these program areas:

- Conservation
- Petroleum and natural gas regulatory programs
- Energy information and analysis
- Strategic Petroleum Reserve
- Federal energy organization
- Electricity
- Pipeline rights-of-way
- Outer Continental Shelf
- Public Lands
- Fossil energy development
- Nuclear power development
- Renewable resources development, and
- International concerns.

The report discusses our assessment of major energy questions within the context of these 13 programs areas and as they apply to each of the five agencies.

The report was designed to serve as a reference document to aid the Congress, and the public in gaining a better understanding of our energy problems, and assist the Congress in setting priorities for reviewing each agency's programs in formulating energy policy in response to possible new initiatives by the Carter Administration.

Report to Chairman, Committee on Science and Technology, House of Representatives (EMD-77-50)

On June 14, 1977, we issued this report in response to an inquiry asking our current views on this Nation's commitment to the development of Liquid Metal Fast Breeder Reactor (LMFBR) Technology. This inquiry was prompted by the President's announced decision to indefinitely defer the Clinch River Breeder Reactor.

In this report, we noted that we had previously 1) issued studies, and 2) provided Congressional testimony addressing various aspects of the LMFBR Program.

We reemphasized certain points and noted that we were still of the opinion that:

--The United States clearly should not abandon the nuclear fission option at this time nor should it abandon the LMFBR research and development effort.

--Uncertainties regarding the scientific, technical, or economic feasibility of potential alternative energy sources; the problems of increased reliance on fossil fuels; and uncertainties regarding the ability and willingness of the Nation to conserve fuel--all make these unrealistic courses of action.

--The LMFBR program should be clearly identified

and recognized for what it is: a research and development program. There has been premature concern and emphasis on commercializing the LMFBR at a time when the Nation is years away from demonstrating that commercial-size LMFBR plants can be operated reliably, economically, and safely.

--Given the history of slippage in this program and the likelihood that future expereince will be similar, it does not appear reasonable to attempt to accelerate the research and development schedule. It will be difficult to maintain the current schedule.

--Whatever action is taken by the United States of nuclear power and the LMFBR, the problems of nuclear safety and safeguards will not go away. Many foreign governments appear likely to rely significantly on nuclear fission power in the future, including LMFBRs. These governments are not concerning themselves initially with commercialization problems but are attempting to demonstrate that LMFBRs can operate reliably, economically, and safely.

A unilateral decision on the part of the United States to abandon nuclear power or the development of the LMFBR will not change this situation.

--The most logical course of action is to pursue the LMFBR program on a schedule which recognizes that the program still is in a research and development stage. Not until some point in the future, perhaps 7 to 10 years from now, need a firm decision be made as to whether the Nation will commit itself to the LMFBR as a basic central station energy source. At that time, many of the uncertainties of today should be reduced or eliminated, particularly if priority efforts are made to resolve as many as possible between now and then.

We noted that the most important disadvantage in slowing the LMFRB program is that we run the risk of not knowing enough about the LMFBR to make intelligent decisions on it in the near future. This problem occurs in the face of other nation's pursuit of fast breeder technology. Most importantly, continuation of research and development on the breeder enhances the U.S. ability to affect discussion regarding nonproliferation in the crucial years ahead.

Finally, we noted that in view of the many uncertainties surrounding the LMFBR, we believe alternative nuclear technologies should be simultaneously explored.

An Evaluation of the National Energy Plan (EMD-77-48)

In July, 1977 we issued this report which presents our analysis and comments on the President's National Energy Plan. The report was intended to assist the Congress in considering the legislation that the administration proposed to implement the plan.

We pointed out that the administration had taken an important first step in formulating a National Energy Policy by submitting a comprehensive set of proposals, but in our opinion, the plan had one major flaw. The proposed plan was not designed to meet many of the Administration's goals without unspecified voluntary actions or further mandatory actions not specifically identified except by example. The plan, as proposed, was not strong enough to meet four of its seven established goals, and where practicable, we quantified the possible results.

Moreover, in our opinion, the plan, even if approved in its entirety would fall short of its goals by even greater amounts than the administration has estimated. A case in point is the important goal of reducing oil imports.

The administration established a goal of reducing imports to 6 million barrels of oil a day (MMB/D) by 1985. By the administration's estimate, the proposed

plan would reduce imports to 7 MMB/D. To achieve the other 1 MMB/D reduction, the administration is counting on voluntary conservation.

Under the administration's plan, however, most of this reduction would be accomplished not by conservation, but by switching to alternative fuels--primarily coal and nuclear power. It is, therefore, more a fuel switching program than a conservation program.

Additionally, on the basis of work that we had underway, we concluded that the obstacles to coal production which are not dealt with in the plan are such that it appears highly unlikely that U.S. coal production in 1985 will reach 1 billion tons, let alone the administration's goal of 1.2 billion tons with the plan.

We believe also that the administration's supply estimates for natural gas and nuclear power were overstated.

In summary, our work indicated that the administration's estimates for domestic energy supplies were overstated in the following amounts:

	MMB/D oil equivalent
Coal	2.3
Natural gas	1.0
Nuclear power	.6
Total	3.9

We believe that the estimate of oil production is possibly overstated. The administration expects its plan to increase oil production by 0.1 MMB/D over what would otherwise be expected in 1985. Our discussion on oil pricing and taxing pointed out that this may be questionable since producers' revenues and presumably capital available for exploration and production would be less under the administration's plan than under a continuation of current policy.

As a result of our analysis, we proposed a series of recommendations for increasing conservation, strengthening the plan, and providing milestones upon which to judge progress and initiate further action as warranted.

More than 4000 copies of this report were distributed in the first weeks after publication.

Nuclear Energy's Dilemma: Disposing of Hazardous Radioactive Waste Safely (EMD-77-41)

Last week we issued this report in which we addressed the unsolved problem of radioactive waste disposal and its threat to the future of nuclear power in the United States.

The Energy Research and Development Administration (ERDA) has begun a program to demonstrate by the mid-1980s the feasibility and safety of placing radioactive

wastes in deep geologic formations. We pointed out that not only has progress been neglible to date, but that future program goals are overly optimistic because ERDA faces many unsolved social, regulatory, and geological obstacles.

We found:

--Public and political opposition to nuclear waste disposal locations.

--Gaps in Federal laws and regulations governing the storage and disposal of nuclear waste.

--Geological uncertainties and natural resources tradeoffs encountered when selecting "permanent" disposal locations.

--Lack of the Nuclear Regulatory Commission regulatory criteria for orderly waste management operations, such as solidification of waste, designing proper waste containers, and transporting nuclear waste.

--Overly optimistic schedules for demonstrating the safety of the Energy Research and Development Administration's proposed waste disposal locations and waste management practices.

--Lack of demonstrated technologies for the safe disposal of existing commercial and defense high level waste.

Based on our analysis of the radioactive waste

disposal problem, we made a series of recommendations to the Congress; The Administrator, ERDA; and The Chairman, Nuclear Regulatory Commission (NRC). These recommendations follow.

Recommendations to the Congress

To better insure public health and safety the Congress should amend the Energy Reorganization Act of 1974 to provide for independent assessments of the storage/disposal facilities of ERDA. Our preference for accomplishing this is by giving the Nuclear Regulatory Commission the authority and responsibility for establishing policies, standards, and requirements in cooperation with the Energy Research and Development Administration for carrying out these assessments.

We also recommended that the Congress closely scrutinize, through the annual authorization and appropriation process, the progress of the Energy Research and Development Administration's program for long term waste management.

Recommendations to ERDA

--Proceed to reevaluate the impact that spent fuel storage and/or disposal will have on its commercial respository program.

--Reconsider the need for six high level waste repositories in view of disposal requirements through the year 2000 and justify on a cost-benefit

basis the number it finally believes will be necessary.

--Reevaluate plans for completing the first two repositories by 1985, considering realistically all social, geological, and regulatory obstacles.

--Consider the appropriateness of using the New Mexico location also as a commercial waste disposal site, since by 1985 no other facilities may be ready to receive these wastes and public utilities may no longer be able to store them at the reactor sites unless other facilities are constructed. This should be done without sacrificing or impairing the mission of the site to receive Energy Research and Development Administration transuranic contaminated waste.

Recommendations to NRC

--Proceed on a priority basis to complete its waste repository licensing procedures.

--Proceed on a priority basis to include in its waste performance criteria, criteria for the storage or disposal of spent fuel.

--Complete and issue the generic environmental impact statement on spent fuel as soon as possible, and in the interim, limit through license restrictions the amount of fuel which can be stored in reactor pools to no more than

what was originally licensed for, unless the reactor would be forced to shut down operations.

It is our view that without improved programs for present and future waste disposal operations, nuclear power cannot continue to be a practical source of energy.

U.S. Coal Development--Promises, Uncertainties (Not Yet Issued)

The last report I will discuss here today is one that we will issue in a matter of days. Because the report has not been issued, my comments will be limited.

In this report, we discuss the status, prospects, and major issues in U.S. coal development from the standpoints of demand, supply, production, transportation, environmental and socioeconomic impacts, and America's position in the world coal market.

For analytical purposes, we have selected two energy growth scenarios representing possible high and low energy demand ranges. Actual energy demand likely will fall somewhere between the two.

In general we explore the physical and economic limits of the coal solution.

CONCLUSION

I have provided you today with a small sampling of the work that GAO has done in the energy area. We view our role as that of providing the Congress, other decision-makers, and the public with the kinds

of analysis and recommendations needed to effect proper planning in the complex and dynamic energy area. A crucial factor in the area of energy planning is lead times.

I think that our basis position can be summed up by stating that effective energy planning must reflect the dynamic, changing nature of the energy situation. It must be flexible enough to handle changing circumstances to insure that our attention stays on the questions which bear most heavily on the Nation's energy problems. But, at the same time, policies must be sufficiently stable over time so that energy producers and consumers will have a reasonable basis for making future plans. The long lead times we have between conception and completion of many energy projects require that we come to grips with these policy problems early, and make sufficiently sound decisions that hopefully will not entail a lot of later changes.

Finally, there is real doubt whether the Nation has yet come to realize the importance of these lead times.