

## DOCUMENT RESUME

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[Energy Supply Initiatives]. EMD-78-92; B-178205. June 22, 1978.  
6 pp.

Report to Rep. Olin E. Teague; Sen. John C. Stennis; Rep. Harley Staggers; Rep. George H. Mahon; Sen. Warren G. Magnuson; Sen. Henry M. Jackson; Rep. Melvin Price; Rep. Morris Udall; by Robert F. Keller, Acting Comptroller General.

Issue Area: Energy (1600).

Contact: Energy and Minerals Div.

Budget Function: Natural Resources, Environment, and Energy:  
Energy (305).

Organization Concerned: Department of Energy; Nuclear Regulatory Commission.

Congressional Relevance: Rep. Olin E. Teague; Rep. Harley Staggers; Rep. George H. Mahon; Rep. Melvin Price; Rep. Morris Udall; Sen. John C. Stennis; Sen. Warren G. Magnuson; Sen. Henry M. Jackson.

Authority: Radioactive Waste Management Act of 1977.

Summaries are provided of various studies by GAO's Energy and Minerals Division to assist in the consideration of the Department of Energy's (DOE's) proposed energy supply initiatives. A report dated February 2, 1978, noted that more information would be helpful to justify existing and future funding levels in terms of the possible contributions that solar energy can make. It also pointed out that the benefits of solar energy in terms of energy production are not clear. Three reports dealt with actions to expedite the regulatory process: the Nuclear Regulatory Commission's management process for evaluating nuclear powerplant designs and sites, the failure of the Nuclear Regulatory Commission to reduce leadtimes in building nuclear powerplants, and delays in the processing of construction permit applications. In terms of reducing institutional difficulties arising from development of new energy supplies, a July 1977 report discussed the need for additional Federal assistance for Rocky Mountain communities that will be affected by energy resource development. A report dated August 24, 1976, concluded that synthetic fuels production, while technically feasible, is not cost effective. Several reports have addressed various aspects of coal production. Problems relevant to implementation of the Radioactive Waste Management Act of 1977 have been explored, and a September 1977 report noted that the DOE had not yet demonstrated acceptable solutions for long-term storage and/or disposal of radioactive waste. (RRS)

6804



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

June 22, 1978

B-178205

The Honorable Olin E. Teague  
The Honorable John C. Stennis  
The Honorable Harley Staggers  
The Honorable George H. Mahon  
The Honorable Warren Magnuson  
The Honorable Henry Jackson  
The Honorable Melvin Price  
The Honorable Morris Udall

On May 15, 1978, the Department of Energy (DOE) proposed a series of energy supply initiatives. These initiatives require an initial budget commitment of \$163 million (\$33 million in FY 1978 and \$130 million in 1979), which will be provided by reprogramming fiscal year 1978 funds and proposed changes to the fiscal year 1979 budget.

The General Accounting Office's Energy and Minerals Division has, over the last few years, completed several studies which may be helpful to your Committee as you consider these proposed budget changes. These studies are summarized in the succeeding paragraphs and copies of the reports are enclosed.

Solar Energy

An increase in budget authority is proposed by DOE for several solar activities--photovoltaic research, wind machine demonstrations, gas and liquid fuels from biomass, dispersed energy systems demonstrations, and passive solar heating and cooling designs. In our report dated February 2, 1978, 1/ we stated that more information would be helpful to justify existing and future funding levels in terms of the possible energy contributions that solar energy

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1/ The Magnitude of the Federal Solar Energy Program and the Effects of Different Levels of Funding, (EMD-78-27; 2/2/78).

can make. While this report shows additional funds for solar energy R&D can be spent, it also points out that it is not clear what benefits in terms of energy production would result. We believe that additional funding levels would be warranted for a specific solar technology or application if it can be more clearly shown that significant amounts of energy would result.

### Regulatory Process

The energy supply initiatives include actions to expedite the regulatory process. The following three reports deal with this subject.

First, we reviewed the Nuclear Regulatory Commission's management process for evaluating nuclear power plant designs and sites and made several recommendations for improvements in our report dated April 27, 1978. 2/ This report discusses:

- The Commission staff's perspective on the adequacy of the licensing process;
- The Commission staff's ability to raise dissenting technical opinions without experiencing adverse personnel actions, and;
- The Administration's proposed legislation to streamline the licensing process.

In another report dated March 2, 1977, 3/ we noted that utilities take 10 years to build nuclear powerplants and that shorter leadtime would provide electrical power to the Nation sooner and would lower powerplant costs. Our study found, however, that the Nuclear Regulatory Commission has had limited success to date in reducing

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2/ Nuclear Powerplant Licensing: Need for Additional Improvements. (EMD-78-29; 4/27/78).

3/ Reducing Nuclear Powerplant Leadtime: Many Obstacles Remain. (EMD-77-15; 3/2/77).

leadtimes in the future--due to increasing State and local Government requirements, evolving safety criteria, and other factors, many of which are not under the Commission's control.

Another report dated February 16, 1978, 4/ concerns the time it took for the Tennessee Valley Authority to obtain Nuclear Regulatory Commission permits to begin construction activities at its Hartsville and Phipps Bend nuclear powerplants. The Commission's processing of permit applications for these plants met several delays and took longer than they should have. In our opinion, most of the delay is attributable to weaknesses in the Commission's process. This report discusses the delays experienced in both projects--the Commission's procedural weaknesses that delayed the projects as well as other reasons, and our recommendations for correcting these weaknesses.

### Institutional Barriers

The energy supply initiatives include a program for aiding in reducing institutional difficulties arising from development of new energy supplies.

Our report dated July 13, 1977, 5/ discusses the need for additional Federal assistance for Rocky Mountain communities that will be affected by energy resource development.

We stated that the need for additional Federal assistance at this time has not been demonstrated. If, however, the Congress does wish to further help Rocky Mountain communities, such assistance should be contingent on the States doing three things: taking actions to meet a

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4/ Licensing Tennessee Valley Authority Nuclear Powerplants, (EMD-78-37; 2/16/78).

5/ Rocky Mountain Energy Resource Development: Status, Potential and Socioeconomic Issues, (EMD-77-23; 7/13/77).

minimum level of assistance to communities affected by energy development; developing plans to systematically deal with the impacts; and clearly demonstrating in their plans that the assistance would actually be used to help energy-affected communities.

### Synthetic Fuels

The energy supply initiatives include several proposals to accelerate the development of synthetic fuels.

In our report dealing with Federal assistance for financing of the commercialization of emerging energy technologies dated August 24, 1976, 6/ we concluded that, at the present time, synthetic fuels production, while technically feasible with first generation technologies, is not cost effective. We recommended that such technologies receive a high priority for Government RD&D to develop more advanced and efficient technologies.

We are currently reviewing the DOE's Fossil Energy Demonstration Program. The report is expected to be issued this summer.

We have issued several reports addressing various aspects of coal production. In two recent reports, 7/ we discussed the likelihood of producing more than a billion tons of coal and identified potential constraints in such areas as mining technology, manpower, transportation, and environment that must be solved before coal's potential can be realized. These problems tie in directly to insuring adequate supplies of coal to feed synthetic fuel plants.

During 1976 we issued a report 8/ that addressed

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6/ An Evaluation of Proposed Federal Assistance for Financing Commercialization of Emerging Energy Technologies, (EMD-76-10; 8/24/76).

7/ Federal Coal Research--Status and Problems to be Resolved, (RED-75-322; 2/18/75). U.S. Coal Development--Promises and Uncertainties, (EMD-77-43; 9/22/77).

8/ Status and Obstacles to Commercialization of Coal Liquefaction and Gasification, (RED-76-81; 5/5/76).

obstacles in the Federal programs to demonstrate commercialization of synthetic fuels from coal. We concluded that processes which produce synthetic fuels are commercially available but are not competitive with conventional oil and gas when discounted to present price equivalents. Additional research and development is underway, and it appears that new processes are necessary to design a commercially viable plant.

The energy supply initiatives include reallocating unobligated funds from the clean boiler fuel demonstration (Coalcon). In our report dated August 17, 1977, 9/ we stated that the Coalcon project--the first Federal attempt to demonstrate a synthetic fossil energy technology by converting coal to a clean burning liquid fuel--was plagued by technical and managerial problems from the beginning. It failed in its initial phase despite a \$10 million cost overrun (211 percent) and a 14-1/2 month schedule slippage. The project was cancelled by DOE on June 15, 1977.

#### Nuclear Waste

The energy supply initiatives include a reduction in funding for storage of defense waste at Savannah River. In our report dated September 9, 1977, 10/ we stated that after several decades of work, the Atomic Energy Commission did not, and its successor--the Department of Energy--has not yet, demonstrated acceptable solutions for long-term storage and/or disposal of defense and research-related high level radioactive waste, or satisfied the scientific community that present storage sites are suited geologically for long-term storage or disposal.

We also addressed some of the problems relative to implementation of the Radioactive Waste Management Act

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9/ First Federal Attempt to Demonstrate a Synthetic Fossil Energy Technology--A Failure, (EMD-77-59; 8/17/77).

10/ Nuclear Energy's Dilemma: Disposing of Hazardous Radioactive Waste Safely, (EMD-77-41; 9/9/77).

of 1977 in our report issued December 5, 1977. 11/ In this report we noted that this has become a major stumbling block to development of nuclear fission as a major energy resource.

While the above reports were issued prior to the Energy Supply Initiatives, and may not directly refer to whether or not a specific proposal should be approved, we hope that they can be of some value to the Committee in its deliberations. We would be happy to provide additional information or answer any questions you may have concerning the enclosed reports. Copies of this letter are being sent to the Secretary of Energy and to the Chairmen of the following committees: Senate Committee on Appropriations, Senate Committee on Armed Services, Senate Committee on Energy and Natural Resources, House Committee on Appropriations, Senate Committee on Armed Services, House Committee on Interior and Insular Affairs, House Committee on Interstate and Foreign Commerce, and House Committee on Science and Technology.

Acting

  
Comptroller General  
of the United States

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11/ The Radioactive Waste Management Act of 1977,  
(EMD-78-21; 12/5/77).