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General Accounting Office

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DOE's Decision To Defederalize The Bartlesville Energy Technology Center

The Department of Energy (DOE) proposes to convert the Bartlesville Energy Technology Center from its Government-owned/Government-operated status to a Government/industry facility managed and operated by a nonprofit organization under a cooperative agreement.

DOE considered numerous alternatives for operating and managing the Center. Under DOE's proposed cooperative agreement:

- Some of the Center's personnel may be offered positions by the new organization.
- Controls would be established to make sure that the Center's work is consistent with DOE's philosophy of funding long-term, high-risk research and that the results of this research are disseminated to the public.
- The Center could continue conducting research work for foreign governments and others.



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RESOURCES, COMMUNITY,
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DIVISION

B-210438

The Honorable Don Fuqua
Chairman, Committee on
Science and Technology
House of Representatives

The Honorable Philip R. Sharp
Chairman, Subcommittee on
Fossil and Synthetic Fuels
Committee on Energy and Commerce
House of Representatives

The Honorable Michael L. Synar
House of Representatives

Your letter dated September 28, 1982, expressed concern about the Department of Energy's (DOE's) decision to defederalize the Bartlesville Energy Technology Center by converting it from its Government-owned/Government-operated status to a Government/industry-operated facility under a cooperative agreement. Specifically, you requested that we respond to questions concerning the (1) alternatives DOE considered in making its decision and the cost/benefit analysis supporting that decision and (2) effects of this decision on the Center's current employees, future petroleum research decisions, the Nation's energy supply balance, technology transfer, agreements with foreign governments, and research work being performed for others. This letter summarizes the results of our review. Our detailed responses to your specific questions and a statement of our objectives, scope, and methodology are discussed in appendix I to this letter.

The Bartlesville Energy Technology Center in Bartlesville, Oklahoma, is one of five energy technology centers comprising DOE's field organization for supporting fossil energy research and development. The centers are Government-owned/Government-operated facilities run by Federal employees. During fiscal year 1982, the fossil energy workforce at headquarters and the centers totaled about 1,032, including about 143 employed at the Bartlesville Center.

Budget and Federal personnel reductions in fiscal year 1982 and anticipated reductions in fiscal year 1983 affected DOE's fossil energy research and development program and raised questions concerning whether the centers could continue to be federally owned and operated. Although budget cuts for fiscal year 1982 only marginally affected the centers, anticipated funding levels for future fiscal years caused DOE to question whether the fossil program could continue supporting the five centers. Thus, in October 1981, DOE began to identify and assess various options, which included streamlining the organization of the five centers, consolidating their research activities, or defederalizing them (that is, converting them to non-Federal entities).

The Office of Management and Budget's (OMB's) markup of DOE's proposed budget for fiscal year 1983 called for cuts that were significantly greater than DOE had expected. The proposed marked-up budget for the fossil energy program amounted to \$107 million--compared with \$417 million for fiscal year 1982.¹ It also called for personnel ceiling reductions of more than 50 percent for both headquarters and the five centers. As a result of that markup, DOE determined that it could no longer support all five centers. It decided to retain the two largest centers which manage the majority of the fossil energy program.

DOE determined that the remaining three centers should be defederalized; that is, all research and administrative support activities would be transferred to a non-Federal entity. Two of these centers--Laramie and Grand Forks--are located adjacent to universities, and DOE is negotiating with them to assume management of the centers as university facilities. The University of North Dakota submitted its proposal to acquire and manage Grand Forks on October 13, 1982, and the University of Wyoming submitted its proposal to acquire and manage Laramie on November 2, 1982. DOE estimates that agreements will be signed by March 1, 1983, and April 1, 1983, respectively, for these two facilities.

Because the third Center--Bartlesville--is not located near a university, DOE considered other methods for continuing the Center's petroleum research program. DOE decided that the best approach was to defederalize the Bartlesville Center by entering into a cooperative agreement with a private institution for its operation. Under this arrangement, DOE would fund in-house

¹Although DOE's decision concerning the Bartlesville Center was based on the \$107 million budget, on Dec. 30, 1982, the Congress appropriated \$311 million for fossil energy research (Public Law 97-394). Nevertheless, DOE is continuing to move ahead on its plans to change the Bartlesville Center's status.

research at the Center, review and approve its research plans, and disseminate research results to the public.

In making its decision to defederalize the Bartlesville Center, DOE identified and assessed a number of alternatives but made no cost/benefit analysis to support its decision. For example, in October and November 1981, anticipating a reduced fiscal year 1983 budget, DOE conducted three studies that together considered 11 different alternatives. Although one study reached no conclusions, the other two generally concluded that the Bartlesville Center should continue to operate as a Federal facility. The studies concluded that defederalization was not a viable alternative for effectively operating the Bartlesville Center because its research program could be diminished as a result of higher costs for contractor employee salaries. Subsequently, DOE decided to defederalize the Bartlesville Center primarily as a result of its anticipated \$107 million fossil energy budget for fiscal year 1983 and the resultant need to reduce personnel by over 50 percent.

Early in 1982, DOE examined five specific defederalization options for the Bartlesville Center and selected the option to have a non-Federal organization perform the research under a cooperative agreement. This option was determined to be the best next to keeping the Center as a federally operated facility. We found no evidence that DOE's decision was supported by a cost/benefit analysis. DOE officials explained that this analysis was not performed because they were unable to quantify the benefits. However, DOE believes its decision will be cost effective. As a privately operated facility, the Center can market its research capabilities to profitmaking organizations, thereby reducing its overall operating costs.

On September 1, 1982, DOE issued its draft solicitation calling for proposals from any non-Federal organization interested in entering into a cooperative agreement with DOE for managing and operating the Bartlesville Center. However, the Interior and Related Agencies Appropriations Act of 1983 (Public Law 97-394) limited those eligible to enter into a cooperative agreement with DOE to nonprofit institutions. DOE revised the draft solicitation to comply with the act and released it on January 18, 1983. DOE expects to select an agreement participant by August 1, 1983.

The solicitation contains a number of provisions that address your questions concerning the effects of DOE's decision. Our review of these provisions showed the following:

- All the Bartlesville Center's approximately 143 employees would be subject to a reduction in force. These employees, however, would be given first right to accept positions for which they are qualified and for which the

agreement participant believes are necessary for operating the Center. In addition, 41 would be eligible for retirement and 25 may be hired by DOE for a Federal project office to be established to oversee the cooperative agreement. Thus, DOE officials anticipate that Center employees not retiring will be provided employment.

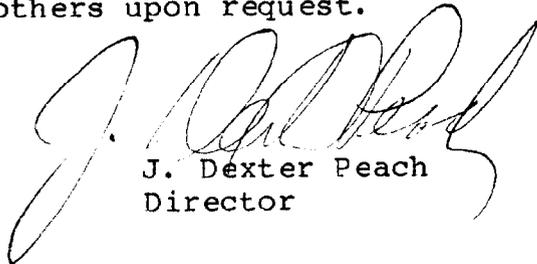
--DOE is to have direct input to future research decisions at the Bartlesville Center through various agreement participant reports, onsite monitoring, and review and approval of yearly work plans. DOE's oversight is to determine that the Center's research is consistent with the administration's policy of supporting only long-term, high-risk research and is directed toward increasing the Nation's future petroleum supplies.

--The Bartlesville Center's technology transfer activities and any current agreements with foreign governments would remain a DOE responsibility through the Federal project office. The agreement participant can also conduct new research for foreign governments, but DOE must approve any such research.

--DOE's plans encourage the agreement participant to actively seek client financing to supplement Federal appropriations. As a privately operated facility, the agreement participant could market the Center's research capabilities to a larger portion of the private sector. DOE officials foresaw no problems in the agreement participant's ability to attract new clients.

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We did not obtain agency comments on this report. However, we discussed the matters presented with DOE's Director, Office of Management, Planning and Technical Coordination, Fossil Energy, and other Fossil Energy program officials and incorporated their views where appropriate. As arranged with your respective offices, we are sending a copy of this report today to the Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce. Unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days from the date of its issuance. At that time, we will send copies to the Secretary of Energy and make copies available to others upon request.



J. Dexter Peach
Director

C o n t e n t s

APPENDIX

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ABBREVIATIONS

DOE	Department of Energy
GAO	General Accounting Office
IOCC	Interstate Oil Compact Commission
OMB	Office of Management and Budget

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DOE'S DECISION TO DEFEDERALIZE THE
BARTLESVILLE ENERGY TECHNOLOGY CENTER

By letter dated September 28, 1982, the Chairman of the House Committee on Science and Technology; the Chairman of the Subcommittee on Fossil and Synthetic Fuels, House Committee on Energy and Commerce; and Representative Michael L. Synar asked us to examine certain aspects of DOE's decision to convert the Bartlesville Energy Technology Center from its Government-owned/Government-operated status to a Government/industry-operated facility under a cooperative agreement. Specifically, they requested that we respond to the following questions.

1. What, if any, alternatives for continuing the operation of the Bartlesville Center did DOE consider?
2. Was a cost/benefit analysis made and considered by DOE in support of its decision?
3. As outlined in DOE's solicitation for proposals from parties interested in managing and operating the Bartlesville Center:
 - (a) What would happen to personnel currently employed at the Center?
 - (b) How would future decisions be made concerning the funding of long-term, high-risk research projects; would the Federal decisionmaking role change; and what would be the impact on the future energy supply balance?
 - (c) What would happen to the Bartlesville Center's technology transfer activities and research work with foreign governments?
 - (d) What would happen to research work now being performed at the Center for other Federal agencies? What arrangements are being made to continue this research?

The following sections discuss our objectives, scope, and methodology and the events that led DOE to issue a solicitation to defederalize the Bartlesville Center and answer the specific questions raised.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objective of our review was to respond to the above questions concerning DOE's decision to defederalize the Bartlesville Center and the effect of this decision on the Center's personnel and ongoing programs.

To identify the alternatives DOE considered in making its decision and to determine if DOE performed a cost/benefit analysis, we examined correspondence, internal memorandums, studies, and issue papers DOE prepared before it issued the solicitation to defederalize the Bartlesville Center. To provide our report in time for fiscal year 1984 budget deliberations and proposed hearings early in March 1983, we did not take the time to verify the assumptions DOE made in the various studies we reviewed nor did we conduct an independent cost/benefit analysis. To supplement our examination of these documents, we interviewed both current and former Bartlesville Center officials and DOE headquarters officials in the following offices: the Office of General Counsel and the Office of Management, Planning, and Technical Coordination, Fossil Energy.

To determine the probable effects of the Bartlesville Center's defederalization on specific areas of concern raised, we examined DOE's solicitation for a cooperative agreement and discussed the implication of it with DOE officials. In addition, we obtained opinions from officials of the American Petroleum Institute and the Independent Petroleum Association of America on the proposed change of status for the Bartlesville Center. We also contacted officials from the Environmental Protection Agency and the Department of Defense as well as groups within DOE responsible for programs such as conservation and solar energy, alcohol fuels, the Strategic Petroleum Reserve, and the Office of Energy Research to determine their plans for continuing their past practice of funding research at the Bartlesville Center. Our review was conducted in accordance with generally accepted government audit standards.

EVENTS THAT LED DOE TO ISSUE A
SOLICITATION TO DEFEDERALIZE THE
BARTLESVILLE CENTER

DOE's Assistant Secretary for Fossil Energy (Fossil Energy) currently has a field organization consisting of five energy technology centers that help conduct and manage the fossil energy research and development program. These centers are Government-owned/Government-operated facilities run by Federal employees. They are located in Pittsburgh, Pennsylvania; Morgantown, West Virginia; Laramie, Wyoming; Grand Forks, North Dakota; and Bartlesville, Oklahoma.

These centers, the oldest dating from 1918, were established under the Department of the Interior's Bureau of Mines. In 1975 the centers were transferred to the former Energy Research and Development Administration and in October 1977 became part of DOE. In 1979 DOE assigned lead responsibility for implementing certain areas of Fossil Energy's program to each center. The areas of specialization are:

- Pittsburgh - coal research, including direct utilization, coal liquefaction, and underground coal mining.
- Morgantown - coal gasification research including environmental studies, surface coal gasification, and unconventional gas recovery.
- Laramie - underground coal gasification, tar sands, and oil shale.
- Grand Forks - applications for lignite coals.
- Bartlesville - petroleum research including enhanced oil recovery, advanced process technology, and synthetic liquid characterization.

Beginning with fiscal year 1981, Fossil Energy refocused its program to be consistent with the then new administration's philosophy of supporting long-term, high-risk, high-payoff research in petroleum, coal, and gas and relying on the private sector to demonstrate the commercial viability of energy concepts. This refocused program resulted in substantial budget reductions in fiscal year 1982. Then, OMB significantly reduced Fossil Energy's proposed fiscal year 1983 budget more than DOE had expected. OMB's proposed budget, which was subsequently sent to the Congress, amounted to \$107 million compared with \$417 million in fiscal year 1982.² In addition, OMB's markup reduced personnel ceilings more than 50 percent for both headquarters and the five centers from 1,032 in fiscal year 1982 to 511 in fiscal year 1983. DOE determined that this proposed budget and personnel ceiling could not support all five centers. Therefore, DOE decided to retain the Pittsburgh and Morgantown Centers, which are the largest of the five, and also manage the majority of the fossil energy program.

DOE determined, however, that the three remaining centers should be defederalized; that is, all research and administrative support activities would be transferred to a non-Federal entity. Two of the centers--Laramie and Grand Forks--are located adjacent to universities, and DOE is negotiating with them to assume management of the centers as university facilities. The University of North Dakota submitted its proposal to acquire and manage Grand Forks on October 13, 1982, and the University of Wyoming submitted its proposal to acquire and manage Laramie on November 2, 1982. DOE estimates that agreements will be signed by March 1, 1983, and April 1, 1983, respectively, for these two facilities.

²See footnote on p. 2 of the letter.

Because the Bartlesville Center is not located near a university, DOE considered other methods for continuing the Center's petroleum research program. DOE decided that the best approach was to defederalize the Bartlesville Center by entering into a cooperative agreement with a private institution for its operation. Under this arrangement, DOE would fund in-house research at the Center, review and approve its research plans, and disseminate research results to the public.

On September 1, 1982, DOE released for public comment a draft solicitation for a cooperative agreement to defederalize the Bartlesville Center. On September 22, 1982, DOE met in Bartlesville, Oklahoma, to discuss this solicitation with the Bartlesville Center employees; those interested in operating the facility, such as university and industry representatives; and people from the local community. DOE had planned to revise the solicitation, release it for a second round of comments, and issue a final solicitation in October 1982. DOE expected to evaluate the proposals received and select an agreement participant by the end of May 1983. However, on September 25, 1982, DOE received an unsolicited proposal from the Interstate Oil Compact Commission (IOCC)³ to manage and operate the Bartlesville Center.⁴ DOE delayed releasing the final solicitation pending its review of this proposal.

In the interim, the President signed the Department of the Interior and Related Agencies Appropriation Act of 1983 (Public Law 97-394). This legislation contained a provision that limits those eligible to enter into a cooperative agreement with DOE to nonprofit institutions. This provision, in contrast to Grand Forks and Laramie, does not authorize DOE to transfer the Bartlesville facility--the buildings, grounds, equipment--to the agreement participant. Also, the provision requires that the appropriations committees review for 30 days DOE's planned actions before the agreement is effective. Congressional debate on this provision indicated that the Congress was concerned that the Bartlesville Center's role in fossil energy research not be diminished. To protect this role, the Conference Report included a total of \$30 million for indirect personnel costs at the five centers and a stipulation that direct personnel costs

³IOCC is composed of representatives of 30 oil-producing States and 6 States that do not produce oil. Its objective under its original charter is to conserve the Nation's oil and gas resources by the prevention of physical waste.

⁴On Dec. 28, 1982, the Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, asked us to review the activities and legal status of IOCC. We expect to respond to this request in the near future.

and related expenses be funded from specific research program allocations. The conference report indicated that DOE was to use these funds to keep the programs operating while the three centers were being transferred to non-Federal management. As of January 27, 1983, DOE had not yet made the funds available to the individual centers.

DOE revised the solicitation to comply with this legislation and issued it on January 18, 1983. DOE expects the IOCC to resubmit a proposal as one of the respondents to the final solicitation. DOE plans to complete its evaluation of all proposals received and select an agreement participant to manage and operate the Bartlesville Center by August 1, 1983.

DOE STUDIED VARIOUS ALTERNATIVES BUT
DID NOT MAKE A COST/BENEFIT ANALYSIS TO
SUPPORT ITS DEFEDERALIZATION DECISION

In 1981 DOE conducted three studies that together considered 11 alternatives for operating the Bartlesville Center's research program. In part, the studies concluded that defederalization was neither feasible nor desirable and that the Center should continue as a Federal facility. However, based on anticipated budget and personnel ceiling reductions, Fossil Energy decided to defederalize the Bartlesville Center. Early in 1982 Fossil Energy examined five specific defederalization options to implement this decision. DOE selected the option to have a non-Federal organization perform the research under a cooperative agreement with the Government. Although Fossil Energy considered the costs and benefits of some of the 11 alternatives examined in 1981, neither the decision to defederalize nor the option chosen was based on a cost/benefit analysis.

Studies conducted in 1981

One of the 1981 studies was conducted jointly by DOE's Office of Management and Administration and Fossil Energy. This joint study, which DOE issued on October 15, 1981, discussed the advantages and disadvantages of four alternatives but did not present a cost/benefit analysis or reach any conclusion about which alternative was the most acceptable. The study focused on alternatives that would streamline the organization of the centers and avoid duplication of activities rather than on alternatives for substantially reducing the budget or staff. The four alternatives considered were:

- (1) Transfer line management of the centers to a DOE operations office reporting to the Under Secretary; maintain in-house research capability at each center; and consolidate project management/technical information dissemination functions within an Eastern center and a

Western center, each of which, in turn, would report to one of DOE's operations offices.

- (2) Identical to (1) except that project management/technical information dissemination functions would be transferred to an operations office.
- (3) Maintain Fossil Energy's control of the centers; retain in-house research capability at each center; consolidate project management/technical information dissemination functions at an Eastern and Western center that, in turn, would report to Fossil Energy. Program support, for example, would be provided by a DOE operations office.
- (4) Identical to (3) except that program support would be provided by an Eastern and Western center.

This study concluded that based on a then anticipated fiscal year 1983 budget of \$366 million compared with \$417 million in fiscal year 1982 there would be only limited impacts on the centers.

The other two 1981 studies were conducted by the Western Energy Technology Task Force.⁵ The task force's first study, issued on October 30, 1981, considered various alternatives for consolidating two of the Western centers--Bartlesville and Laramie. The task force evaluated a total of six alternatives based on an anticipated \$305 million budget that was less than the \$366 million anticipated at the time of the previous study. Four of the six alternatives were consolidation scenarios in which the centers would continue as Federal entities. Two of these alternatives would consolidate at either Bartlesville or Laramie while maintaining a small satellite facility at the other center, and two alternatives would consolidate at Bartlesville or Laramie without satellite facilities. The two remaining alternatives were defederalization scenarios that would transfer center activities and personnel to a non-Federal entity. One would defederalize both centers with Federal management and support staff onsite. The other would defederalize both centers but would consolidate Federal management and support staff at a neutral location (not specified in the study).

⁵The task force consisted of two members of Fossil Energy's Office of Oil, Gas, Shale, and Coal Liquids and two members from each of the centers. Its mission was to analyze various consolidation scenarios for the Bartlesville and Laramie centers.

The task force concluded that the two most viable alternatives were those consolidating at either Bartlesville or Laramie with satellite offices. Those two alternatives were believed to be the least disruptive to the research work being conducted at the centers. While some research activities and most support functions would be consolidated, the satellite facility would continue to have limited in-house, "hands-on" research capability. The task force concluded that the least viable alternatives were those that would defederalize Bartlesville and Laramie because their research programs could be diminished as a result of higher costs for contractor employee salaries.

The task force issued its second study on November 17, 1981, further analyzing two consolidation with satellite alternatives considered in the October 30, 1981, study to determine what effect contracting out some of the management and administrative support functions would have on the conclusions previously reached. While the study did not provide a basis for selecting between Bartlesville or Laramie as the consolidation site, it did conclude that consolidating at one Western energy technology center, with a contractor performing some of the management and support functions, would be a viable alternative.

The November 1981 study also examined a variation of the defederalization alternatives studied earlier. This alternative would defederalize the Bartlesville and Laramie centers and consolidate management and program support functions at one of the centers. The report concluded that this defederalization alternative was no more feasible or desirable than the previous defederalization alternatives considered because (1) salary costs for conducting research at Bartlesville and Laramie would increase by \$7.5 million under non-Federal management and (2) these higher costs could reduce program content and adversely affect both centers' overall effectiveness.

Studies conducted in 1982

The two 1981 studies that considered defederalization did not support it as a viable alternative. These studies were made at a time when DOE was anticipating a \$305 million fiscal year 1983 Fossil Energy budget. However, as noted previously, OMB reduced the proposed fiscal year 1983 Fossil Energy budget to \$107 million and reduced the personnel ceiling for the program by more than 50 percent at headquarters and the centers.

To reduce its personnel and budget to meet these new targets, Fossil Energy decided to defederalize the Bartlesville, Laramie, and Grand Forks centers. To determine the best way to defederalize Bartlesville only, DOE, early in 1982, examined the following five specific options in three issue papers.

- A Government-owned facility that would be operated by a private contractor under a cost-plus-fixed-fee contract.
- A federally funded research and development center that would be operated by a university, nonprofit institution, or an industrial firm under a long-term agreement with DOE to perform research. While not owned by the Federal Government, the center would depend almost entirely on Federal contracts for its business.
- An arrangement whereby the Government would lease the facility to a private contractor but would maintain the option of funding research activities.
- A facility operated by a State or local government agency.
- A nonprofit organization modeled after the Electric Power Research Institute and the Gas Research Institute under a cooperative agreement with the Federal Government to maintain a research program.

Two of the issue papers reached no conclusions. However, the third concluded that a nonprofit organization under a cooperative agreement with the Federal Government was the best option for continuing the Center's research functions next to keeping the Center as a federally operated facility. The method DOE chose--to enter into a cooperative agreement with a non-Federal organization--was similar to the conclusion reached in the third issue paper. However, we could find no evidence supporting DOE's rationale concerning why that option was the most effective or efficient way to operate the Bartlesville Center. As discussed earlier, the Interior and Related Appropriations Act of 1983 (Public Law 97-394) subsequently limited those eligible to enter into a cooperative agreement with DOE to nonprofit institutions.

A cost/benefit study was not made to support the defederalization decision

Although DOE analyzed the costs and benefits of some of the alternatives it studied in 1981, a cost/benefit study was not made of the defederalization options analyzed in 1982. Rather, DOE's decision to defederalize the Bartlesville Center was primarily based on the need to accommodate greatly reduced budget and personnel ceilings. Nevertheless, DOE believes its decision will be cost effective because profitmaking organizations could begin to use the Bartlesville Center's research capabilities, thereby reducing the Federal Government's costs of operating the Center.

The October 30, 1981, Western Energy Technology Task Force report analyzed for both Bartlesville and Laramie the cost and staffing effects, program and management effectiveness, and effects on the surrounding community of the alternatives it considered. The task force estimated that defederalization could increase costs by \$7.5 million for research being conducted at these centers. The task force attributed these higher costs to contractor employee salaries, which it assumed would be higher than those paid to Federal employees. It concluded that the combination of a limited budget and the higher salary costs could reduce program content and adversely affect the centers' overall effectiveness. However, the task force pointed out that if DOE's principal goal was to reduce the number of Federal employees, then defederalization was very attractive since the Federal work force could be reduced by 225 people.

DOE's examination of defederalization options in 1982 for the Bartlesville Center consisted of exploring the advantages and disadvantages of these options; we found no evidence a cost/benefit analysis was performed. Fossil Energy's decision to defederalize Bartlesville was not based on the potential cost and benefits of this option but because it would help facilitate meeting budget and personnel ceilings. DOE officials explained that a cost benefit analysis was not performed because they were unable to quantify the benefits. However, DOE believes its decision will be cost effective because the agreement participant could expand the Center's research work for organizations outside DOE. DOE officials explained that, with constrained budgets, an increasing portion of the Center's total funds is spent for overhead costs. As a privately operated facility, charges for work done for others would include amounts to offset these overhead costs. Therefore, DOE officials believed that the proposed approach would result in cost savings to the Federal Government.

EFFECTS OF THE PROPOSED COOPERATIVE AGREEMENT ON THE BARTLESVILLE CENTER

DOE's final solicitation outlines the proposed cooperative agreement for a nonprofit organization to operate and manage the Bartlesville Center. The following sections provide an overview of DOE's solicitation and answer specific questions raised concerning the potential effect of the cooperative agreement as defined in the solicitation on Federal workers currently employed at the Bartlesville Center and the programs they manage.

Overview of DOE's solicitation

The solicitation describes a three-part research program that would be carried out at the Bartlesville Center under the cooperative agreement. This program would consist of (1) a basic research component fully funded and directed by Fossil

Energy, (2) an optional research component to be cost-shared by Fossil Energy and the agreement participant, and (3) a component aimed at carrying out research work for others, including Federal and State agencies and industry.

Under the basic research component, Fossil Energy would provide at least \$5 million each year for 5 years. This research would be directed toward long-range national priorities and include work on innovative ideas that could later be developed by the petroleum industry to expand domestic energy production. Generally, this component would include research in all areas of petroleum technology from extraction, through processing, to utilization. Examples of the specific research to be conducted include evaluating the unique problems of reservoirs for which no enhanced oil recovery technology now exists and determining the upgrading needed to make alternative crude oils acceptable for conventional refining.

The optional research component would be cost-shared by Fossil Energy on a declining basis. Fossil Energy would contribute \$4 million the first year and reduce its share by \$1 million each year until the fifth year when it would contribute nothing. The optional component would also include research in all areas of petroleum technology. Examples of the types of efforts Fossil Energy would consider cofunding include developing improved methods for evaluating polymers and reservoir simulation modeling and discovering new and/or modified techniques, materials, and tools to more efficiently process fossil liquids for various end uses.

The third component of the research program would encourage those interested in operating the Bartlesville Center to actively solicit work for others. Some examples of the type of activities DOE would expect the agreement participant to consider are: contract work for electric utilities and Federal agencies; research support for small industry, which may not be able to meet its own research needs; technical assistance to State and local governments; and joint programs with universities and nonprofit institutions.

DOE also stipulated that it would establish a Federal project office consisting of 25 people to manage ongoing Federal activities and oversee the cooperative agreement. Although the solicitation is not specific concerning the roles and functions of this office, DOE officials explained that the project office would be responsible for existing domestic and foreign contracts and technology transfer, which includes information dissemination and maintaining the Center's three data bases. In addition, the project office would monitor the activities of the

agreement participant to determine that the terms of the cooperative agreement are being met. DOE estimated the costs for the project office to be about \$1 million each year. DOE would pay the costs of this office over and above the funding for the basic and optional components of the Bartlesville Center's research program.

Personnel

All the Bartlesville Center employees would be subject to a reduction in force. However, DOE officials believe that although the personnel issue is negotiable, provision will be made for all the Center's employees. Some of these employees could be hired by the agreement participant, some could go to work for the project office, and some could retire.

The solicitation provides that Federal employees, both full and part-time, will be given first right to accept those positions for which they are qualified and which the agreement participant believes are necessary to operate the Center. The solicitation does not specify which positions will be available to the Center's personnel under the cooperative agreement. In addition, 25 positions will be available in DOE's project office. Although DOE has not yet determined the staff composition of this office, Fossil Energy officials acknowledge that most of the staff will likely consist of existing Center personnel who are already familiar with its program.

As of September 1982, the Center had about 143 Federal employees--72 research personnel and 71 support personnel. Our review showed that, once a reduction in force is initiated, 41 of the total employees are eligible for retirement in calendar year 1983. DOE officials anticipate that Center employees not retiring will be provided employment. However, they pointed out that the personnel issue will be subject to negotiations with the agreement participant.

Future research decisions and their impact on the future energy supply balance

DOE would have mechanisms to determine that its current research emphasis on long-term, high-risk activities is protected if the management responsibilities are implemented as outlined in the solicitation. As a result, the Bartlesville Center should continue to conduct research activities relating to increasing the Nation's future petroleum supplies.

According to the solicitation, DOE would direct all research efforts it funds under the program's basic research component. This research, according to DOE, would be directed toward long-range national priorities consistent with the current

administration's emphasis on supporting only research activities that industry is not likely to undertake. The optional, cost-shared component envisioned by DOE would complement the basic research component and broadly serve the national interest. However, DOE intentionally did not specify the activities for the optional component because it wanted the agreement participant to do this in responding to the solicitation. DOE intends to review and approve the research planned for the optional component.

DOE's project office would monitor the participant's activities under the cooperative agreement. As outlined in the solicitation, DOE also would establish two committees to provide technical direction and management over the agreement participant--a management committee and a technical committee. The management committee would meet at least semiannually and would approve the Center's specific research activities. It would be composed of four senior level individuals, two representing DOE and two representing the agreement participant, plus a DOE chairman who would vote on matters only to decide a tie. By retaining a voting majority on the management committee, DOE could ensure that the research undertaken is consistent with its priorities. The technical committee would recommend to the management committee the specific elements of both the basic and optional program components and would meet at least quarterly. This committee would be composed of six technical individuals with equal DOE and agreement participant representation, plus a chairman representing the agreement participant who would vote only to decide a tie.

Each year the agreement participant would prepare a research plan and submit it to the technical committee for its review and recommended support. The research plan would establish milestones for each work element. In addition, the agreement participant would prepare a monthly status report for each project included in the research plan and a quarterly technical progress report setting out significant accomplishments and results. DOE also would require an annual technical report in each research area and financial status reports showing Government funds spent. The financial reports also would summarize income earned on work done for others and provide a marketing strategy for the next fiscal year. The financial reports would allow DOE to assess how its program relates to the research work being done for others and the extent the contractor is achieving financial independence in performing this work.

Consistent with its emphasis on long-term, high-risk, high payoff activities, DOE's planned research at the Bartlesville Center would probably be a very small percentage of petroleum research underway in the United States. Furthermore, the risks associated with this type of research make it highly uncertain

how the results will ultimately be applied. However, since DOE has made provisions to have direct input in formulating future research plans under the cooperative agreement, the Bartlesville Center's work should continue to provide information pertaining to increasing the Nation's future petroleum supplies.

Technology transfer and work
with foreign governments

The Bartlesville Center's technology transfer activities would remain the responsibility of DOE through its project office. These activities at the Center include making technical reports available to the public, hosting and participating in technical meetings and conferences, and maintaining three data bases of research findings that are available to the public. The solicitation requires the agreement participant to prepare quarterly and final technical reports for each project and annual summaries of the work accomplished in each program area. These reports, along with journal articles and conference papers that communicate the results of scientific and technical work performed by the agreement participant at the Bartlesville Center, will be disseminated to the public by DOE.

The Bartlesville Center's three data bases--crude oil, alternative fuels, and enhanced oil recovery--contain information on the results of research activities conducted or funded by the Center. The Crude Oil Analysis Data Bank is a computerized compilation of over 7,500 crude oil samples from the world's major oil fields. The public can access this data directly by telephone free of charge. Since November 1980, over 800 inquiries for the data have been received from all facets of the domestic oil industry, including major oil companies, small producers, and drilling companies.

Unlike the crude oil data bank, the Alternative Fuels Data Bank merely contains brief synopses of publications and research in the area of alternative fuels such as coal liquids, coal gas, and shale. By design, these synopses are less technical than the original research publications. As a result, the information is useful to nontechnical individuals, such as equipment manufacturers and vehicle fleet operators, seeking information on alternative fuels. The public can also access this information by telephone at no cost. According to a DOE official, this information is accessed from various locations by about 100 users each month.

The Bartlesville Center has also amassed data on various oil reservoirs that are candidates for enhanced oil recovery methods and over 600 enhanced oil recovery projects nationwide. Although the Center has disseminated this data through quarterly reports and seminars, it has not been computerized. According

to the Bartlesville Center's Deputy Director, funds have not been made available to automate the data and make it generally accessible to the public. However, if funds are made available, the project office will be responsible for systematizing this data and assuring its accessibility.

DOE has also provided two methods to allow the Bartlesville Center to conduct research work for foreign governments. Fossil Energy could include this research as part of the basic research component of the cooperative agreement. Under this method, any work the Center does for foreign governments would be under the direction of the project office. The agreement participant could also contract directly with foreign governments; however, DOE must give the agreement participant approval to proceed with contract negotiations and must approve the contract before it is finalized.

The only foreign government agreement DOE currently has that involves the Bartlesville Center is with Venezuela. The Center has been helping Venezuela to characterize that country's heavy oil deposits and determine the most effective enhanced oil recovery methods to use. DOE's current agreement with Venezuela expires on September 20, 1983. If DOE meets its time frames and signs the cooperative agreement by August 1, 1983, the research remaining under the Venezuela agreement would be performed by the agreement participant as part of the DOE-funded basic research component. In addition, the results of this research, except for proprietary data, would be disseminated by the project office to the public and Venezuela.

Work for others

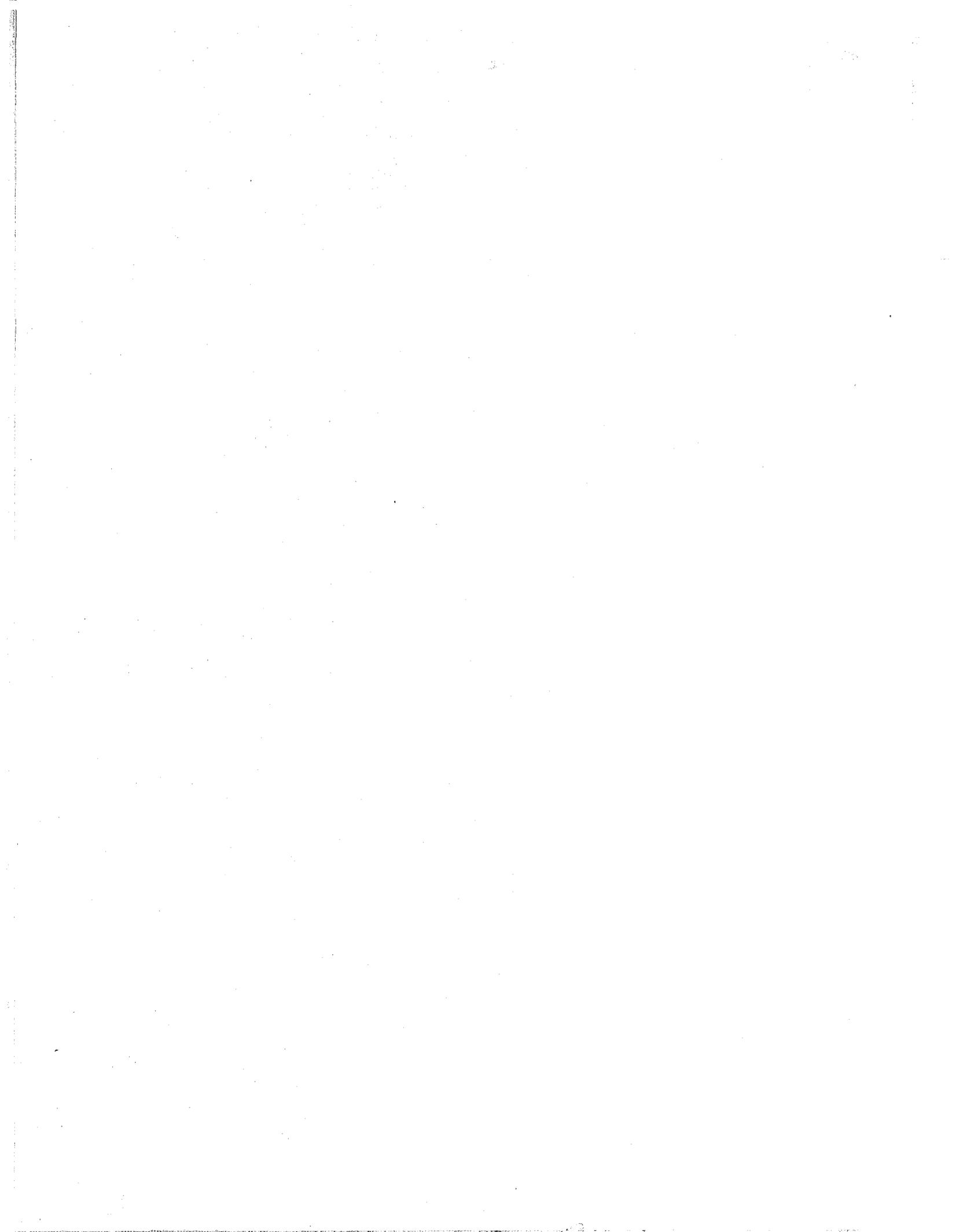
Ongoing research activities for other Federal agencies would be completed by the agreement participant under the direction of the project office. DOE's plans encourage the agreement participant to solicit client funding from Federal and State agencies and industry to supplement the funding Fossil Energy would provide. However, the participant will probably have to solicit new customers for the Bartlesville Center because its current clients are decreasing their funding.

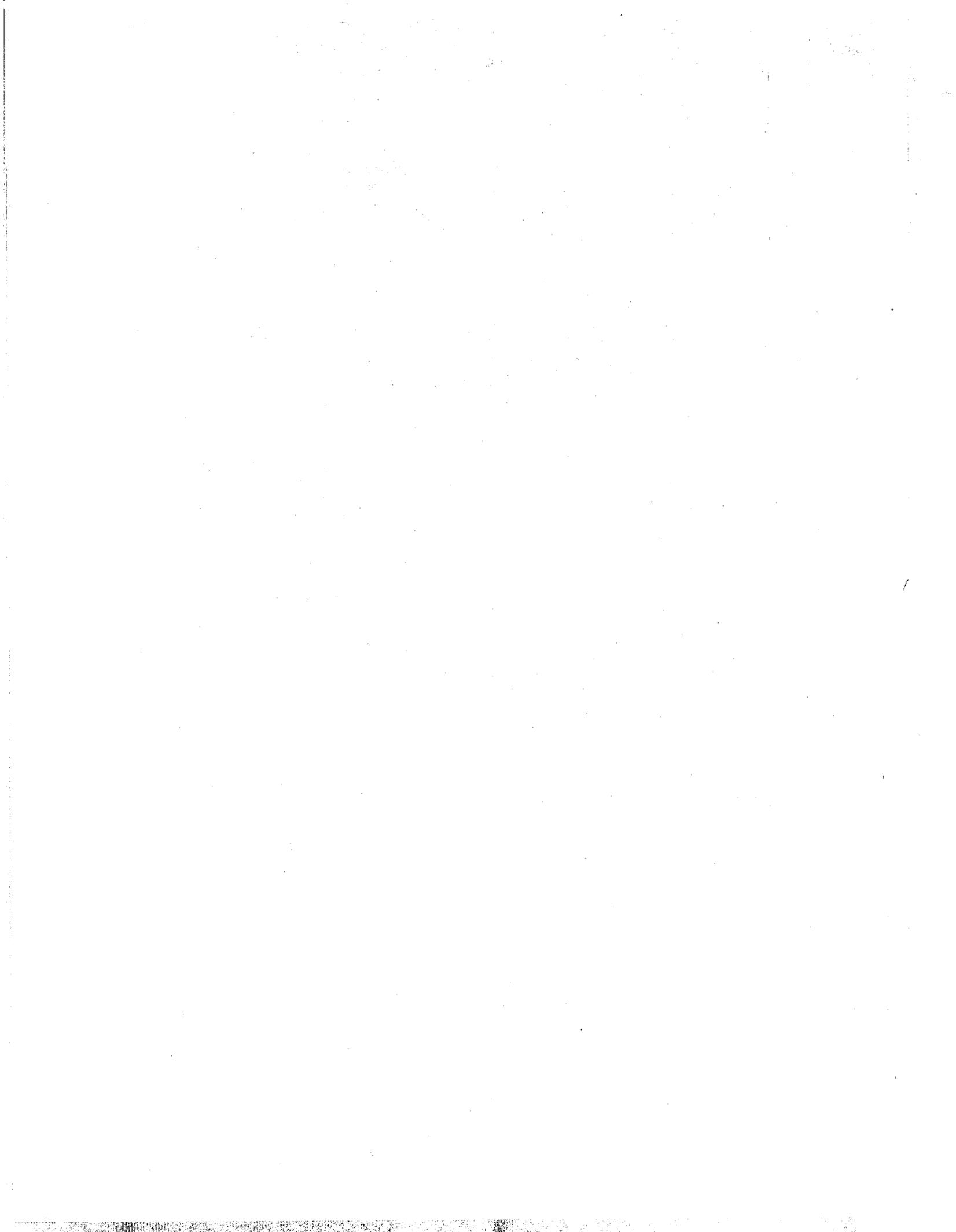
In the past, the Bartlesville Center had performed research work for DOE groups other than Fossil Energy, other Federal agencies such as the Department of Defense, and nonprofit entities such as the American Petroleum Institute. In fiscal years 1981 and 1982, about 96 percent of the Center's client funding came from DOE programs other than fossil energy such as conservation and solar energy, alcohol fuels, the Strategic Petroleum Reserve, and the Office of Energy Research. According to program officials within these offices, some of this funding will decrease in fiscal years 1983 and 1984 and some will be stopped entirely.

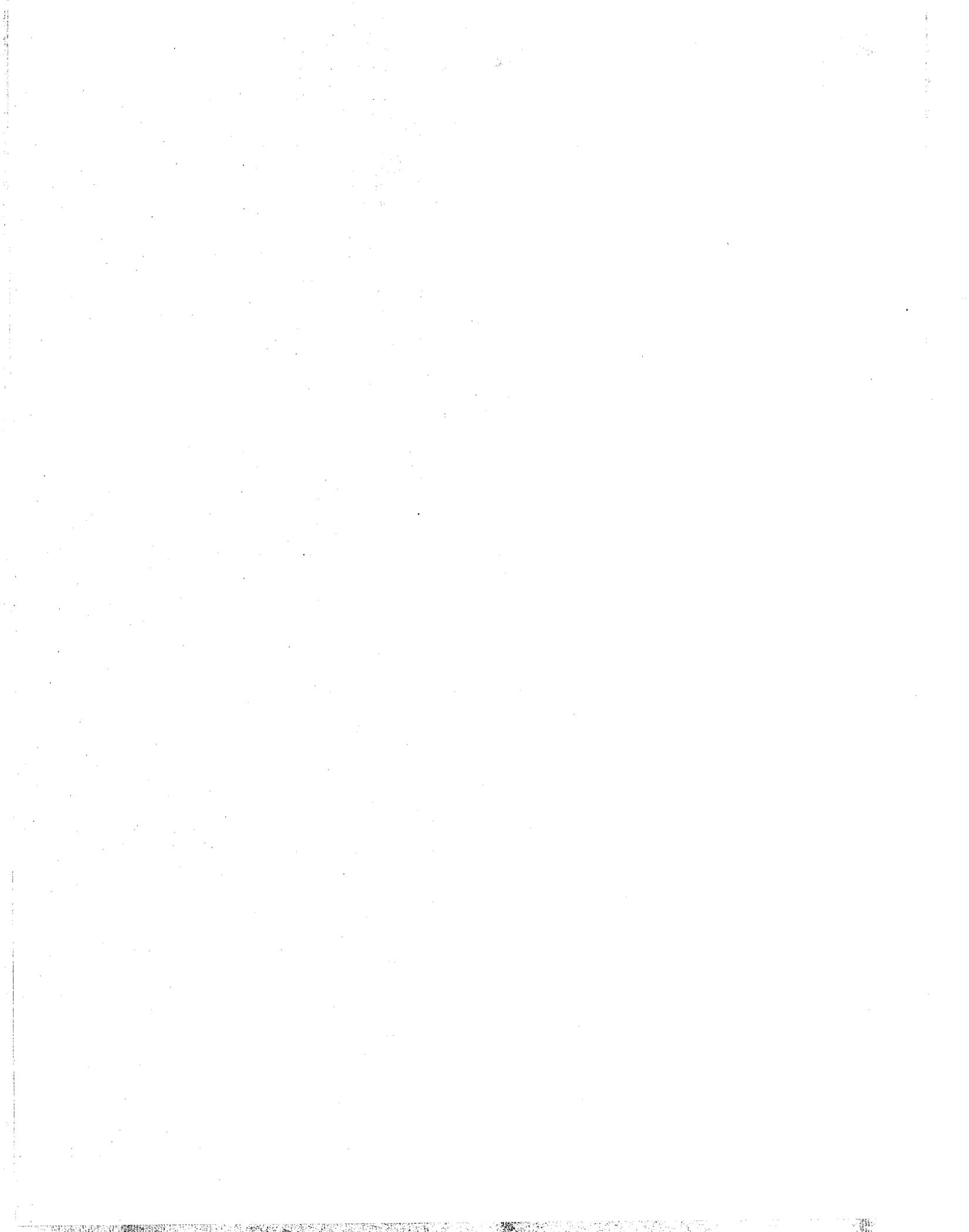
The remaining 4 percent of the Bartlesville Center's client funding came from organizations outside DOE. However, these organizations are also decreasing or eliminating the research work previously conducted by the Center. For example, the Bartlesville Center has completed its work on jet fuels for the U.S. Air Force's Office of Scientific Research. An official from that office stated that at this time there are no plans to fund further research at the Center. Further, the American Petroleum Institute's Refinery Director told us that the institute and the Center had worked very closely on several projects over the years. However, he foresaw no increase in the institute's use of the Center's research capabilities over the very small contract that the institute currently has with the Bartlesville Center.

Although DOE encourages the agreement participant to solicit financial support from groups outside Fossil Energy, work for others probably would have to be for new clients that the agreement participant is able to attract. DOE officials expect that the Center should have no problem attracting new clients because its unique research capabilities would be available to a larger segment of the private sector. As a Federal facility, the Center is precluded from soliciting work from profitmaking organizations. However, by changing its status, the agreement participant could solicit research work from those organizations.

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