

DOCUMENT RESUME

00167 - [A1051996]

[Management of a National Science Foundation Office of Energy Research and Development Policy Grant to the George Washington University: Questions, Answers, and Recommendations]. HRD-77-38; B-133183. January 25, 1977. Released January 27, 1977. 9 pp. + enclosure (28 pp.).

Report to Sen. Edward M. Kennedy, Chairman, Senate Committee on Labor and Public Welfare: National Science Foundation Special Subcommittee; by Elmer B. Staats, Comptroller General.

Issue Area: Energy (1600).

Contact: Human Resources Div.

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

Organization Concerned: National Science Foundation; George Washington Univ.

Congressional Relevance: House Committee on Science and Technology; Senate Committee on Labor and Public Welfare; National Science Foundation Special Subcommittee; Senate Committee on Labor and Public Welfare.

Authority: National Science Foundation Act of 1950 (42 U.S.C. 1861 et seq.).

The National Science Foundation's (NSF) Office of Energy R and D Policy awarded a 1974 grant to George Washington University for energy policy research. The initial grant to the unsolicited proposal and a 12-month renewal were awarded for a series of discussion papers on Federal gas and oil policies and consultation. Findings/Conclusions: Evaluation of the research proposal was not done by qualified personnel, or under established guidelines. Some of the reviewing personnel had a prior employment relationship with the principal investigator (Dr. William A. Johnson). Additional outside funding came from two interest groups of oil marketing companies. The broad grant objective of preparing the papers and maintaining contact with the NSF were met, but their quality or utility were not determined. Recommendations: NSF should issue a policy directive on how outside funding should be considered in a grant award decision to guard against potential conflicts of interest. It should establish formal policy for evaluating research, including peer reviews of proposals, and timely postevaluation; make its research available through the National Technical Information Service; formally evaluate discussion papers; determine the need for formal evaluation of other recent policy research; require a statement of Foundation support and a disclaimer on its publications; and disclose all funding sources of NSF supported research. Grantees should get formal approval for commercial publication of research and the Foundation should fix the disposition of moneys from the sale of publications.

(DJM)



RELEASED
1/27/77

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

B-133183

JAN 25 1977

The Honorable Edward M. Kennedy
Chairman, Special Subcommittee on
the National Science Foundation
Committee on Labor and Public Welfare
United States Senate

Dear Mr. Chairman:

In accordance with your August 24, 1976, request and later agreements with your office, we reviewed a number of management issues concerning the National Science Foundation's award and administration of a September 5, 1974, grant to the George Washington University, Washington, D.C., for energy policy research. Dr. William A. Johnson was principal investigator under the grant. As directed by your office, we obtained the views informally only of Foundation officials on our findings, and their comments are considered in the report. Our findings are summarized below and discussed in more detail in the enclosure.

The initial grant to the university and a 12-month renewal approved on June 30, 1975, were awarded by the Foundation's Office of Energy R&D Policy. At that time the Office was part of the Foundation Director's office. Its primary mission was to provide the Director, in his role as the President's Science Adviser, with information on energy-related matters. The grant resulted from an unsolicited proposal by the university, requesting funds to support the work of Dr. Johnson. Under the grant, he was to prepare a series of discussion papers on Federal gas and oil policies and to be available for consultation. The proposal was preceded by a preliminary discussion between the Office and Dr. Johnson, in which they agreed on the content of the proposal to be submitted.

The Office did not have written guidelines for evaluating research proposals. Review methods were determined by the Foundation's program manager evaluating the proposal. The Foundation traditionally obtains views of outside experts in the subject area of the proposal; however, the Foundation decides whether to fund the proposal. The reviewers of the initial proposal and the renewal were largely

Office and other Foundation employees. Except for Treasury Department employees, the reviewers selected did not include policy decisionmakers or representatives from other government agencies and private industry with knowledge of and a probable interest in energy policy research. In addition, some reviewers and the initial Foundation program manager had had a prior employment relationship with the principal investigator.

A September 1976 Foundation management study which included the Office's operating procedures stated that the traditional peer review procedures were regarded as inappropriate for the policy analysis carried out by the Office. This was because the Office usually had to respond quickly to a specific request from a policy decision office, such as the White House. The study also noted that external peer review, which usually takes 2 to 4 months, was considered inappropriate to meet deadlines that were often stated in days or weeks. Further, according to former Office officials, research proposal reviews were usually handled by Office staff who understood the need for the research and were often the users of it.

No evidence in the Foundation's grant records showed that the proposed research was in response to a specific request from outside the Foundation. Apparently the Office was the intended immediate user, although no formal Foundation records show how the research was used. Also, regarding the time frame, both the initial and renewal grants were made for 12-month periods.

The reviewers were given the proposals and a rating sheet, but were apparently not given guidelines to help them consider the merits of the proposals. Officials of several Foundation directorates 1/ said they usually provide general guidelines that ask the reviewer to consider such factors as merit of the proposal, reasonableness of the budget, and qualifications of the project personnel. The reviewers rated the initial proposal and the renewal high. However, the reviewers raised some questions and the disposition of the questions is not documented in the Foundation's grant records.

1/The Foundation has six major organizational units (called directorates) for carrying out its research activities.

Management instructions issued and organization changes made since the initial grant and renewal were awarded to the George Washington University should improve the proposal review process. These changes include (1) transferring the Office's functions to the Directorate for Scientific, Technological and International Affairs, which will provide additional levels of grant review and a more formal review process, (2) creating an action review board 1/ within each directorate to review decisions on grant awards, including their documentation, and (3) issuing Foundation-wide guidelines on peer reviewer selection, including instructions to the reviewers.

Both the initial proposal and the renewal said there would be outside support for the project, but neither identified the source. Apparently none of the reviewers of the initial proposal asked about outside funding; however, a reviewer of the renewal proposal asked that the source be considered in making certain that the study was independent. The program manager could not remember how he handled the comment; however, he believed that the fact of outside support was not a principal concern, because Foundation grantees commonly have other support. Dr. Johnson said the Foundation did not inquire about the source of his outside funding at the time of the initial proposal or the renewal.

The university's records show that for September 1, 1974, to August 31, 1975, the university received \$110,000 to support Dr. Johnson's work. The funds included the Foundation's initial grant for \$60,000 and a grant by a group of oil marketing companies known as the Independent Oil Marketers' Conference for \$50,000. For September 1, 1975, to August 31, 1976, the university received additional funding of \$145,000. These funds consisted of the Foundation's renewal for \$70,000, 2/ a second grant by the Independent

1/The Directorate for Scientific, Technological and International Affairs' action review board was formalized on January 23, 1976. Its functions were to include a review of all proposed awards after recommended approval by the division director. Board membership includes top management of the directorate and legal and business representatives from other Foundation offices.

2/Includes \$20,000 transferred from the Treasury Department to the Foundation to help support the Foundation's energy policy research project.

Oil Marketers' Conference for \$35,000, and a grant by another group of marketers known as the Southern Caucus for \$40,000. As of January 7, 1977, the Foundation was considering a June 1976 request from the university for an additional \$35,000 to support the project for 12 more months.

The grants from the marketing groups were given to the university unconditionally to support Dr. Johnson's work. The university decided to use the grants to fulfill the cost-sharing requirements of the Foundation's grants for energy policy research. The Foundation's grants to the university used funds obtained under its fiscal year 1975 appropriation, which required cost-sharing for awards resulting from unsolicited research proposals.

On September 10, 1976, the Foundation issued a directive requiring applicants for funding to furnish information on current support and pending proposals with other funding sources. However, the directive does not prescribe guidelines concerning the effect the source of the outside funding should have when the proposal is considered. If the researcher is overcommitted or has a similar proposal under consideration, prudent management should dictate the actions to be taken. The impact of the funding source can be an issue more difficult to resolve.

We recommend that the Foundation's Director issue a policy directive providing guidance on how the source of outside funding should be considered in a grant award decision. Outside funding from organizations that could be affected by the research might not influence the researcher in making his study. However, it could lead to conflict-of-interest questions that might reduce the usefulness of the research. We recognize that obtaining experts to do sensitive policy research who have not been supported or otherwise affiliated with a concerned industry or organization might be difficult. Thus, the source of outside funding to support a specific research proposal could be largely an academic question. Nevertheless, the Foundation should be cautious in funding researchers to do sensitive policy research and try to avoid the appearance of a conflict of interest. Improved evaluation of the research proposal and evaluation of the research publications resulting directly from Foundation-supported policy research would also better insure that the research is useful. (See the recommendations below concerning evaluation.)

The broad grant objectives of preparing a series of discussion papers and providing consultation and otherwise maintaining contact with the Foundation were met. Because of inadequate Foundation grant records, we could not determine whether the specific papers prepared by the researcher under the grant were those agreed to by the Foundation. The quality of the papers had not been formally determined by the Foundation, and the usefulness of the papers to the Office staff, the apparent intended users, is not documented in the Foundation's records.

Recently established management controls will provide for improved grant administration, including better documentation of project activities and records of papers submitted under a grant. However, policies and procedures for formally evaluating policy research supported by the Directorate for Scientific, Technological and International Affairs do not exist. We believe that decisionmakers, the ultimate users of policy research, should know the quality of information they are receiving and that certainly the Foundation should make sure of the quality of information it passes on to them. Documented evaluations of publications resulting directly from Foundation-supported policy research are necessary to implement these quality controls.

We recommend that the Director of the Foundation:

- Establish formal policies and procedures for the evaluation of policy research, including peer reviews of the research proposal that provide a balance of points of view, and timely postevaluation by peers of publications resulting directly from Foundation-supported research.
- Require that evaluations of Foundation-supported policy research be made available for distribution through the National Technical Information Service.
- Provide for a formal evaluation of the discussion papers prepared under the Foundation's energy policy grants to the university.
- Determine the need for formal evaluation of other recently completed policy research, considering the sensitivity of the subject matter and its distribution and use.

The grants to the university were subject to Foundation policy requiring that (1) an acknowledgment of its support be made with the publication of material based on or developed under the project and (2) any publications, such as monographs and books, produced under the grant state that the findings and views are those of the author and do not necessarily reflect the Foundation's views. The requirements were not consistently applied in the publications issued under the Foundation's grants to the university in that some papers omitted one or both of the statements. Also, where the acknowledgment of Foundation support was used, it stated the work was supported in part by the Foundation, or the work was supported in full by the Foundation.

The Foundation's policy requirement, as stated in its grant administration manual, provided only suggested statements. To provide uniformity the Foundation has recently established a standard format for the statements. Procedures to make certain that the statements appear in publications have not been established. We recommend that the Foundation's Director require that program managers examine publications directly resulting from Foundation-supported policy research before their public release to check for compliance with the acknowledgment of support and disclaimer policy.

Questions have been raised over the propriety of not disclosing all sources of funding for publications resulting from Foundation-supported policy research. As of January 7, 1977, the Foundation had not taken a position on this issue. We believe cost-sharing obtained from sources that could be affected by the research results should be avoided. Disclosure of all sources supporting the research would serve notice to users who might believe the source of funding affects the outcome of the research. However, it should be recognized that a researcher not receiving direct outside support from interested sources to help do Foundation-supported research might receive payments from interested parties for speeches, consulting, or other services while doing a Foundation-supported project. Further, before being funded by the Foundation, the researcher might have received funding from interested sources for various services, and upon completing a Foundation-supported project, the researcher might again be employed by interested sources.

As previously stated, we believe evaluation is the principal way to determine the quality of Foundation-supported research. Also, policy research publications resulting directly from Foundation support could cite a bibliography of the researcher's recent related publications that the

interested user could obtain to learn about the researcher's prior positions.

We recommend that the Director of the Foundation:

--Require that the Foundation's acknowledgement of support policy be revised to require disclosure of all funding sources of Foundation-supported research.

--Determine the feasibility of requiring that policy research publications developed with Foundation support include citations to related research of the principal investigator.

The university realized about \$15,000 from the sale of publications developed partly under the Foundation's energy policy grants. Publication costs were about \$11,000, leaving a \$4,000 net income. All costs and receipts were handled through the Independent Oil Marketers' Conference grant, except costs of about \$525 charged to the Southern Caucus grant. These grants were used by the university as the required cost-sharing for the Foundation's grants. Nearly all the income came from the sale of a monograph about competition in the oil industry, which was distributed by Dr. Johnson. The related costs were largely for producing the monograph, which was contracted for by Dr. Johnson.

The Foundation, in reviewing the university's research proposals, apparently determined there was no income potential because the discussion papers were to be used by the Foundation. Therefore, no specific provision was made in the initial grant or the renewal for disposition of income. Foundation income policy provides that normally income be used to offset costs otherwise allowable and chargeable to the grant. If estimated total income is more than \$10,000, the income not used as provided for in the grant would be returned. If estimated total income is less than \$10,000, the grant may provide the unused income be retained by the grantee for science or science education purposes. The Foundation also requires prior approval of commercial production and distribution of books, films, or similar materials developed with its support. The publication and distribution arrangements for publications resulting in part from the Foundation's grants to the university were not formally approved by the Foundation and might not have been approved orally.

University records show that the Foundation has contributed over 50 percent of the grant funds for the university's energy research project and has been charged with about 50 percent of the total project costs. Since the Foundation pays a large part of the research costs and it might not have had the opportunity to consider the publication and distribution arrangements, it ought to be able to determine the disposition of at least some of the net income resulting from the sale of publications developed with its support.

We recommend that the Director of the Foundation:

- Require grant recipients, as a condition of the award, to (1) obtain the Foundation's written approval of commercial publication and distribution arrangements for publications resulting directly from the Foundation's support and (2) allow the Foundation to determine the disposition of all income resulting from the sale of such publications.
- Consult with the university to provide for disposition by the Foundation of an equitable share of the net income from the sale of publications developed under the Foundation's energy policy grants to the university.
- Specifically provide for the disposition of income in the energy policy grant to the university, if the grant is renewed.

We found that payments charged to the Foundation for the principal investigator's salary were in accordance with the budgets approved by the Foundation for its initial grant and renewal and the percentage of the researcher's time to be devoted to the Foundation's grants.

We did not find any evidence in the Foundation's or the university's grant records that Foundation employees served as consultants. Foundation policy prohibits its employees from serving as consultants under its grants but allows other Federal employees to do so. Other Federal employees were used as consultants and their services were approved by their superiors.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the

B-133183

report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report. We will be in touch with your office in the near future to arrange for release of the report so that the requirements of section 236 can be set in motion.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Kenneth B. Stated". The signature is written in a cursive style with a large initial 'K'.

Comptroller General
of the United States

Enclosure

MANAGEMENT OF A NATIONAL SCIENCE FOUNDATIONOFFICE OF ENERGY R&D POLICYGRANT TO THE GEORGE WASHINGTON UNIVERSITY:QUESTIONS, ANSWERS, AND RECOMMENDATIONSINTRODUCTION

On August 24, 1976, the Chairman, Special Subcommittee on the National Science Foundation, Senate Committee on Labor and Public Welfare, requested that we review the procedures used by the Foundation in granting \$130,000 to the George Washington University, Washington, D.C., for the preparation of a series of papers on Federal oil and gas policies. These papers were to provide information and analyses to assist the President's Science Adviser (the Foundation's Director) in recommending appropriate Federal actions in the oil and gas segment of energy policy. Dr. William A. Johnson was the principal investigator under the grant.

The Chairman's primary concerns were that:

- The grant application said there would be other sources of support, but the Foundation made no effort to determine the sources of outside funding.
- Subcommittee inquiries showed the outside funding came from elements of the oil industry holding well-defined positions on divestiture and other subjects of the researcher's inquiries.
- Among the Federal employees selected by the Foundation to review the research proposal, two had worked under the researcher and another had been his superior.
- The opinion of only one reviewer who was not an employee of the Treasury Department or the Foundation was sought before the grant award.
- The oil industry used the researcher's work in its advertisements urging opposition to divestiture, but the work did not disclose all sources of funding.

Pursuant to the Chairman's letter and later agreements with his office, we:

- Examined the policies and procedures used by the Foundation's Office of Energy R&D Policy in awarding the initial grant in 1974 and a 1975 renewal as well as policies and procedures currently used in evaluating research proposals.
- Determined if the peer reviewers selected to evaluate the grant proposals included representatives of organizations likely to be interested in the research and examined the guidance given the reviewers and the Foundation's disposition of their comments.
- Determined the extent that the Foundation considered outside funding in reviewing the grant proposals and identified the applicable Foundation policies and procedures.
- Determined whether the research papers prepared under the grants met the grant objectives.
- Ascertained whether the Foundation evaluated the research papers.
- Determined the Foundation's planned use of the research papers and the general use and distribution of them.
- Checked all research papers prepared under the grants for compliance with Foundation policy concerning acknowledgment of support and considered the policy's adequacy for informing research users of all sources of funding.
- Determined the disposition of income from the sale of research papers prepared under the grants.
- Determined whether the salary paid the researcher was in accordance with the approved grant budgets and whether the researcher's use of Federal employees as consultants was in accordance with Foundation requirements.

We examined the Foundation's project records for the grants and the grantee's records at the George Washington University. We also interviewed present and past Foundation officials responsible for administering the grants, the principal investigator, grant officials at the university, and Treasury Department officials about matters related to its cost sharing on the renewal grant.

The Foundation funded the grants under the authority of the National Science Foundation Act of 1950 (42 U.S.C. 1361 et seq.), as amended, which authorizes the Foundation to initiate and support (1) basic scientific research, (2) applied research, and (3) programs to increase research potential through contracts or other forms of assistance, such as grants. The grants were awarded and administered by the Foundation's Office of Energy R&D Policy.

The Office was created in the summer of 1973, when Reorganization Plan No. 1 abolished the Office of Science and Technology and the Foundation's Director was assigned the additional responsibilities of serving as the President's Science Adviser. The major purpose of the Office of Energy R&D Policy was to provide the Director, in his role as Science Adviser, an independent source of advice and analysis of energy research and development and other energy-related programs for use by the Executive Office of the President. The Office was also responsible for gathering a wide range of information and advice in energy-related matters and enhancing the Foundation Director's capability to respond effectively to other requests for policy analyses of energy issues.

The Office was part of the Foundation Director's office until July 1975, when it began reporting to the Foundation's newly established Directorate 1/ for Scientific, Technological and International Affairs. In February 1976 its functions were placed in the Division of Policy Research and Analysis within the Directorate and the Office was abolished.

Funding for the Office and its successor totaled over \$9 million from its inception in 1973 through August 15, 1976. During this period about 123 grants, renewals, and contracts were funded in support of research activities. One of these projects was the "Energy Policy Problems" grants, which grew out of an unsolicited proposal sent to the Foundation by the George Washington University. Under the grants the principal investigator, Dr. William A. Johnson, was primarily to prepare a series of discussion papers about various energy issues, focusing primarily on Federal oil and gas policies. The initial Foundation grant of \$60,000, made on September 5, 1974, was to cover from September 1, 1974, through August 31, 1975. On June 30, 1975, the Foundation provided an additional \$70,000 to support the project for another

1/The Foundation has six major organizational units (called directorates) for carrying out its research activities.

12-month period beginning September 1, 1975. This amount included \$20,000 transferred from the Treasury Department to help support the project. As of January 7, 1977, the Foundation was considering a June 1976 request from the university for an additional \$35,000 to support the project for 12 more months.

REVIEW AND EVALUATION OF THE
UNIVERSITY'S RESEARCH PROPOSAL
"ENERGY POLICY PROBLEMS"

There are no Foundation-wide written or formal procedures governing the process for evaluating research proposals. Each Foundation directorate has established its own procedures to review and evaluate proposals. These procedures vary within each directorate, but they are generally structured around and conform with requirements of the various Foundation policy and instructional directives, such as (1) Office of the Director staff memorandums, (2) Office of General Counsel bulletins, (3) Foundation circulars, and (4) Foundation important notices, which concern various aspects of proposal evaluation and award of grants. The review process common to each directorate for unsolicited research proposals generally is as follows.

Unsolicited proposals are funding requests sent to the Foundation largely on the proposers' initiative. Such proposals are usually submitted in response to general Foundation literature or as a result of personal contacts with the Foundation's program officials. Proposals are prepared by the principal investigator, approved by his sponsoring institution, and sent to the Foundation. Program managers responsible for particular program areas, such as energy policy, productivity, or computer science, review and evaluate the proposals falling within their areas.

Generally, proposal review and evaluation involves the following major steps: (1) initial determination whether the proposal is potentially supportable, (2) formal review by the program manager and others, usually outside peer reviewers, (3) evaluation of the review comments and a determination by the program manager to recommend or decline funding of the proposal. (The Foundation decides whether a proposal will be funded.) The program manager's evaluation and recommendation to fund the proposal are subject to review by the section head, division director, and the assistant director in charge of the directorate. Grants are made to the sponsoring institution to support a specific project proposed by an investigator.

All awards must be approved by the Foundation's Director or his designee and the Grants and Contracts Officer. Awards involving expenditures of at least \$500,000 in a year or at least \$2 million in total must also be approved by the National Science Board. Projects are generally funded annually. Renewal proposals requesting additional support usually undergo a similar review process.

At the time the university's research grants were awarded, the Office of Energy R&D Policy was not part of a research directorate and did not have written procedures or uniform practices governing the review and evaluation of research proposals. The review methods used were selected by the program manager responsible for the subject area of the proposal. For some proposals, the Foundation's traditional peer review system of using outside reviewers was used. For other proposals, where the information was needed to quickly respond to other agency requests for policy information, the traditional system was considered too slow and the proposals were reviewed internally by the Office staff.

Origin and contents of
initial university proposal

According to Dr. Johnson and the individual who was the Office's Deputy Director in 1974, they had a preliminary discussion in May 1974, after which Dr. Johnson furnished the Office with a description of the research grant he was seeking.

By letter dated June 19, 1974, the Office advised Dr. Johnson that, as previously discussed, his grant proposal should provide for consultation and engaging in discussions with Foundation staff, including maintaining contact with the staff about energy-related issues. As stated in the letter, his primary task would be to prepare a series of papers on a wide range of topics, drawing upon his experiences in the Federal Energy Office and the Treasury Department and from his independent research. The letter suggested certain topics for submission to the Office, including:

- Problems of State and local participation in energy resource development.
- Policies essential to achieving reasonable U.S. self-sufficiency in energy by 1980; some problems confronting Project Independence.

- Use of incentives to the private sector for developing energy resources.
- Ability of the Federal bureaucracy to conceive a national energy policy.
- Problems in U.S.-Canadian energy relations.

The letter stated that other topics could be pursued if the Foundation agreed to them.

The proposal submitted to the Office on July 22, 1974, consisted of 21 pages; 2 pages generally described the work to be performed under the grant and identified five discussion papers to be prepared; 11 pages contained outlines of the five discussion papers; 1 page contained a grant budget; and 7 pages gave the background of the principal investigator. The scope of the proposal essentially restated or refined the contents of the June 19, 1974, preliminary letter from the Office. The proposal provided for a series of discussion papers on a wide range of energy issues, focusing primarily on Federal gas and oil policies. The proposal specifically identified the five topics stated in the June 19, 1974, preliminary letter as topics of papers to be prepared. The proposal also called for mutual agreement about papers on other topics to be prepared, and it identified several possible topics not included in the preliminary letter. The proposal also provided for consultation and ongoing contact with the Office about energy-related issues, as provided for in the letter.

Review of the initial proposal

The Foundation uses various procedures in deciding whether to fund the proposed research project. A widely used procedure involves soliciting written comments by mail from outsiders in academic institutions, government, and industry who are experts in the area covered by the proposal. These experts are the "peers" of the investigator whose proposal is being considered, and the solicitation of their views as input in evaluating the proposal is called the mail peer review system.

When the initial proposal was reviewed, there were no Foundation-wide criteria or procedures governing the use of mail peer review, the selection of peer reviewers, or the number to be used. Although each directorate used mail peer review to evaluate proposals, decisions as to the use of the system were made by responsible program managers in accordance with the generally accepted practice in each directorate.

The Foundation's project folder for the grant showed that the Office program manager selected three reviewers to evaluate the initial proposal in July 1974. Two of the reviewers were Foundation employees--one was from another Foundation directorate and had worked for Dr. Johnson at the Federal Energy Office before joining the Foundation and one was an Office of Energy R&D Policy staff member--and the other reviewer was from the academic community. In addition, the program manager responsible for reviewing the proposal had worked under Dr. Johnson at the Treasury Department. When the proposal was submitted and was being processed, he was on loan to the Foundation from Treasury.

One of the Foundation employees who acted as reviewers had a masters in electrical engineering and a Ph.D. in planning theory and systems analysis; the other had a masters in geology and a Ph.D. in mineral economics. The program manager had a masters in mineral economics.

Since the work was going to be done over a 12-month period, reviewer selection could have been expanded to include a number of private and public organizations that might have been interested in reviewing the proposal. Private organizations that might have been interested include the American Gas Association, the American Petroleum Institute, oil marketing associations, and individual petroleum companies. On the public side, State and local agencies and a number of Federal agencies concerned with energy matters, such as the Department of the Interior, Federal Power Commission, and Federal Energy Administration, might have been interested.

Content and review of grant renewal proposal

The renewal proposal that the university submitted to the Foundation on May 5, 1975, consisted of nine pages: five pages generally described the work to be done, including summaries of five additional discussion papers to be prepared; one page was a grant budget; and three pages contained a progress report of work under the initial grant.

The progress report said that the following five discussion papers had been prepared and submitted to the Foundation:

--"Trends in World Oil Prices and Production" (Oct. 8, 1974).

- "The Case Against Further Regulation of the Major Oil Companies" (Dec. 27, 1974).
- "Federal Energy Policy: A Conflict of Interests" (Jan. 20, 1975).
- "The Naval Petroleum Reserves" (Jan. 27, 1975).
- "Some Comments on the President's Energy Program and Alternatives to It" (Feb. 20, 1975).

Several other papers were identified as under preparation:

- "U.S. Price and Allocation Controls and Their Impact on U.S. Energy Shortages."
- "The Two-Tier Price System and the Entitlements Program."
- "Regulation of Natural Gas at the Wellhead."
- "U.S. Policy Toward Coal."
- "State and Local Participation in Energy Resource Development."
- "U.S.-Canadian Relations on Energy Policy Matters."

The proposal stated that a series of discussion papers would be prepared that would be useful to Federal energy policymakers (to be submitted to the Office and the Treasury Department). The papers were to survey policy-oriented research on selected energy topics to assess the merits of the research and to determine what additional research was needed. The papers were also to examine and assess ongoing Foundation-supported studies of various energy policy issues. Topics of these papers included: The Petro-dollar Problem; The Future of OPEC [Organization of the Petroleum Exporting Countries]; The Arab Oil Embargo: Past and Future; Multi-national Companies; and Oil Import Quotas. Also, the proposal said papers on other topics of interest to the Foundation and the Treasury Department could be prepared and consultant service could be expanded to include Treasury.

The Foundation's project folder showed that in May 1975 the Office program manager selected eight reviewers--three from Treasury and five from the Foundation--to evaluate the renewal proposal. Of the six reviewers submitting evaluative comments, five were Foundation employees--two were from other

Foundation directorates and had worked under Dr. Johnson at other Federal agencies before joining the Foundation and three were Office staff members--and the other reviewer (a Treasury employee) was a former associate of Dr. Johnson's at Treasury. In addition:

- One Office staff member acting as a reviewer for the renewal proposal had been the program manager for the initial proposal.
- The Office program manager for the renewal proposal had been a reviewer of the initial proposal.
- In approving the award within the Office, the program manager, program director, and deputy director who signed off on the award were the same person.

The five Foundation employees who acted as reviewers had the following educational backgrounds: (1) a Ph.D. in nuclear science, (2) a Ph.D. in economics, (3) a masters in mineral economics, (4) a Ph.D. in nuclear physics, and (5) a masters in geology and a Ph.D. in mineral economics. The program manager had a masters in electrical engineering and a Ph.D. in planning theory and systems analysis.

Rationale for the proposal review procedures

A September 1976 Foundation management study that included the Office's operating procedures said the traditional peer review procedures were regarded as inappropriate for much of the policy analysis carried out by the Office. This was because the analysis was mostly intended to quickly respond to specific requests from policy decision offices, such as the White House offices, the Office of Management and Budget, and other Federal agencies. The study also said that external peer review--a process which usually takes 2 to 4 months--was considered inappropriate to meet deadlines often stated in days or weeks. Further, according to former Office officials, research proposal reviews were largely handled by Office staff members who understood the need for the research and were often the users of the results.

The university's proposal was unsolicited; it was submitted after Dr. Johnson was told by an Office official that the Office funded energy policy research. The project folder contains no documentation indicating that the proposed research--meetings, consultations, and research papers--was in response to a specific request from any source outside

the Foundation. Further, both the initial and renewal grants were made for 12-month periods. The review and evaluation time required to process Dr. Johnson's initial proposal totaled 1 month and 13 days from the date of receipt to the date of award. The review and evaluation time required to process the renewal proposal totaled 1 month and 25 days.

Instructions on peer reviewer selection

As previously stated, at the time of the initial grant and renewal to the university, there were no Foundation-wide instructions on selecting peer reviewers. On February 13, 1976, the Foundation issued "Guidelines for Program Officers on Selection of Reviewers"--Foundation-wide instructions that provide uniform detailed criteria to guide program managers in selecting peer reviewers. The criteria are aimed at providing a representative selection of peer reviewers who

- can evaluate the principal investigator's ability;
- have a broad view of the subject matter;
- can comment on the usefulness of the proposed work;
and
- represent the institutional, educational, regional, or other elements of the community that might be affected by the project.

Included in the guidelines are instructions which stress the need to provide balance among differing points of view, call attention to the possibility of scientific and personal biases, and caution against involving reviewers in potential conflicts of interest.

Guidelines given to reviewers for proposal review

Officials of several of the Foundation's directorates said that, when requesting outsiders to review and evaluate research proposals, the Foundation usually sends a copy of the research proposal, a comment or rating sheet, and general guidelines for the reviewer to use in evaluating the proposal. Such guidelines generally request the reviewer to consider such factors as the merit of the proposal, the feasibility and effectiveness of the proposed work, the reasonableness of the project budget, and the qualifications of project personnel. The project folder for the initial proposal and the renewal showed reviewers were given the proposal and a rating

sheet. The folder contained no documents indicating that review guidelines were furnished.

On February 13, 1976, the Foundation issued "Guidelines on Instructions to Reviewers"--Foundation-wide guidelines that set forth standards and requirements applicable to requests for peer reviews, including a requirement that peer reviewers be given criteria for judging the proposal.

Disposition of reviewers' comments

Reviewers' comments are an important factor considered by the program manager in deciding whether to support a research proposal. The program manager assesses reviewers' evaluative comments and recommendations and their impact on the proposal. Generally, any aspects that are counter to Foundation policy or that might hinder the successful completion of the project are identified and resolved before a recommendation regarding funding is made.

The proposal rating sheets for the initial and renewal proposals submitted by the university show that, although the proposals were rated excellent and very good, the narrative comments of several reviewers included questions about the work to be performed. For example, these reviewers:

- Felt that the study's scope might be too broad to be covered in the proposed 10 to 12 papers (initial proposal).
- Believed that several proposed papers might be over-ambitious in light of the time covered by the grant and cited two papers as examples (initial proposal).
- Suggested that the study be made more comprehensive and identified several additional topics for possible inclusion (renewal).
- Questioned whether the Foundation had verified that parallel work was not already underway in other institutions, thus avoiding unnecessary duplication of effort (renewal).

The proposal review worksheets and other documents in the project folder include no evidence indicating the disposition of these questions by the program managers.

A comment by one reviewer relates to one of the specific issues we are dealing with in this inquiry--outside funding

sources. Both the initial proposal and renewal stated that there would be outside support for the project, but neither identified the source. The initial proposal said that the Foundation's grant would cover about three-fourths of the principal investigator's time and that he would receive support from other sources to cover the rest of his time (a similar statement appeared in the renewal proposal).

Apparently none of the reviewers asked about outside funding when considering the initial proposal. In commenting on the renewal proposal, one reviewer--an Office official--stated:

"* * * My only question concerns the outside support from another source (this is mentioned on page 4.) What is it, how is it provided and for what, and does it assuredly provide for independence in study? This question should be clarified before an award is made."

Documents in the project folder do not show what the program manager did to resolve the reviewer's questions concerning outside support. The program manager for the renewal proposal said he did not remember how he disposed of the reviewer's comment about outside funding. He said he probably called the principal investigator about his other source of support. However, he said other support was not a principal concern of the Office because Foundation grantees commonly obtained other support. According to Dr. Johnson, at the time of the grants the Foundation did not inquire about the specific source of his outside funding.

The Foundation has since acted to provide for better documentation of the management decisions regarding individual projects. Action review boards 1/ have been established in each directorate (the Office's functions are now part of a directorate) to review awards. One review factor to be considered is whether full and adequate consideration is given to reviewers' comments. Also, in August 1976 Foundation-wide instructions were issued prescribing the minimum levels of

1/The Directorate for Scientific, Technological and International Affairs' action review board was formalized on January 23, 1976. Its functions were to include a review of all proposed awards after recommended approval by the division director. Board membership includes top management of the directorate and legal and business representatives from other Foundation offices.

documentation required for award recommendations. The instructions require that the proposal review worksheet summarize the pertinent factors leading to the program manager's recommendation. The instructions outline several considerations to be included in the summary; for example, the summary is to indicate whether the principal investigator satisfactorily responded to major review criticisms.

Disclosure of other funding sources

Several of the research directorates have published brochures or guidelines that inform researchers of the requirements and general format for research proposals. One requirement is that the proposal list all current research, in addition to the proposed project, to which the principal investigator and other senior research personnel have committed part of their time and indicate whether the salary for the person involved is included in the budgets of the various projects. Such information should include the titles and dates of current grants or contracts, the source of funds, annual budget levels, and the time devoted to each project by each of the senior personnel. Such information is to be provided for all other proposed research which is being considered by, or which will be submitted in the near future to, other possible sponsors, including other Foundation programs. The Office had no such requirements when the awards were made to the university.

The Foundation's grants to the university were not consortium grants, which involve a master grant to one institution to support a project being carried out through a cooperative arrangement between the grantee and one or more academic institutions or profit or nonprofit organizations. Rather they were grants that generally provided full funding to the university for accomplishing the grant objectives outlined in the two research proposals, with the understanding that there would be some cost sharing by the university as required for unsolicited research proposals by the Foundation's fiscal year 1975 appropriation act, from which the grant funds originated.

Grant records at the university show that the Foundation was one of three sources giving grants to the university to support Dr. Johnson's research work. The records showed that for September 1, 1974, to August 31, 1975, the university received \$110,000 to support Dr. Johnson's work. The funding consisted of the Foundation's grant for \$60,000 and a grant by a group of oil marketing companies known as the Independent Oil Marketers' Conference for \$50,000. For

September 1, 1975, to August 31, 1976, the university received \$145,000 to support Dr. Johnson's work. The funding consisted of the second Foundation grant for \$70,000 (which included \$20,000 from the Treasury Department), a second grant by the Independent Oil Marketers' Conference for \$35,000, and a grant by another group of marketers known as the Southern Caucus for \$40,000. The grants from the marketing groups were given unconditionally to support Dr. Johnson's work. The university decided to use the grants to fulfill the cost-sharing requirements of the Foundation's grants for energy policy research.

On September 10, 1976, the Foundation's Acting Director issued a directive requiring that all proposal-generation mechanisms used within the Foundation have applicants furnish information on current support and pending applications with other funding sources. The directorates are to require that detailed information on other funding sources and pending research applications be included as part of each research proposal.

The directive acknowledges that awareness of other support is an important factor in making awards, avoiding duplicate funding of projects, and ascertaining that the proposers have not overcommitted themselves to other projects and duties. However, it does not prescribe guidelines or criteria about what effect the source of the outside funding should have in the consideration of a grant proposal.

Conclusions

The review process used for both proposals from the university did not use a broad representative selection of peer reviewers. The reviewers selected did not include policy decisionmakers or representatives from several government agencies and from private industry with knowledge of and a probable interest in energy policy. Office staff members were extensively used as reviewers, and some reviewers and the initial program manager had had a prior employment relationship with the principal investigator. In addition, the reviewers were not given criteria to guide their review.

The research proposals had a broad charter, the research was to be done over a long period of time, and no evidence indicated that the research was in response to an urgent request from an outside source. These facts do not appear to fit the Office justification for not using the external peer review system.

The reviews of the initial proposal and the renewal were favorable; however, the grant records were not documented to show the disposition of questions raised.

Management instructions issued and organization changes made since the grants were awarded should help solve some problems we identified in the peer review process. These changes include (1) issuing Foundation-wide guidelines on peer reviewer selection, including instructions to the reviewers, (2) transferring the Office's functions to a research directorate, which will provide additional management levels of grant review and a more formal grant review process, and (3) creating an action review board within each directorate to review decisions on grant awards, including the documentation supporting these decisions.

The Foundation's directive concerning awareness of other sources of support for principal investigators does not address the question of what impact such support will have on the Foundation's grant award decision. If the other sources of funding indicate that the researcher is overcommitted or has a similar proposal under consideration elsewhere, prudent management would seemingly dictate the actions to be taken. However, the source of the outside funding can also be an issue to be considered in the grant award decision. This issue is more difficult to resolve and the Foundation has no written policy to help resolve it.

Outside funding from organizations that could be affected by the research might not influence the researcher in making his study. However, it could lead to conflict-of-interest questions that might reduce the usefulness of the research. We recognize that obtaining experts to do sensitive policy research who have not been supported or otherwise affiliated with a concerned industry or organization might be difficult. Thus the source of outside funding to support a specific research proposal could be largely an academic question. Nevertheless, the Foundation should be cautious in funding researchers to do sensitive policy research and try to avoid the appearance of a conflict of interest. Using a broad selection of peer reviewers, including representatives from concerned public and private organizations to obtain a balance of points of view should be common practice in evaluating research proposals. Such a broad selection of peer reviewers can also help to respond to conflict-of-interest questions that might arise when supporting sensitive policy research. The reviewers could also participate in a peer evaluation of the publications resulting directly from the Foundation-supported policy research. (See p. 18.)

Recommendation

We recommend that the Director of the Foundation issue a policy directive providing guidance on how the source of outside funding should be considered in a grant award decision.

ACCOMPLISHING GRANT OBJECTIVES

The objectives of the university's research grant were broad. In addition to preparing a series of discussion papers on a wide range of energy issues focusing primarily on Federal gas and oil policies, the principal investigator was to consult about energy-related issues.

The Foundation did not maintain records to show the receipt of papers prepared under the grants. It prepared a list of papers received under the grants for Chairman Kennedy and later prepared a list for us. The lists did not completely agree.

Dr. Johnson and one of his assistants said that the following papers were prepared and issued under the Foundation's initial grant and renewal to the university.

| <u>Title</u> | <u>Issue date</u> |
|--|-------------------|
| "Trends in World Oil Prices and Production" | Oct. 1974 |
| "The Impact of Price Controls on the Oil Industry" | Oct. 1974 |
| "The Case Against Further Regulation of the Major Oil Companies" | Dec. 1974 |
| "The Naval Petroleum Reserves" | Jan. 1975 |
| "Federal Energy Policy: A Conflict of Interests" | Jan. 1975 |
| "Some Comments on the President's Energy Program and Alternatives to It" | Feb. 1975 |
| "Pending Energy Legislation" | July 1975 |
| "How Federal Regulations are Putting Independent Oilmen Out of Business" | Sept. 1975 |
| "Why U.S. Energy Policy Has Failed" | Jan. 1976 |
| "Coal Policy or the Lack Thereof" | Mar. 1976 |
| "Competition in the Oil Industry" | Apr. 1976 |
| "The International Implications of the Vertical Divestiture of U.S. Oil Companies" | May 1976 |
| "The Petrodollar Problem" | July 1976 |

Dr. Johnson said Office officials informally approved the selection of papers that he prepared and the changes from the 10 papers identified in the grants. In October 1976

Dr. Johnson advised us of the following disposition of the 10 papers.

| <u>Subject</u> | <u>Disposition</u> |
|---|---|
| Problem of State and local participation in energy resource development Project Independence | Not written because it became less of an issue. Not written, but parts appear in other papers. |
| Private sector incentives in energy development | Issued as impact of price controls (Oct. 1974), testimony before House Ways and Means Committee (Jan. 1975). |
| National energy policy | Issued as why U.S. energy policy failed (Jan. 1976). |
| U.S.-Canadian energy relations | Not written, but testimony given before Senate Subcommittee on Budgeting and Management (Nov. 1974). |
| The petrodollar problem Future of OPEC | Issued (July 1976). Included in paper on international implications of vertical divestiture of U.S. oil companies (issued May 1976). |
| Arab oil embargo | In draft (as of Oct. 20, 1976). |
| Multinational companies | In draft (as of Oct. 20, 1976). |
| Oil import quotas | Not written, became a non-issue, and other studies existed. |

The Foundation's grant folders contain no documentation to show its approval of the changes. The program manager for the initial grant could not be reached for comment on the changes, and the program manager for the grant renewal agreed that changes from the initial grant and the renewal were approved informally.

Concerning the consultation, Foundation grant records show that Dr. Johnson attended several Office staff meetings, participated in a discussion seminar at the Foundation in January 1975 concerning the petroleum industry market structure, and presented the results of some research at the Federal Trade Commission in April 1976.

Standardizing project folders

In August 1976 the Foundation issued instructions to standardize the format and content of its grant folders. The instructions require that final fiscal and technical reports and other publications resulting from the grant be filed in the grant folder.

Evaluation and use of research results

Evaluation is the principal means of determining whether grant objectives have been accomplished and of assessing the quality of research products. There are no Foundation-wide requirements that the results of research grants be formally evaluated. Individual research directorates have the latitude to determine how research performance and results are evaluated.

According to the Office's former Director, the criterion for an overall evaluation of the papers submitted by Dr. Johnson would be whether the Office staff could use them. The grant folders neither contain a record of any evaluation of the papers nor show what use was made of them. The program manager for the grant renewal said that the Office was the intended immediate user and that the papers were circulated within the Foundation. Also, copies were given to the Office of Management and Budget, the Treasury Department, and other interested organizations. Dr. Johnson did not maintain distribution records but said about 7,200 copies of the monograph concerning competition in the oil industry were distributed.

On March 8, 1976, the Foundation's Director issued an instruction requiring that each directorate arrange for the dissemination of substantial technical reports, including those involving policy and applied research, through the Department of Commerce's National Technical Information Service. According to an official of the Directorate for Scientific, Technological and International Affairs, none of the papers submitted to the Foundation under the university's initial grant and renewal were sent to the Information Service, but the Directorate is now considering doing so.

Conclusions

The broad grant objectives of preparing a series of discussion papers and consulting and otherwise maintaining contact with the Foundation were met. Because of inadequate Foundation grant records, we cannot determine whether the

specific discussion papers prepared by the researcher are those agreed to by the Foundation. The quality of the discussion papers has not been formally determined by the Foundation, and the usefulness of the papers to the Office staff, the apparent intended users, is not documented in the Foundation's records.

Management controls, including organization changes, established since the grants were awarded to the university will provide for improved grant administration, including better documentation of project activities and records of papers submitted under a grant. However, policies and procedures for formally evaluating policy research supported by the Directorate for Scientific, Technological and International Affairs do not exist.

We believe that decisionmakers, the ultimate users of policy research, should know the quality of information they are receiving and that certainly the Foundation should make sure of the quality of information it passes on to them. Documented evaluations of publications resulting directly from Foundation-supported policy research are necessary to implement these quality controls. In the case of Dr. Johnson's research, a review of the discussion papers by a panel which included representatives of the interested public and private organizations might have accomplished this purpose.

Recommendations

We recommend that the Director of the Foundation:

- Establish formal policies and procedures for the evaluation of policy research, including peer reviews of the research proposal that provide a balance of points of view, and a timely postevaluation by peers of publications resulting directly from Foundation-supported research.
- Require that evaluations of Foundation-supported policy research be made available for distribution through the National Technical Information Service.
- Provide for a formal evaluation of the discussion papers prepared under the Foundation's energy policy grants to the university.
- Determine the need for formal evaluation of other recently completed policy research, considering the sensitivity of the subject matter and its distribution and use.

ACKNOWLEDGMENT OF SUPPORT
AND DISCLAIMER POLICY

The grants to the university were subject to Foundation policy requiring that (1) an acknowledgment of Foundation support be made with the publication of any material based on or developed under the project and (2) any publications, such as monographs and books, produced under the grant state that any opinions, findings, conclusions, or recommendations are those of the author and do not necessarily reflect the Foundation's views.

These requirements were not consistently applied to the research papers issued under the Foundation's grants to the university, as shown below.

| <u>Title</u> | <u>Foundation support acknowledged</u> | <u>Disclaimer of opinion</u> |
|--|--|------------------------------|
| "Trends in World (Prices and Production" | No | No |
| "The Impact of Price Controls on the Oil Industry" | No | No |
| "The Case Against Further Regulation of the Major Oil Companies" | Yes (partial) | Yes |
| "The Naval Petroleum Reserves" | Yes (partial) | Yes |
| "Federal Energy Policy: A Conflict of Interests" | Yes (partial) | Yes |
| "Some Comments on the President's Energy Program and Alternatives to It" | Yes (total) | No |
| "Pending Energy Legislation" | Yes (partial) | Yes |
| "How Federal Regulations are Putting Independent Oilmen Out of Business" | Yes (partial) | Yes |
| "Why U.S. Energy Policy Has Failed" | Yes (partial) | Yes |
| "Coal Policy or the Lack Thereof" | Yes (total) | Yes |
| "Competition in the Oil Industry" | Yes (partial) | Yes |
| "The International Implications of the Vertical Divestiture of U.S. Oil Companies" | No | No |
| "The Petrodollar Problem" | Yes (total) | Yes |

Dr. Johnson said that he was not aware of the Foundation's policy when the early papers under the initial grant were issued and that someone from the Foundation informed him later. He did not understand why the paper "The International Implications of the Vertical Divestiture of the U.S. Oil Companies" did not contain the acknowledgment/disclaimer statement.

Dr. Johnson said he did not follow any prescribed format in writing the statement and did not check his prior papers for uniformity. Concerning acknowledgment of partial versus total support, he stated that (1) if the papers concerned international issues or issues of interest only to the Foundation, he acknowledged full support, and (2) if the papers were of mutual interest to the Foundation, the other grantors (Oil Marketers' Conference and Southern Caucus), and Treasury, he acknowledged partial Foundation support. For example, the paper "Coal Policy or the Lack Thereof" acknowledged that it was written "under a grant from the National Science Foundation," and the paper "Competition in the Oil Industry" acknowledged that "This paper was written, in part, under a grant by the National Science Foundation."

The Foundation's policy as stated in its grant administration manual provided only a suggested format for the required statements. On May 27, 1976, the Foundation's Acting Director established a standard format for the statements. The acknowledgment/disclaimer statements are required on all publications of the researcher resulting from the grant, but the disclaimer statement may be omitted from scientific articles or papers published in scientific journals. This is the same requirement that was applicable to the university grants. Procedures for the Foundation's program managers to obtain compliance have not been established.

Disclosure of all funding sources

Questions have been raised about the propriety of not disclosing all sources of funding for Foundation-supported policy research. Office officials responsible for the energy policy research grants to the university were not concerned with the other sources of funding because they believed they would not influence the outcome of the research. As of January 7, 1977, the Foundation had not taken a position on this issue.

Conclusions

The Foundation's policy requiring acknowledgment of support and a disclaimer for content was not consistently complied with in the publications resulting from the Foundation's energy policy grants to the university. Foundation program managers, as part of their grant-monitoring responsibilities, should be required to examine publications resulting directly from Foundation-supported policy research before their public release to check for compliance with the policy.

As previously recommended, the Foundation needs to issue a policy directive on how the source of outside funding should be considered in the grant award process. (See p. 16.) We believe outside funding from organizations that could be affected by the research results should be avoided if possible, because it could easily raise conflict-of-interest questions and reduce the credibility of the research. Disclosure of all sources supporting the research would serve notice to users who might believe the source of funding affects the outcome of the research. However, it should be recognized that a researcher not receiving direct outside support from interested sources to help do Foundation-supported research might receive payments from interested parties for speeches, consulting, or other services while doing a Foundation-supported project. Further, before being funded by the Foundation, the researcher might have received funding from interested sources for various services, and upon completing a Foundation-supported project, the researcher might again be employed by interested sources.

As previously stated, we believe evaluation is the principal way to determine the quality of Foundation-supported policy research. Also, policy research publications directly resulting from Foundation support could cite a bibliography of the researcher's recent related publications that the interested user could obtain to learn about the researcher's prior positions.

Recommendations

We recommend that the Director of the Foundation:

- Require that program managers examine publications resulting directly from Foundation-supported policy research before their public release to check for compliance with the acknowledgment of support and disclaimer policy.
- Require that the Foundation's acknowledgment of support policy be revised to require disclosure of all funding sources of Foundation-supported research.
- Determine the feasibility of requiring that policy research publications developed with Foundation support include citations to related research of the principal investigator.

INCOME FROM SALE OF PUBLICATIONS

The Foundation defines program income as gross revenues received by a grantee through activities under the grant. Income includes proceeds received by a grantee from the sale of books, monographs, and other material developed or produced with Foundation support.

Foundation policy provides that before a grant is awarded, consideration should be given to the grant's income potential. Also, considering the nature of the project, the purpose of Federal support, and the amount and source of expected income, the Foundation should provide for the disposition of the income in the grant. Foundation policy provides that income would normally be maintained in a separate account and, as much as possible, used to offset costs otherwise allowable and chargeable to the grant, including expenses associated with the income-producing activity. If total income is estimated to be more than \$10,000, the grant is to provide that income not used as provided for in the grant be returned. If total income is estimated to be less than \$10,000, the grant may provide that income not used be retained by the grantee for science or science education purposes. 1/

The Foundation's project folder for the university grants showed that the Foundation determined that, since the discussion papers were to be used by the Foundation and not sold for income, there was no income potential. Therefore, no specific provision was made in the initial grant or the renewal for disposition of income.

Grant records at the university showed that:

--Through September 30, 1976, the grantee had realized \$14,826.59 in income from the sale of publications, of which \$14,076.09 resulted from the sale of the monograph "Competition in the Oil Industry" and \$750.50 was from the sale of reproduced copies of research papers (\$685.00 from "Competition in the Oil

1/Currently, the Foundation requires its share of royalties earned on sales of science education material developed with its support to be returned by the grantees for deposit in the Treasury. The requirement resulted from a 1975 agreement with the Chairman, Subcommittee on HUD-Independent Agencies, Senate Appropriations Committee, that the gross royalties (considered a profit) be returned.

Industry" and \$65.50 from "International Implications of the Vertical Divestiture of U.S. Oil Companies".)

- Publication costs totaled \$10,988.81 for the same period. Publication costs of the monograph totaled \$10,465.26 and costs of reproducing copies of the research paper "Competition in the Oil Industry" that were sold totaled \$523.55.
- Income from total sales exceeded the recorded costs of publication and reproduction by \$3,837.78.
- All receipts from sales of publications were credited to the Independent Oil Marketers' Conference grant.
- All related costs, except \$523.55 that was charged to the Southern Caucus grant, were charged to the Independent Oil Marketers' Conference grant.
- Other than a charge for the registration fee for copy-righting the monograph, no income or related expenses for publications that were sold were processed through the Foundation's grant.

The Foundation's grant administration manual, which contains policies and procedures for grantees to follow and which was included as part of the grant to the university, provides under the section on contracts that:

"* * * Commercial production and distribution of books, films or similar materials developed with the support of an NSF [National Science Foundation] grant may be undertaken only as described in a proposal which results in an NSF grant, or, if not so described, with prior NSF approval.
* * *"

Dr. Johnson arranged for the production (printing, art work, etc.) and distribution of the monograph "Competition in the Oil Industry." He also handled arrangements for reproducing and distributing the other research papers. Neither the Foundation's nor the university's grant records document Foundation approval of these activities. Dr. Johnson said he probably mentioned the intended publication of the monograph to the Foundation. The program manager for the renewal said he did not know what was done, but he believes the Foundation would have approved because it encourages publication and distribution of research results.

University records show that the Foundation has contributed over 50 percent of the grant funds for the university's energy research project. As of August 31, 1976, the university's records of expenditures and encumbrances show that costs have generally been charged to the grants used by the university to support the project in proportion to their support. Consequently, the Foundation has been charged with about 50 percent of the total project costs.

Conclusions

The publication and distribution arrangements for research papers resulting from the Foundation's grants to the university were apparently not formally approved (in writing) by the Foundation. It is uncertain whether the arrangements were approved orally. Because of this informality, the Foundation lost control of income generated under the grant. Since the Foundation pays a large part of the research cost and it might not have had the opportunity to consider the publication and distribution arrangements, it ought to be able to determine the disposition of at least some of the net income resulting from the sale of publications developed with its support.

Sound business practices would dictate formal written Foundation approval of commercial publication and distribution arrangements. The Foundation's program managers, through their monitoring practices, should be responsible for making certain that Foundation policies regarding publication and distribution arrangements and income from the sale of publications are enforced.

Recommendations

We recommend that the Director of the Foundation:

- Require grant recipients, as a condition of the award, to (1) obtain the Foundation's written approval of commercial publication and distribution arrangements for publications resulting directly from the Foundation's support and (2) allow the Foundation to determine the disposition of all income resulting from the sale of such publications.
- Consult with the university to provide for disposition by the Foundation of an equitable share of the net income from the sale of publications developed under the Foundation's energy policy grants to the university.

--Specifically provide for the disposition of income in the energy policy grant to the university, if the grant is renewed.

PAYMENT FOR SALARIES
AND CONSULTANT SERVICES

By agreement with the Subcommittee Chairman's office, we reviewed the salary payments to the principal investigator under the Foundation's initial grant and renewal to the university.

For the initial grant period (September 1, 1974, through August 31, 1975), 75 percent of his salary was charged to the Foundation grant and 25 percent to the Independent Oil Marketers' Conference grant. For the renewal grant period (September 1, 1975, through August 31, 1976), 71.4 of his salary was charged to the Foundation's grant, 15.8 percent to the Southern Caucus grant, and 12.8 percent to the Independent Oil Marketers' Conference grant. The salary payments charged to the Foundation grants were in accordance with the budgets approved by the Foundation for its initial grant and renewal and the percentage of the researcher's time to be devoted to the Foundation's grants.

By agreement with the Subcommittee Chairman's office, we also determined whether the grantee employed any Foundation personnel as consultants under the grant. Foundation policy provides that Federal employees--except Foundation employees--can be employed under its grants as consultants if they obtain their agency's approval and their services are provided outside regular working hours or while on leave from official duty. We did not find any evidence in the Foundation's or the university's grant folders that Foundation employees served as consultants under the grant. However, other Federal employees did serve as consultants.

One consultant, employed by the Treasury Department as an international economist in its Office of Energy Policy, was paid \$360 during the first grant period to help do research and collect and interpret data. The Independent Oil Marketers' Conference grant was charged for these services.

The Director of Treasury's Office of Energy Policy was employed as a consultant to write a chapter on Federal and State policies affecting the coal industry for inclusion in a planned book on energy policy problems. He was paid \$400 during the first grant period and \$1,600 during the second grant period, amounts which were charged respectively to the

Independent Oil Marketers' Conference grant and the Foundation's renewal grant (which included \$20,000 transferred to the Foundation from Treasury to support the grant).

Treasury Department regulations concerning outside employment (31 CFR 0.735-38) provide that:

"Employees shall not engage in any outside employment or other outside activities, with or without compensation, which (a) interfere with the efficient performance of official duties, (b) might bring discredit on or cause unfavorable and justifiable criticism of the Government or (c) might reasonably result in a conflict of interest, or an apparent conflict of interest, with official duties and responsibilities. * * *"

Further, the regulations (31 CFR 0.735-39) allow employees to accept engagements to speak, write, or teach provided that the information to be used was not obtained as a result of Federal employment, unless (1) the information has been made available to the public or will be made available upon request or (2) a determination is made that using nonpublic information is in the public interest. Before release of a speech or article related to Treasury business, the employee must obtain Department approval. The official approving the employee's participation in the engagement will determine whether the activity will be performed as an official duty or in a private capacity. In the former case, the employee cannot accept outside compensation. In the latter case, the employee can accept outside compensation, but he may not use duty hours or Federal facilities.

The Treasury employees obtained approval from their superiors to perform the above-described work as consultants for the university's energy research project. Employee time and attendance records and billings for the consultant service show that the activities were performed outside of the employees' regularly scheduled Federal working hours. According to a Department official, the chapter on the coal industry prepared by the Treasury employee was reviewed by the official who approved the employee's request to write the chapter.

Approval was granted to the Treasury employee in January 1975 to prepare the chapter in a private capacity. In June 1975, the Department transferred \$20,000 to the Foundation in general support of the energy policy grant to the university. The \$1,600 payment to the employee charged to

the Foundation's grant was for vouchers submitted in December 1975 and May 1976.

Treasury Department regulations concerned with outside employment (31 CFR 0.735-38 and 31 CFR 0.735-39) do not specifically prohibit an employee being paid in a private capacity for Department-financed activities. A Treasury official responsible for processing the transfer of funds to the Foundation said she was not aware of the consultant contract held by the Treasury employee. She viewed the situation as questionable and said she would have referred it to the General Counsel. The Department's Counsel to the General Counsel on ethics matters advised us that the employee's consultant services were provided under contract to the university as a separate transaction from the Department's cost sharing and should be viewed that way. He added that in view of the total Federal funds for the renewal grant (\$50,000 from the Foundation and \$20,000 from Treasury), the \$1,600 paid the Treasury employee is insignificant.

A member of a Senator's staff was paid \$2,000 during the first grant period to write a paper on the oil import control program and various proposals to reinstitute import quotas. Payment was charged to the Independent Oil Marketers' Conference grant. About half of the money was earned before the person resigned from the Senator's staff. Effective September 1, 1975, the person was employed full time by the university as a research associate on the energy policy research project.

According to the Senator's administrative aide, the employee who performed consulting services for the university's energy research project was allowed and encouraged to do outside consultant work or free lance writing. Further, we were advised that office records showed the employee on leave for 5 of the 8 Federal workdays for which consultant services were billed. Leave records for the other 3 workdays could not be located.