BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

The Department Of Energy Needs Better Procedures For Selecting A Contractor To Operate Argonne National Laboratory

Argonne National Laboratory is a multiprogram research and development laboratory operated by contractors for the Department of Energy. The Laboratory employs about 5,200 people with an annual operating budget of about $295 million.

GAO evaluated DOE's process for awarding the Argonne contract and found that major improvements are needed. Specifically, DOE needs to

--determine the availability and potential benefits of competition;

--periodically evaluate the contractors' performances, and feed back the results to the contractors;

--enforce the contract terms; and

--end the two-contractor arrangement.

In addition, Argonne's role in carrying out DOE's programs must be decided to assist in selecting an operating contractor and in planning major laboratory facilities and equipment.

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

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To the President of the Senate and
the Speaker of the House of Representatives

This report discusses the Department of Energy's procedures for awarding a contract to operate the Argonne National Laboratory and other related matters.

The report was done as a part of our continuing evaluation of the Department's management of its substantial research and development resources and activities.

We are sending copies of this report to the Director, Office of Management and Budget; and to the Secretary of Energy.

Milton J. Socolar
Acting Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

THE DEPARTMENT OF ENERGY NEEDS BETTER PROCEDURES FOR SELECTING A CONTRACTOR TO OPERATE ARGONNE NATIONAL LABORATORY

D I G E S T

The Department of Energy (DOE) is responsible for conducting Government research and development in basic sciences, in a variety of energy technologies, and in the military applications of nuclear energy. With a few minor exceptions, however, DOE does not directly perform research and development work. Instead, it contracts this work out to industries, universities, and others spending over $3 billion annually at 12 Government-owned, contractor-operated laboratories. Argonne National Laboratory, located southwest of Chicago, Illinois and near Idaho Falls, Idaho, is one of these laboratories. It employs about 5,200 people and is expected to have an annual operating budget of about $295 million over the next 3 years.

Argonne is unique because it is operated by two contrators. The University of Chicago runs the Laboratory on a day-to-day basis. The Argonne Universities Association, a consortium of 30 midwestern universities, is responsible for setting operating policies and reviewing Laboratory operations. The University has operated Argonne since it was established in 1946. DOE pays each contractor an annual management allowance for its services, in addition to paying for the actual costs of Laboratory operations. Management allowances are not fees but are intended to be reimbursements for expenses incurred by the contractors in fulfilling their contractural responsibilities. The contract does not have any financial performance incentives.

Periodically, DOE must decide whether to extend each national laboratory operating contract or award a new one using competitive procurement practices. DOE is supposed to make this decision after considering the current contractor's past performance and capability of meeting future requirements and the availability and potential benefits of competition. DOE recently completed this process for

Argonne and extended the existing contract from October 1, 1980, to September 30, 1983.

GAO evaluated DOE's decision and award and found that major improvements are needed if DOE is to ascertain that it is making the best contract decisions consistent with DOE's objectives. GAO also found that DOE needs to better define its expectations of the Laboratory and communicate this to the Argonne contractors. GAO did not evaluate either the need for Argonne or the relevancy of all its work in terms of accomplishing DOE's program objectives.

DOE MUST IMPROVE ITS PROCESS FOR AWARDING THE ARGONNE CONTRACT

Two DOE teams separately evaluated the Argonne contractors' performances. One team recommended that DOE extend the existing contract for 5 years--the normal period for DOE national laboratory contracts. The second team could not agree on a recommended procurement action, however, because it found that DOE had not clearly defined its expectations of the Laboratory. Therefore, the team presented alternatives ranging from a 5-year contract extension to a competitive procurement. After considering these evaluations and determining that a competitive procurement would not improve DOE's position in terms of cost or performance, DOE decided to extend the existing contract for 3 years. (See pp. 5 to 7.)

The process DOE used in arriving at its decision had major weaknesses which must be corrected if DOE is to make the best Argonne contract decisions in the future. Specifically:

--DOE did little to determine the availability and potential benefits of competition. Also, DOE did not schedule its extend or compete decision early enough to award a new contract using competitive procurement procedures. These deficiencies effectively foreclosed

competition as an option for obtaining an Argonne operating contractor. (See pp. 7 and 8.)

--DOE did not carry out consistent and timely evaluations of the contractors' performances, based on preestablished criteria, with feedback of results to the contractors. Instead, two DOE teams using different criteria evaluated the contractors near the end of the contract period. This resulted in vague and undocumented criticisms of the contractors' performances raised late in the contract period. (See pp. 8 to 11.)

--For the fifth consecutive time DOE extended the Argonne contract for a shorter than normal period because one DOE program office was not satisfied with the contractors' performances. (See pp. 11 and 12.)

--DOE did not obtain contractors' commitments to fully perform their contractual duties despite DOE findings that neither contractor was fulfilling its assigned duties. At the same time, DOE agreed to unsupported increases in the annual management allowances it pays to each contractor. (See pp. 12 to 14.)

--DOE did not end the two-contractor arrangement even though the arrangement's primary original purpose no longer exists. The Association was added as an Argonne contractor in 1966 to ensure its member universities access to a then new high-energy particle accelerator, in particular, and to all of the Laboratory's facilities in general. The accelerator was permanently shut down in 1980. The two-contractor arrangements has caused dissatisfaction and friction since its inception. (See pp. 14 and 15.)

DOE NEEDS TO DEFINE FUTURE EXPECTATIONS OF THE ARGONNE OPERATING CONTRACTOR

One DOE contractor evaluation team attributed certain management problems it identified at

Argonne to a lack of mutual understanding of what was or should be expected of the Laboratory and its contractors. The review team could not agree whether the contract should be extended or opened to competition because of the lack of clear expectations.

In its early years, Argonne's role was clear: it was devoted to nuclear fission-related research. Over the last decade or so, however, Argonne has changed into a laboratory (1) conducting research and development in diverse energy technologies, (2) coordinating transfer of these technologies to the industrial and commercial sectors, (3) managing projects and funds for DOE, and (4) acting as a subcontractor on projects managed by others. These changes in the Laboratory's work have come about principally by a combination of changes in national energy priorities and the Argonne contractors' initiatives aimed at maintaining and perpetuating the Laboratory in this period of change.

Because of the many changes in Argonne's work over the last decade, DOE recognized that it needed to define a role for the Laboratory. DOE's efforts to date, however, have not been successful. This is because instead of deciding what must be done to achieve DOE's program objectives and then deciding who is best suited to do it, DOE has continued a longstanding policy of permitting the Argonne contractors to select both the Laboratory's general areas of concentration and specific work projects.

DOE needs to take an earlier and more active role in formulating general work plans for Argonne in the context of DOE's plans for carrying out the objectives of its various programs. Until DOE first decides what work should be done at its national laboratories--as opposed to work done by DOE, industry, and others--and then decides what work Argonne should do, it is in a poor position to decide on a contractor or on major Laboratory facilities and equipment. In this regard, the present Argonne contractors want $270 million to renovate existing general purpose laboratory facilities. The contractors are

also seeking two new research facilities--estimated to cost $140 million--and a long-term commitment of DOE funds to operate them. Until DOE establishes Argonne's role in achieving energy program objectives, DOE cannot know whether these are wise investments.

RECOMMENDATIONS TO THE SECRETARY OF ENERGY

To ensure that DOE effectively and efficiently uses Argonne National Laboratory as one of its energy research and development resources, the Secretary of Energy should

--establish and communicate to the Argonne contractors the role DOE expects Argonne to play in carrying out DOE's program objectives;

--suspend any planned major renovation or expansion of Argonne facilities and equipment until Argonne's role is established, and base future facility and equipment improvements on the established role.

To improve DOE's process for awarding an operating contract for Argonne, the Secretary of Energy should

--identify and document the availability and potential benefits of competition and complete the extend or compete decision process early enough so that competitively awarding a new Argonne operating contract becomes a realistic alternative to extending the existing contract; and

--establish criteria for evaluating contractor's past performances and capabilities of meeting DOE's future requirements consistent with Argonne's established role, and conduct formal evaluations with feedback to the contractors on a periodic basis.

GAO also recommends that the Secretary of Energy end the present two-contractor arrangement when the contract expires in September 1983.

Finally, GAO is recommending that the Secretary of Energy make other improvements in DOE's process

for awarding the Argonne operating contract. These recommendations pertain to limiting the number of repetitive short contract extensions, enforcing the contract terms, and documenting the basis for negotiated contractor management allowances. (See pp. 25 and 26.)

DOE COMMENTS AND GAO'S EVALUATION

DOE said GAO's report reflects some general misunderstandings of the nature of a complex research and development institution such as a multiprogram laboratory; laboratory management's role; and judgment factors DOE officials use in assessing a laboratory's future productivity. DOE said these misunderstandings lead to wrong conclusions and recommendations. GAO agrees that a multiprogram laboratory such as Argonne is involved in highly complex technical programs. GAO did not, however, evaluate technical oversight of Argonne's many complex activities. Rather, GAO looked at the broader management aspects of how effectively and efficiently DOE shapes Argonne's role and manages its contractor selection process. From this point of view, GAO disagrees with DOE about how it should conduct its extend or compete decision process and direct Argonne's work.

DOE also said two contractors are necessary to maintain and increase interaction between Argonne and universities even though Argonne is the only one of DOE's 12 national laboratories operated by two contractors. GAO disagrees with DOE's position. In view of the limited past involvement of both the University and the Association in running the Laboratory, GAO continues to see no reason why two contractors are necessary to operate Argonne.

DOE's comments and GAO's evaluation of them are in appendix I. (See pp. 27 to 40.) Appendix II presents the complete text of DOE's comments. (See pp. 41 to 47.)

Contents

ABBREVIATIONS

AEC	Atomic Energy Commission
DOE	Department of Energy
ERDA	Energy Research and Development Administration
GAO	General Accounting Office

CHAPTER 1

INTRODUCTION

Argonne National Laboratory is one of 12 Government-owned laboratories that conduct research and development for the Department of Energy (DOE) in basic sciences; in a variety of energy technologies such as nuclear fission and fusion, solar energy, fossil fuels, and energy conservation; and in military applications of nuclear energy. The 12 laboratories have about 50,000 employees with scientific and technical skills, facilities totaling $4.2 billion in initial capital investment, and a total annual operating budget funded through DOE of over $3 billion.

For many years the national laboratories were a part of the Atomic Energy Commission's (AEC) extensive nuclear research and development facilities. On January 19, 1975, that agency was abolished and replaced by the Energy Research and Development Administration (ERDA). Subsequently, on October 1, 1977, ERDA was abolished and its research and development functions became a part of the new Department of Energy.

With a few minor exceptions, DOE does not directly perform research and development work, and it does not directly operate its 12 national laboratories. DOE contracts operations out to universities, industries, or non-profit contractors. Argonne is the only DOE national laboratory operated by two contractors--the University of Chicago and Argonne Universities Association. The University is responsible for day-to-day Laboratory operations and the Association, a consortium of 30 midwestern universities, is responsible for setting and reviewing Laboratory policies and programs. The Laboratory is located southwest of Chicago, Illinois, with additional facilities at DOE's Idaho National Engineering Laboratory located near Idaho Falls, Idaho.

For each national laboratory, DOE periodically decides whether to extend the current operating contract or award a new contract using competitive procurement procedures. To prepare for this decision, DOE is supposed to evaluate the existing contractor's past performance and ability to meet future requirements and assess the potential benefits of seeking competition. Laboratory operating contracts usually run for 5 years. DOE and its predecessors have almost always retained existing laboratory contractors. On September 18, 1979, DOE decided to extend its contract with the University and the Association for a 3-year period beginning October 1, 1980. This report presents our evaluation of the process DOE employed in making that decision and other factors which have an important bearing on the contractor selection process.

BACKGROUND ON ARGONNE NATIONAL LABORATORY

In 1942, Enrico Fermi and other scientists at the University of Chicago's Metallurgical Laboratory demonstrated the feasibility of a self-sustaining nuclear reactor, leading to the development of atomic weapons. On July 1, 1946, the Metallurgical Laboratory became Argonne National Laboratory, and on January 1, 1947, the Laboratory was placed under the control of the then new AEC. Initially, Argonne's work was in basic nuclear science--the accumulation of knowledge about the atom without any particular application in mind. Eventually as the Laboratory's basic nuclear research pointed to military and civilian applications, it became more involved in applied nuclear research. Over the years, Argonne pioneered in designing and developing numerous nuclear systems and built broadly based research programs in physical and life sciences, all in support of AEC's mission to explore and exploit the peaceful uses of nuclear energy.

The University of Chicago was the sole operating contractor until 1966, when the Argonne Universities Association was added as a second contractor. At that time Argonne was building a new high-energy particle accelerator, called the Zero Gradient Synchrotron, which was expected to be in the forefront of basic physics research and have many researchers competing for opportunities to use it. The Association was established and made a party to the operating contract to assure midwestern universities access to the Laboratory in general and to this accelerator in particular.

DOE pays for Laboratory facilities, equipment, maintenance, and the annual operating expenses of the Laboratory. DOE also pays each contractor an annual management allowance. For the contract period which expired on September 30, 1980, the University's annual allowance was $1.25 million and the Association's annual allowance was $450,000.

OBJECTIVE, METHODOLOGY, AND SCOPE

Our objective was to determine if DOE has an effective process for (1) deciding whether to extend a national laboratory operating contract or to award a new contract using competitive procurement practices and (2) awarding new or extended contracts. As a case study, we selected the Argonne contract extension for evaluation because at that time it was the most recently renewed national laboratory operating contract. In addition, the Laboratory's operating funds are substantial, and previous operating contracts have been consistently extended for less than the usual 5-year period.

Our approach to evaluating DOE's process was to answer the following questions:

--What guidance has DOE provided its officers for use in making extend or compete decisions and awarding new or extended laboratory operating contracts? Is this guidance sufficient? Did DOE officials comply with it?

--Was DOE's decision to extend the existing Argonne contract for 3 years reasonable based on the factors to be considered in reaching an extend or compete decision? Did DOE adequately define its operating contract requirements, evaluate the existing contractor's performance capabilities, and assess the availability and potential benefits of competition; and did DOE adequately weigh these factors in reaching its decisions?

--Does the contract extension DOE negotiated provide reasonable assurance that the contractors will satisfy DOE's requirements at a fair price?

We did not evaluate whether or not (1) DOE should perform its own research and development work or use contractors, (2) Argonne or other national laboratories are necessary to achieve DOE's program objectives, and (3) Argonne's work is useful in accomplishing DOE's program objectives.

To answer our basic questions on DOE's Argonne contracting process, we reviewed DOE's general procurement regulations and orders; specific DOE correspondence relating to the recent Argonne contract extension; and all DOE staff decisions, recommendations, and supporting analyses--including DOE internal evaluations of the contractors' performances--leading up to the DOE Under Secretary's decision to extend the Argonne contract. We also reviewed related documentation such as the Argonne National Laboratory 5-year institutional plan and records pertaining to the contract negotiations subsequent to the Under Secretary's contract extension decision.

In addition, we discussed our basic questions and information contained in the documentation we reviewed with DOE officials at its headquarters and Chicago Operations and Regional Office, with University and Association management officials, and with most of the Laboratory's senior staff.

The scope of our work was limited to Argonne National Laboratory. Therefore, all of the matters discussed in this report, including our conclusions and recommendations, apply primarily to DOE's management of that Laboratory. Nevertheless, certain findings, conclusions, and recommendations

relating to DOE's extend or compete process may apply to other national laboratories.

CHAPTER 2

THE CONTRACTING PROCEDURES THAT DOE USED IN EXTENDING THE ARGONNE NATIONAL LABORATORY CONTRACT HAD WEAKNESSES

The procedures DOE used in deciding to extend the existing Argonne National Laboratory operating contract and negotiating a contract extension had major weaknesses. Specifically, DOE did not

- --identify and document the availability and potential benefits of competition, or schedule its extend or compete decision early enough to award a new contract using competitive procurement procedures;
- --conduct consistent and timely evaluations of the contractors' performance, based on preestablished criteria, with feedback of results to the contractors;
- --consider the potential adverse impacts that continued short contract extensions, due to less than satisfactory performance, might have on DOE's management of its national laboratories;
- --obtain contractors' commitments to fully perform their contractual duties despite DOE findings that neither contractor was performing its assigned duties; and
- --consider dissolving the two-contractor arrangement, even though the arrangement's original primary purpose no longer exists, and it has been less than satisfactory since its inception in 1966.

The following sections discuss these points in more detail.

SYNOPSIS OF THE RECENT EXTEND OR COMPETE REVIEW OF THE ARGONNE CONTRACT

To provide sufficient time for determining whether to extend a contract or open it to competition, DOE's procurement regulations require the head of the applicable procuring activity (in Argonne's case the manager of DOE's Chicago Operations and Regional Office) to recommend a decision 18 months before the contract expires, after considering the following factors.

--The current contractor's overall performance, specifically including technical, administrative, and cost performance.

--The potential effects of changing the contractor on the Government's cost, the local economy, and program execution.

--The availability of competition.

--The appropriateness of the contractor's proposed scope of work and period of performance.

--The type of contract appropriate to the work's scope.

The final decision is made by the Under Secretary of DOE.

DOE's Chicago Operations and Regional Office evaluated the existing contractors, considering the above factors, and prepared a recommended contract action on April 19, 1979. The Office evaluated the Argonne contractors' administrative and programmatic performances on several DOE programs and supplemented these evaluations with assessments obtained from DOE program offices. Overall, the Office gave the contractors high marks and recommended a 5-year contract extension.

The Director of DOE's Office of Energy Research had requested that the Chicago Operations and Regional Office address its recommendation to him, so he in turn could make the final recommendation to the Under Secretary. Before making this recommendation, however, the Director decided to conduct a second evaluation. The Director assembled a review team represented by his Office, other DOE program offices, the Chicago Operations and Regional Office, and DOE's procurement and controller offices. In June 1979, this team evaluated the Laboratory's performance through discussions with DOE program office personnel, the Chicago Operations and Regional Office, the principal Laboratory staff, and representatives of the contractors. This review team rated the Laboratory's overall performance above average when compared to the broad range of federally supported laboratories review team members were familiar with. In the nuclear program area--the DOE program area with the most work at Argonne--the review team found problems with the Laboratory in the areas of program planning and management, particularly in reactor engineering. Where the team identified problems, it attributed them to a lack of both (1) management attention by the University and the Association and (2) mutual understanding about peformance expectations between DOE program offices and the contractors.

The review team found that although a large part of Argonne work is in applied research and technology development, the

Laboratory's management perceived the Laboratory's fundamental mission as one of basic research. The team concluded that improvements could come from more effective DOE and contractor management interaction. The review team could not agree on a recommended contract action, however, because it found that DOE's expectations of the contractors were not clearly defined. Instead, its July 9, 1979, report presented five alternatives ranging from seeking competition for the Argonne contract from industrial firms to extending the existing contract for a full 5-year period.

The Director, Office of Energy Research, recommended, and on October 29, 1979, the Under Secretary decided to extend the Argonne contract for 3 years. This represented a middle course from among the five alternative actions. The Under Secretary ordered the Director, Office of Energy Research and the Chicago Operations and Regional Office Manager to develop a program, in conjunction with the contractors, to improve management and performance at the Laboratory, particularly in the areas of engineering and project management. The Director then assembled a working group to canvas DOE program offices for suggested contract modifications and recommendations for contractor management improvements. The working group suggested two contract changes. These included the possibility of applying cost plus award fee features to specific program areas, and modifying the roles and responsibilities of the two contractors to reflect performance objectives. The working group also suggested seven management improvements. Three improvements related to improving Laboratory staff management. The other four related to improving (1) the Association technical review committees, (2) interaction with universities, (3) plans for commercialization as part of the research and development process, and (4) the managerial environment for conducting applied research.

On May 28, 1980, the Director, Office of Energy Research met with the Argonne contractors and the Chicago Operations and Regional Office to discuss the working group's recommendations. The contractors stated that actions were already underway on the recommended management improvements. In the subsequent contract negotiations, however, the suggested contract changes were not pursued. According to DOE, they were not pursued because (1) no program office wanted a cost plus award fee contract arrangement, and (2) DOE believed that the contractors would begin working to meet their contractual responsibilities.

DOE WAS NOT PREPARED FOR A COMPETITIVE PROCUREMENT

DOE's policy is to seek competition rather than extend facility operating contracts if competition could measurably improve costs and/or performance. DOE's Director of Procurement

and Assistance Management told us it would take 2 to 3 years to award a new Argonne operating contract using competitive procurement practices. In November 1978, for example, DOE was planning for the possibility that it might have to seek a new contractor for one of its other national laboratories effective October 1, 1982. At that time, DOE headquarters officials estimated that they would need 2 years to acquire a replacement contractor. DOE only requires, however, that the head of the procuring activity make an extend or compete recommendation 18 months before the existing contract expiration date.

To make competition a realistic option, DOE must either begin preparing for a competitive procurement before the head of the procuring activity makes his recommendation or require the recommendation earlier. Extending the existing contract for a period sufficient to permit a competitive procurement may not be an alternative because the existing contractors could refuse such a short extension. Thus, it appears that awarding a new contract using competitive procurement procedures was not really an option in the recent extend/compete decision process.

The above timing deficiency was complicated by the fact that DOE had not conducted a formal survey of potential Argonne contractors. Although some DOE officials believed other institutions would be interested in operating the Laboratory, the Chicago Operations and Regional Office Manager stated that he could not predict the potential response to a DOE request for proposals for a new operating contract. Because DOE failed to determine the availability and attractiveness of competition for the Argonne operating contract and did not allow sufficient time to open the contract to competition, it had no alternative but to extend the existing contract.

IMPROVEMENTS ARE NEEDED IN DOE'S EVALUATION OF THE ARGONNE CONTRACTORS' PERFORMANCE

DOE must consider a laboratory contractor's overall performance in deciding whether to extend or compete a laboratory contract. At the same time, DOE should evaluate the existing contractor's capabilities for meeting future DOE requirements which may differ from past requirements. Finally, sound management practice dictates that DOE, during the contract, periodically evaluate a laboratory contractor's day-to-day performance with feedback of evaluation results, to identify contractor weaknesses and/or use the results as a basis for deciding on future contract extensions. These evaluations should be based on predetermined criteria or expectations against which performance can be measured.

For the recent Argonne contract extension, the two DOE evaluations of the contractors' performances were deficient in these areas.

--DOE had not established criteria for use in evaluating the Laboratory contractors' past performances and their capabilities of meeting future DOE requirements. Therefore, each evaluation team had to develop its own evaluation criteria, scope, and methodology.

--DOE offices programming work at Argonne were not periodically evaluating the contractors' performances. Instead, such evaluations were made only near the end of the contract period without documentation and timely feedback to the contractors on purported performance problems.

DOE did not have performance evaluation criteria

As the chief procurement officer for the Argonne contract, the Chicago Operations and Regional Office Manager was responsible for evaluating the Argonne contractors' performances and developing a recommended contract action. DOE, however, did not provide the manager with criteria to be used in evaluating the contractors' performances. Therefore, the manager used criteria his Office developed at the then ERDA Acting Administrator's request following the previous Argonne contract extension. During that extend or compete review, several ERDA program offices had criticized the Argonne contractors' performances but had not documented these criticisms.

The Chicago Operations and Regional Office requested several DOE program offices to assess the contractors' performances on selected DOE programs based on the criteria supplied by the Operations Office. While all respondents rated the contractors' technical performances as high quality, one office stated that the performance evaluation criteria were too oriented towards past performance, with insufficient emphasis placed on the contractors' capabilities of meeting future DOE performance requirements.

The second review team also developed its own evaluation approach. It developed a list of questions and used them as the basis for its discussions with DOE program offices, the Chicago Operations and Regional Office, and the contractors. The review team found that while DOE program offices complained of past problems to the review team, they could not provide evidence supporting their complaints. The team concluded that the problems identified at Argonne, particularly in the nuclear energy area, largely stemmed from a lack of mutual understanding of expected contractor performance and the criteria DOE would use to measure it.

One DOE program office--nuclear energy--complained that DOE evaluations of Argonne were made on an informal and sometimes

inconsistent basis, with evaluation criteria unknown to the Laboratory until the evaluation was underway. The office believes that DOE could solve this problem by using acceptable standards of performance and stating them in the contract. Also, the Chicago Operations and Regional Office argued that DOE's offices must reach an internal agreement about expectations of the Laboratory, and communicate them to the contractors, before evaluations would be materially improved. Until such expectations are developed in the form of evaluation criteria, the Operations Office concluded, it is unlikely that future evaluations of contractor performance will be improved.

DOE did not periodically evaluate the Argonne contractors' performances

DOE was not periodically evaluating the Argonne contractors' performances over the contract period. Therefore, the contractors learned of DOE's overall assessment of their performances and recommendations for management improvements near the end of the contract period.

Periodic--perhaps annual--formal performance evaluations should benefit DOE's laboratory management in two basic ways. First, periodic evaluations could serve as the basis for deciding early whether to extend the Argonne contract or open it to competition. Second, they offer DOE a mechanism for early identification and notification to the contractors of perceived problems and necessary corrective actions. The Argonne contractors' responsiveness to problems DOE identified in periodic evaluations could be a key factor in deciding whether to extend the contract or seek competition. Both the Chicago Operations and Regional Office and the DOE headquarters review teams recognized that DOE needs to periodically evaluate the contractors and apprise them of the results. The Office found that DOE program office criticisms were not reaching the contractors until near the end of the contract period, and even then program offices were vague in defining and documenting their problems. The second review team found that while one DOE program office complained of past problems to the review team, it could not provide evidence supporting its complaints.

On May 28, 1980, almost 1 year after the two DOE performance evaluations were completed and only 4 months before the contract expiration date, the Director, Office of Energy Research finally gave Argonne 7 recommended management improvements. These recommendations, however, were expressed in general and unsubstantive terms. For example, one encouraged the contractors to address a problem of aging staff and equipment, but DOE has repeatedly cut back on the contractors' budget requests for equipment funds. The major inadequacy of the recommendations

is that they did not state the specific corrective actions the contractors would have to take to receive a full 5-year contract extension.

A recent DOE procurement order will require periodic laboratory contractor evaluations, but only by the DOE headquarters office to which the laboratory is administratively assigned--the Office of Energy Research in Argonne's case. This may not be sufficient because much of the Laboratory's work is done for other DOE program offices. For example, the Laboratory does more work for the Assistant Secretary for Nuclear Energy than for the Office of Energy Research. Thus, much of the Laboratory's work may not be adequately evaluated unless a mechanism is in place to ensure that all DOE program offices with work ongoing or planned at Argonne input to the evaluations.

DOE DID NOT CONSIDER THE POTENTIAL ADVERSE IMPACTS OF CONTINUED SHORT CONTRACT EXTENSIONS

Since the initial two-contractor Argonne contract was awarded in 1966, for the normal 5-year period, the contract has been extended for shorter periods five consecutive times because of AEC, ERDA, and DOE problems with the contractors' performances. Continued repetitive short extensions could set an undesirable precedent and have other undesirable consequences, yet DOE has not set a limit on the number of times it will extend laboratory operating contracts for short periods as a probationary measure.

DOE has identified the quality of a contractor's past performance, availability and potential benefits of competition, and an appropriate contract performance period as the major factors to be considered in deciding whether to extend an existing contract or open it to competition. For the recent Argonne extend or compete decision DOE did not know much about the availability of competition and it did not do a good job in its performance evaluation. While the Chicago Operations and Regional Office Manager recommended a 5-year contract extension, the DOE headquarters review team could not agree on a recommended procurement action. Therefore, this team presented five options ranging from competitive procurement to a 5-year extension. One option--a 3-year extension--was offered as a way of continuing the contractors on probation while the necessary improvements were being made.

Based on the two review teams' reports, the Director, Office of Energy Research recommended, and the Under Secretary decided, to extend the existing contract for 3 years--the fifth consecutive shorter than normal contract period.

An obvious question arises: how long will DOE continue shorter contract extensions, presumably because of contractor performance problems, before it decides to seek competition? We believe DOE needs to consider this question, in addition to the factors it now considers, in deciding whether to extend an existing contract, and for how long, or to seek competition.

Too many short contract extensions can be counterproductive by negating the probationary quality of a short extension. For example, the University views the short contract extension as an acceptable period and as a way of life. The repeated short extensions indicate that DOE is disposed to continually extend the contract rather than open it to competition.

Repetitive short contract extensions have other disadvantages. Argonne contractor officials said they damage morale among Laboratory managers because they imply criticism of the Laboratory's performance, yet DOE has never said why the short contract periods were selected or identified improvements necessary for a longer contract extension. Also, the reduced contract period increases the frequency of the renewal decision process, with its attendant costs and disruptions. Finally, and perhaps most important, DOE is in danger of setting a precedent for its other contractor-operated facilities. Contractors at these facilities may expect similar treatment in lieu of competing for facility operating contracts.

DOE FAILED TO OBTAIN THE CONTRACTORS' COMMITMENTS TO FULLY PERFORM THEIR ASSIGNED DUTIES

The DOE headquarters evaluation team concluded that neither the University nor the Association was performing many of the duties assigned to them in the Argonne contract. The team recommended that DOE either redefine the contractors' duties or enforce the existing contract terms. In negotiating a contract extension, however, DOE did not

- --negotiate a change in the contractors' duties and related compensation to reflect what the contractors had actually been doing,
- --obtain contractors' commitments to perform their contractual duties, or
- --put the contractors on notice that DOE would enforce the contract.

Furthermore, DOE increased the contractors' management allowances despite the review team's findings. The management allowance

DOE negotiated with the University was almost twice as much as could be supported by an advance DOE audit, and DOE did not audit the Association's proposed management allowance.

The Argonne contract states that the Association, among other things, is to (1) formulate, approve, and review Laboratory policies and programs; (2) review and approve Laboratory budget proposals and plans for new or modifications to existing facilities and programs; and (3) approve or disapprove the initial and continuing employment of key Laboratory officials. The University is responsible for managing the Laboratory according to policies established by DOE and the Association. Major University duties are to

--attract, hold, and manage the high quality staff essential to accomplishing the Laboratory's work;

--develop long-range objectives, programs, and facility plans in collaboration with the Association;

--assure safety, operability, and functional adequacy of all Laboratory facilities and systems; and

--assure publication and dissemination of Laboratory work results.

DOE's headquarters evaluation team concluded that the University's prestige helped to attract some notable scientists, and that the 30-member Association provided a mechanism for Laboratory interaction with the midwestern academic community. The team also concluded, however, that neither contractor was performing its assigned duties. The team found that the University's approach to managing Argonne is to appoint the director and top managers and give them a free hand in running the Laboratory. It described the Association's role as approving top management personnel selection and providing committees to conduct technical reviews of Laboratory programs.

We found little evidence of contractor involvement in managing Argonne. Both Laboratory and DOE officials confirmed the team's findings and acknowledged that both contractors fall far short of meeting their contractual responsibilities. The contract does not contain any type of penalty clause.

In instructing the Chicago Operations and Regional Office to negotiate a 3-year contract extension, the Director, Office of Energy Research directed that the Operations Office consider renegotiating the contract to more accurately reflect the contractors' actual duties. However, the Operations Office neither negotiated these changes, nor put the contractors on notice that DOE would begin enforcing the contract.

DOE also agreed to increase each contractor's management allowance despite the DOE review team's finding that neither contractor was fully performing. Furthermore, DOE also did not audit the Association's requested management allowance and increase the University's allowance to an amount almost twice as high as DOE's auditors could support.

The University's allowance was for overhead and other indirect expenses incurred in operating Argonne and for management salaries. The Association's allowance provides operating funds to fulfill its responsibilities under the contract. In the negotiated contract extension, DOE increased the annual allowances paid under the old contract from $1.25 to $1.5 million for the University and from $450,000 to $1 million for the Association. The University had requested a raise to $1.8 million, yet it could only furnish DOE auditors with support for $800,000 of the $1.25 million DOE paid the University in fiscal year 1980. A key DOE negotiating official could not give us a reason for granting the University a $250,000 increase in the absence of support, and could not recall if DOE had used the $800,000 supported costs for fiscal year 1980 as a negotiating basis. Furthermore, DOE did not maintain negotiation records explaining how DOE and the University agreed on the $1.5 million management allowance.

The Association had requested a $1,098,000 annual allowance. The requested increase from $450,000 was based largely on its stated intent to become more involved in Argonne management, especially in the number of anticipated technical review committees. DOE did not audit the request but agreed to a $1 million annual allowance. The key DOE negotiating official said the substantial increase is justified because DOE wants the Association to get more involved in evaluating Argonne's programs and stimulating scientific and technological advancement in the Midwest.

DOE DID NOT CONSIDER ELIMINATING THE TWO-CONTRACTOR ARRANGEMENT

The two-contractor arrangement for operating Argonne was established in 1966 to assure Association members access to the Laboratory in general and particularly to a then new advanced-design high-energy particle accelerator.

Having two contractors to run one laboratory created dissatisfaction from the beginning. Disagreements between the contractors reached a point in the mid-1970s where the Association's president proposed removing the University from the contract, the acting AEC General Manager suggested that the Association bow out instead, and the contract was extended for

only 2 years to permit the two contractors to work out their differences. A University official charged that including the Association in the Argonne operating contract was unnecessary because the University provided an adequate mechanism for ensuring other midwestern universities access to the Laboratory. The current Association president acknowledged to us that having two contractors is not the best arrangement for operating Argonne, and added that his organization could operate Argonne with additional resources.

Some key DOE officials told us they object to the arrangement because it is difficult to pinpoint each contractor's responsibility, and it is difficult for the Laboratory director to respond to two contractors and DOE. These officials believe the two-contractor arrangement is maintained for "historical reasons" and to keep good relations with the midwestern academic community. DOE's headquarters review team also concluded that the two-contractor arrangement is not helpful in dealing with problems between DOE and Laboratory management.

Also, the primary reason for having two contractors--ensuring midwestern universities access to the high-energy particle accelerator--no longer exists. That facility was permanently shut down in 1980. Regarding the other purpose--university access to the Laboratory in general--DOE could ensure such access with a single contractor with appropriate language in the Argonne operating contract and DOE attention to the contractor's efforts. The number of contractors, or the 30-member composition of the Association, does not appear as important to ensuring access to the Laboratory as diligence on the part of DOE and the Argonne contractor. For example, even though one purpose of the Association as an Argonne contractor is to facilitate member university access to Argonne, one of the seven recent recommended management improvements was for the two contractors to increase the Laboratory's interaction with universities.

CHAPTER 3

DOE NEEDS TO DEFINE ITS FUTURE EXPECTATIONS OF THE ARGONNE OPERATING CONTRACTOR

DOE's headquarters performance evaluation team attributed the management problems it identified at Argonne to a lack of mutual understanding of what was or should be expected of the Laboratory and its contractors. Because DOE had not clearly set out its expectations for Argonne, the review team could not agree whether the contract should be extended or opened to competition.

Sweeping changes in the work done at Argonne have created a need for DOE to establish the Laboratory's role in the broad context of how DOE intends to carry out its program objectives. In its early years, Argonne's role was clear: basic and applied research in nuclear fission. Over the last decade or so, however, Argonne has changed into a Laboratory conducting (1) basic research and applied research and development in diverse energy technologies, (2) coordinating technology transfer to the industrial and commercial sectors, (3) managing research and development projects for DOE, and (4) performing as a subcontractor on research and development projects managed by others.

These changes in the Laboratory's work arrived from a combination of changes in national energy priorities, as reflected by congressional actions affecting Argonne and other DOE national laboratories; changes in the mission of AEC, ERDA, and now DOE; and the Argonne contractors' own initiatives aimed at maintaining and perpetuating the Laboratory within the context of changing national energy priorities.

In 1977 DOE recognized that it needed to define each multiprogram laboratory's role in carrying out DOE's program objectives. Since then, DOE has taken modest steps in that direction. In 1978, DOE set overall staffing ceilings for each multiprogram laboratory. Subsequently, DOE began requiring laboratories to prepare 5-year institutional plans using the staff ceilings for planning guidance. DOE needs to do more. Primarily, DOE, rather than the Argonne contractors, should establish the major elements of the Argonne Institutional Plan--the Plan should be prepared from the top down rather than the bottom up. A clear definition by DOE of Argonne's future role in meeting DOE's many program objectives is necessary to ensure that (1) the Laboratory's work is properly focused, within the context of all of DOE's energy and basic sciences research and development work; (2) the proper operating contractor is selected; and (3) the Laboratory's facilities and equipment are appropriate for its assigned role.

SWEEPING CHANGES HAVE OCCURRED IN THE WORK PERFORMED AT ARGONNE

Until 1967, Argonne's effort was devoted to research and development in fundamental nuclear science, nuclear energy, and nuclear weapons. At that time, the Congress permitted the AEC national laboratories to begin conducting nuclear-related environmental safety research. 1/ In 1971, the Congress also permitted these laboratories to begin conducting nonnuclear energy research, development, and demonstration work. 2/

Beginning in 1968, Argonne's nuclear-related work started to decline, resulting in reductions in funding and staffing levels. When the Congress authorized nonnuclear energy work at national laboratories, the Argonne contractors seized the opportunity to diversify into other than nuclear energy technologies--principally fossil fuels, energy storage, energy conservation, and solar. By 1978, the Laboratory's staffing level had returned to its 1968 peak.

Other DOE laboratories similarly responded and increased their staffs by 40 percent from 1974 to 1978 when DOE imposed staff ceilings on each laboratory. DOE continued its predecessors' practice of giving each laboratory wide latitude in choosing its work.

The AEC's focus on nuclear energy was replaced by ERDA's multiple energy technology research and development responsibilities. ERDA was replaced by DOE, with its added responsibility of ensuring that demonstrated energy technologies are commercially applied. These changes brought about changes in the work at Argonne in addition to expansion into nonnuclear research and development. Specifically, ERDA and then DOE began using Argonne to

--solve specific technological problems in support of large development and demonstration programs;

--coordinate research, development, and demonstration activities among university and industrial researchers;

--manage research and development projects being carried out by others; and

--administer DOE research and development funds.

1/81 Stat. 577.

2/85 Stat. 304.

As nuclear energy work at Argonne diminished and the Laboratory moved into other energy technologies, it became less engaged in basic exploratory research and more involved in applied research and development on more narrowly focused technical problems. This meant that rather than breaking new ground, Argonne had to play a more supportive role to industry. For example, Argonne's work in coal gasification technology was to support industry initiatives to develop pilot plants. Since industry had the expertise, the resources, and the incentive to build the plants, Argonne perceived--and continues to perceive--its role as ensuring the reliability and environmental safety of these plants by developing improved materials, instruments, and control devices.

With its responsibility for commercializing technologies, DOE saw a need for a mechanism to transfer the results of the various groups doing technology research and development work to the commercial sector. DOE saw Argonne as a resource for developing and packaging newly demonstrated energy technologies for commercialization.

Another DOE policy has had a significant impact on Argonne's work. As DOE's responsibilities multiplied and diversified, it decided to decentralize the day-to-day management of its energy research and development programs and projects. Decentralization is intended to bring program implementation and project management closer to operations, minimize the need for Federal employees, and relieve DOE headquarters of routine operational responsibilities so it can concentrate on policy development and program planning. DOE envisioned that laboratories like Argonne would play an important role, and urged--not directed--Argonne to assume responsibility for managing research projects and administering research funds. Thus, Argonne is now (1) performing the technical, business, and administrative management of research and development projects; and (2) managing the procurement, contract administration, and technical aspects of research, development, and demonstration work performed outside the Laboratory.

The result of all these changes is that about 30 percent of Argonne's work is still devoted to nuclear fission work, but the rest is spread out among a broad array of responsibilities, from basic to applied research and development work for DOE and other agencies (such as the Environmental Protection Agency and the Nuclear Regulatory Commission) to administrative-type work for DOE. DOE does not have a control system on these activities to ensure that Argonne's work is helping DOE obtain its program objectives.

DOE SHOULD PROVIDE BETTER LEADERSHIP IN ESTABLISHING ARGONNE'S ROLE AND PLANNING ITS WORK

Instead of DOE deciding what must be done to achieve its program objectives and who is best suited to do it, DOE has continuously given Argonne the responsibility of selecting its general areas of concentration and the specific work projects within these general areas. Rather than telling the Argonne contractors what work DOE wants the Laboratory to do, DOE reacts to the contractors' proposals. DOE needs to take a more active role in formulating work plans for Argonne to carry out its various program objectives.

In a May 1978 report, we concluded that DOE had not adequately defined the roles of its multiprogram laboratories in nonnuclear energy research, development, and demonstration. 1/ We reported that each laboratory's future activities were largely decided during the annual budget process. In this process (1) each laboratory proposed to carry out specific tasks, (2) individual headquarters managers selected proposals for which they requested funding, and (3) DOE, the Office of Management and Budget, and ultimately the Congress approved funding of the tasks to be carried out. We concluded that this bottom-up approach had led to the piecemeal assignment of nonnuclear energy research, development, and demonstration tasks to the laboratories.

Not long after DOE was organized, it recognized the need to assign roles to its multiprogram laboratories. Since then DOE has devoted considerable--but thus far unsuccessful--efforts to develop these roles. For example, in commenting on a draft of our May 1978, report, DOE said each laboratory's role would be defined as a part of the (then) new institutional planning process. In our report, we stated that this was not the best way to define each laboratory's role because DOE permitted each laboratory contractor to develop its own plan with emphasis on maintaining and/or expanding each laboratory's level of effort.

In August 1978, DOE again reviewed the role of its laboratories and field offices and made some generalizations about how it should guide the use of the laboratories. The report admitted the need for more specific role statements but again relied on institutional planning to provide them. Finally, in January 1980 the Director, Office of Energy Research told the

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1/"The Multiprogram Laboratories: A National Resource for Nonnuclear Energy Research, Development, and Demonstration," EMD-78-62, May 22, 1978.

laboratories that a major objective for the year would be developing a definitive statement of each laboratory's role using the guidelines of the 1978 report. As in past efforts, however, DOE relied on each laboratory contractor to propose a role statement for its laboratory. By the time we completed our audit work at Argonne in December 1980, DOE was still wrestling with the issue of defining roles for its multiprogram laboratories. By then, DOE had shifted its effort to developing a generic role statement applicable to all the multiprogram laboratories which would be supplemented by specific statements explaining each laboratory's role within the general role.

Although contractor officials agreed that a role statement for Argonne was necessary, they were apprehensive about how DOE might define the Laboratory's role. They feared it would be too restrictive. For example, making each laboratory responsible for a particular energy technology would imply that all good ideas in the area would come from one laboratory. One official warned that too narrowly defined a role could make Argonne less responsive to changing Government priorities.

The above are, we believe, legitimate concerns DOE should address in coming to grips with the development of its short- and long-range plans for Argonne and other laboratories. There are undoubtedly many others. Nevertheless, Argonne's role within each DOE program area should be established based on decisions concerning the best way to achieve DOE's program objectives. Only DOE--with its responsibility to coordinate work at national laboratories, universities, and industries--has the organizational perspective to establish Argonne's role within this context. The Argonne contractors' views of their roles, on the other hand, are likely to be much more narrowly focused and naturally reflect an inclination to perpetuate the Laboratory.

The Argonne contractors continue to dominate decisions on what the Laboratory will undertake. For example, Argonne prepares the 5-year institutional plan for DOE's review and approval. DOE only specifies the staffing ceiling within which the contractors are supposed to plan. Even so, the Laboratory's plan regularly exceeds DOE's staffing ceiling in anticipation that DOE will trim some Laboratory proposals. At the lower level of identifying and funding specific work assignments, the contractors also take the lead. This bottom-up approach to choosing the Laboratory's work does not ensure that the work is relevant or directed toward fulfilling DOE program objectives. Even Argonne officials at the Assistant and Associate Director level said some work at the Laboratory may not be either useful to accomplishing DOE's objectives or oriented towards producing measurably useful results. Each year the Laboratory's work plans generally reflect a continuation of the preceding year's work plus new work proposals primarily coming from Laboratory

personnel. DOE program personnel seldom proposed specific work projects.

Besides helping to ensure that Argonne's work is directed to the Nation's best advantage, a clearly defined Laboratory role is essential to making important decisions about Argonne. For example, until DOE defines what kind of work its wants Argonne to do, it cannot develop criteria for deciding who is best suited to operate the Laboratory or what facilities and equipment the Laboratory should have.

One issue in the recent extend or compete review concerned Argonne's orientation with respect to basic and applied research and its relationships with the academic and industrial communities. A headquarters' study group concluded that although much of Argonne's resources are committed to applied research, Laboratory management perceives its fundamental mission as basic research. The group described the Laboratory's prevailing environment as more academic than industrial and suggested that an industrial contractor might be more appropriate. In deciding to renew the contract, however, the Under Secretary argued that changing to an industrial contractor might weaken the Laboratory's ties with universities and between basic research and engineering. Clearer expectations of the Laboratory could have helped DOE weigh these factors better.

A second issue was the Laboratory's role in implementing DOE's decentralization policy. The DOE review team noted--and our interviews confirmed--that Argonne staff prefer not to get involved in project management. The importance of this responsibility at Argonne, and the importance of developing project management expertise at the Laboratory, can only be judged once its role is clearly established.

The DOE review team could not agree whether or not the present contractors were the best ones to operate Argonne. In deciding to present alternatives rather than a recommended procurement action, the team summed up its indecision by saying that the choice of Argonne operating contractor depends on DOE's expectations of the Laboratory.

Other dollars and cents issues make it important for DOE to decide the future role of Argonne. DOE is planning a major renovation program at its multiprogram laboratories. The Argonne contractors estimated they need $270 million to bring the Laboratory's facilities up to standard. Furthermore, they are seeking some large user facilities and new programs for using them. Following the shutdown of its high-energy accelerator, Argonne proposed two new major facilities estimated to cost $140 million, with long-term commitments of research and equipment funds to operate them. Until DOE decides Argonne's role within

the context of DOE's program objectives, it cannot know whether it is wise to spend these kinds of sums on new facilities and equipment or on renovating existing facilities.

CHAPTER 4

CONCLUSIONS, RECOMMENDATIONS, AND OUR EVALUATION OF DOE COMMENTS

Unless DOE makes major improvements in its process for deciding whether to extend the existing Argonne contract or open that contract to competition, it will not be able to ascertain that it is making the best decision consistent with DOE objectives. Needed improvements include (1) identifying and documenting the availability and potential benefits of competition and completing the extend or compete decision process in time to permit use of competitive procurement procedures as a realistic contracting option, (2) developing better evaluation criteria as a basis for judging Laboratory contractor performance, (3) making periodic performance evaluations, and (4) considering the potential adverse impacts of repeated short contract extensions as a probationary measure. Further improvements could be made by either redefining the contractors' role to more accurately reflect what they are actually doing--with an appropriate adjustment to their management allowances--or requiring the contractors to fulfill their duties according to the contract.

Improvements in the extend or compete decision process, however, are not enough to assure that the correct contract decision is made. DOE also needs to define its future expectations of Argonne within the context of DOE's plans for carrying out its program objectives, and communicate this to the contractors.

Defining DOE's future expectations of Argonne and strengthening the extend or compete decision process should have benefits in addition to a better contractor selection process. Periodic formal evaluations of the contractor should result in earlier identification and correction of problems at the Laboratory. Also, knowing what is expected of Argonne in the future should help DOE decide on expenditures for facilities, equipment, and major renovation projects.

DOE has long recognized that it needs to clearly define its expectations of Argonne and the other national laboratories. An important first step in this direction occurred in 1978 when DOE imposed staffing ceilings on national laboratories and began requiring them to prepare 5-year institutional plans. While this is a positive step, DOE still permits and encourages the Argonne contractors to chart the future course of the Laboratory. Based on DOE's actions in reviewing the Argonne contract, it appears that DOE needs to exercise more leadership in establishing Argonne's role, planning its work, and ensuring that the right contractor is available to carry out that work.

--Although DOE is supposed to weigh the availability and potential benefits of competition against the existing contractors' performances and the impacts of changing contractors, DOE did little to identify potential Argonne operating contract competitors.

--DOE did not evaluate the contractors until near the end of the contract period and did not have criteria for its evaluation. Furthermore, DOE did not establish a relationship between evaluation results and its decision to extend the contract for only 3 years.

--DOE concluded that neither contractor was performing its duties, but DOE did not renegotiate the contract to reflect their actual performance and did not notify them that DOE would enforce the contract.

--DOE continued a cumbersome two-contractor arrangement which is unnecessary and has caused friction since its inception and offers no apparent advantage.

Considering the wide range of energy technologies DOE is developing, and the need to effectively coordinate research and development among national laboratories, the private sector, and the research community in an era of tight budgets we believe that DOE--rather than the Argonne contractors--should shape Argonne's role within the broad context of DOE's many program objectives. DOE should establish and communicate to the Argonne contractors the role it expects the Laboratory to play and how that role fits within DOE's energy research and development program objectives. Until DOE completes this action, it should not approve any major renovation or expansion of facilities and equipment at Argonne, and should then only permit these improvements if they are consistent with the Laboratory's defined role.

Once Argonne's role is determined, DOE should (1) evaluate the contractors' past performances and capabilities of meeting DOE's future requirements using preestablished criteria, and (2) make these evaluations periodically and communicate the results to the contractors. DOE should also limit the number of times a contract may be extended as a probationary measure. Finally, to make a decision to seek competition a realistic option, DOE should identify potential competitors and otherwise prepare to seek competition concurrent with its contractor performance evaluations.

DOE should also either enforce the Argonne contract or renegotiate it, with corresponding management allowance reductions, to reflect what the contractors are actually doing. DOE also needs to do a better job of negotiating management allowances. In negotiating these allowances, DOE should

require that allowances be fully supported, and should document the basis for the negotiated amounts.

The two-contractor arrangement for operating Argonne has outlived any usefulness it may have had and should be dissolved. Of DOE's 12 national laboratories, only Argonne is jointly operated by two contractors--neither of which, according to DOE, is performing as required. Furthermore, this arrangement has caused friction among DOE and the two contractors since its inception in 1966.

The original stated purpose of the arrangement was to ensure Association members access to the Zero Gradient Synchrotron in particular, and to the Laboratory and its facilities in general. The synchrotron was permanently shutdown in 1980, and we see no reason why two contractors are necessary to ensure general access to Argonne by members of the Association or any other universities.

RECOMMENDATIONS TO THE SECRETARY OF ENERGY

To ensure that DOE effectively and efficiently uses Argonne National Laboratory as one resource in carrying out DOE's many program objectives, the Secretary of Energy should

- --establish and communicate to the Argonne contractors the role DOE expects Argonne to play in carrying out DOE's program objectives;
- --suspend any planned renovation or expansion of Argonne facilities and purchase of major equipment until Argonne's role is established, and base future facility and equipment improvements on the established role;
- --either enforce the existing contract or renegotiate it, with a corresponding reduction in contractor management allowances, to reflect the contractors' actual duties; and
- --end the two-contractor arrangement when the contract expires on September 30, 1983.

To improve DOE's process for awarding an operating contract for Argonne the Secretary of Energy should

- --identify and document the availability and potential benefits of competition and complete the extend or compete decision process early enough so that competitively awarding a new Argonne operating contract becomes a realistic alternative to extending the existing contract;

--establish criteria for evaluating the contractors' past performances and capabilities of meeting DOE's future requirements, consistent with Argonne's established role, and conduct formal evaluations with feedback to the contractors on a periodic basis; and

--limit the number of times a contract may be extended for shorter than normal periods as a probationary measure.

DOE COMMENTS AND OUR EVALUATION

DOE disagreed with our report. DOE said the report reflects some general misunderstandings on the nature of a complex research and development institution such as a multiprogram laboratory; laboratory management's role; and judgment factors DOE officials use in assuring a laboratory's future productivity. According to DOE, the misunderstandings lead to wrong conclusions and inappropriate recommendations.

We agree that a multiprogram laboratory such as Argonne is a complex institution. We did not, however, evaluate technical oversight of Argonne's many complex activities. Rather, we looked at the broader management aspects of how effectively and efficiently DOE shapes Argonne's role and manages its contractor selection process.

From this management point of view, we disagree with DOE about how it should conduct its extend or compete decision process and direct Argonne's work. For example, DOE believes it appropriate to let Laboratory management initiate and retain the lead role in shaping the Laboratory's future and we do not agree. As stated on page 20, only DOE--with its responsibility to coordinate work at national laboratories, universities, and industries--has the organizational perspective to establish Argonne's role within this context. This is particularly true in an era of tight budgets. The Argonne contractors' views of their roles, on the other hand, are likely to be much more narrowly focused and naturally reflect an inclination to perpetuate the Laboratory.

DOE also said two contractors are necessary to maintain and increase interaction between Argonne and universities even though Argonne is the only one of DOE's 12 national laboratories operated by two contractors. We disagree with DOE's position. In view of the limited past involvement of both the University and the Association in running the Laboratory we continue to see no reason why two contractors are necessary to operate Argonne.

DOE's comments and our evaluation of them are in appendix I. Appendix II presents the complete text of DOE's comments.

DOE COMMENTS AND OUR EVALUATION

DOE provided us written comments on this report. Where appropriate, its comments have been incorporated in the final report. This appendix contains our detailed evaluation of DOE's comments, including, when appropriate, statements on how we revised the report. The full text of DOE's comments is in appendix II.

DOE also returned to us a copy of our draft report annotated to point out what it believed were factual inaccuracies. Most of them, however, related to or were similar to DOE's written comments. We considered these annotations in preparing the final report. No correction of any factual inaccuracy in our draft report had any affect on the report findings, conclusions, or recommendations.

DOE COMMENT

> "The report reflects some general misunderstandings regarding the nature of a complex R&D institution such as a DOE multiprogram laboratory, the role played by laboratory management, the indicators of excellence in such an institution, and the judgment factors employed by Federal officials in assessing its future productivity. Furthermore, the report assumes that the major issue is procurement whereas it is actually R&D management. Those misunderstandings lead to wrong conclusions and inappropriate recommendations. In addition, there are some errors of fact, and some of the assertions are based on statistically unsubstantiated surveys."

Our evaluation

We agree that a multiprogram laboratory such as Argonne is a complex institution. We did not, however, evaluate technical oversight of Argonne's many complex activities. Rather, we looked at the broader management aspects of how effectively and efficiently DOE shapes Argonne's role and manages its contractor selection process. From this point of view, we disagree with DOE about how it should conduct its extend or compete decision process and direct Argonne's work.

Contrary to DOE's comment, the principal issue which we addressed on this report--the adequacy of DOE's procedures for selecting an Argonne operating contractor--is a procurement issue. The Under Secretary's October 29, 1979, determination to extend the Argonne contract illustrates this fact. Under a heading entitled "Procurement History, Future Requirements, and Long-Range Procurement Objectives," the Under Secretary stated that "The procurement objectives are to obtain excellent quality services at a reasonable cost to the Government and, where feasible, to enhance the quality and cost effectiveness of such services."

[See GAO note, p. 40.]

DOE COMMENT

"The report also fails to recognize the transitions from Atomic Energy Commission to Energy Research and Development Administration to Department of Energy. During those transitions there were complete turnovers among top Federal officials responsible for setting policy for laboratory performance. The Department of Energy had to start in October 1977 with an inherited situation and institute necessary improvements. It is easy to criticize an evolving process because the process is, by definition, imperfect. A more meaningful assessment is one which, based on a thorough understanding of the subject, determines whether or not the process is evolving in the right direction and at the right pace."

Our evaluation

The report does recognize (see pp. 1, 16, and 17) the transitions noted by DOE. The report also credits DOE with recognizing the need to assign roles for Argonne and other laboratories and establishing the institutional planning process for this purpose. We agree with DOE's comment on turnover of policy-level Federal officials. We recognize that this rapid turnover probably made it more difficult to decide Argonne's role, but we do not believe it should have been a constraint on an effective contract extend or compete decision process. We also believe the report points out areas where DOE can make additional improvements, both in its procedures for evaluating the Laboratory contractors' performances and in coordinating Argonne's work with the work performed for DOE by others. Finally, we would point out that a sound extend or compete review was especially important for Argonne in view of the repeated short contract extensions due to less than satisfactory performance.

DOE COMMENT

"Multiprogram laboratories provide sustained multidisciplinary skills to needed program areas, including the coupling of basic sciences to technologies. They possess broad capabilities in physical, chemical, nuclear, and life sciences, as well as nuclear, mechanical, electrical and other branches of engineering. They perform projects for all Assistant Secretaries in DOE, as well as programs funded by NRC, DOD, EPA, etc. They provide unique facilities for, and continuity to, long-term complex programs; and they provide strong support for diverse, high-risk technology development, including emergency response. The institutional strength of the laboratories is based primarily on the excellence of their technical staffs and their ability to marshall all of the resources of the laboratory to solve specific problems. They are also

involved in areas, such as health and safety, where other performers might be perceived to have a conflict of interest.

"These laboratories are operated and managed under contract by either academic or industrial organizations. The spectrum of activities in a typical laboratory ranges from the most fundamental research programs in the physical and life sciences to the most advanced and goal-oriented design and development plans. These activities include basic research, applied research, technology development, and systems testing and evaluation. Management of these diverse activities is a complex task requiring both administrative and technical competence. Evaluating the effectiveness of such management also requires both administrative and technical competence.

"The GAO report does not recognize these characteristics of multiprogram laboratories."

Our evaluation

We agree with DOE's characterization of the nature and purpose of multiprogram laboratories, but disagree that our report does not recognize these characteristics. The report recognizes them on pages 1, 16, 17, and 18. Furthermore, while we did not evaluate the pros and cons of using Argonne resources in new and non-traditional ways, the report also points out that DOE is using Argonne in new ways, such as administering research and development funds.

DOE COMMENT

"The multiprogram laboratories are assigned for administrative purposes to the Assistant Secretary (or Director of Energy Research) who supports the majority of the work at each laboratory. The only exception is that Argonne is assigned to Energy Research (ER) although Nuclear Energy (NE) supports more work there. This arrangement gives the cognizant Secretarial Official line management responsibility for the well-being and effectiveness of the assigned laboratories. A single process of institutional planning, coordinated at Headquarters, has been implemented as the common integrating tool for managing the multiprogram laboratories. It is through institutional planning, on a five-year basis updated annually, that each laboratory's scope of activities is defined.

"The GAO report does not take into account the role of the cognizant Secretarial Officials in overseeing the laboratories. Neither does it take into account the progress in institutional planning over the last two years."

Our evaluation

Page 11 of our report recognizes that Argonne is assigned to the Director, Office of Energy Research. Also, pages 16, 19, and 20 discuss DOE's institutional planning process at Argonne as it relates to DOE's larger consideration of how it should define the roles of each multiprogram laboratory. DOE's comment that our report does not account for progress in institutional planning is discussed in more detail later in this appendix. (See p. 37).

DOE COMMENT

"The GAO report does not take into account the complexities of the extend/compete issues relating to the [Argonne] operating contract. Neither does it recognize the essential role of the cognizant Secretarial Official (the Director of Energy Research in this case) in analyzing these issues with the Extend/Compete Review Board to arrive at a recommendation for the Under Secretary.

"The GAO report criticizes the Office of Energy Research's role in the extend/compete action as being potentially biased toward basic research. In fact, the management review and extend/compete action were team efforts with participation by all Assistant Secretaries who sponsored work at [Argonne]. The Office of Energy Research, incidentally, is responsible not only for basic research but also for the magnetic fusion program which has a large engineering component.

"The GAO report treats this entire extend/compete action as if it were applied to a contract for custodial services or for operating a manufacturing facility. The key difference is that the major performance criteria for an R&D laboratory are not quantifiable; hence the decision to extend or compete rests heavily on line management judgment. Thus, contract actions in which performance is quantifiable generally emphasize procedural aspects. Actions in which performance is not quantifiable must emphasize judgmental aspects. The GAO report fails to make this distinction."

Our evaluation

Our draft report contained a section discussing the dominance of the Argonne extend/compete review process by the Office of Energy Research. DOE's procurement office played only a minor role, as did the Office of the Assistant Secretary for Nuclear Energy--the program office with the most work at Argonne. Our concern was that dominance by the Office of Energy Research, which we said was oriented toward basic research, might bias the extend/compete decision in favor of the existing contractors--which are also basic research-oriented. When about 70 percent of Argonne's

work is applied research and engineering development funded by other program offices.

We agree that all Assistant Secretaries with work at Argonne were represented in the Argonne management review, although not nearly as well represented as the Office of Energy Research. We also acknowledge that the Office of Energy Research has a large engineering component within its magnetic fusion research and development program.

In addition, a DOE procurement directive issued after DOE's decision to extend the Argonne contract requires that DOE's program offices, procurement office, and general counsel all be represented on future extend/compete review boards which will be responsible for recommending laboratory contract actions to the Under Secretary. For these reasons, we deleted this section from the final report.

We do not agree that our report treats the Argonne extend/compete decision process as if it applied to a contract for custodial services or for operating a manufacturing facility. We agree that reaching an extend or compete decision for a large multiprogram research and development laboratory is a complex process which rests heavily on line management judgment. This is precisely why, based on our management view of DOE's extend/compete process, we concluded that DOE must develop good contractor performance evaluation criteria, periodically evaluate contractor performance using these criteria, and feed the results back to contractors. If the extend/compete decision is based on constantly changing or nebulous criteria unknown to the contractors, they will never know just what is expected of them and/or how well they are performing.

DOE COMMENT

> "DOE's procedures for selecting national laboratory operating contractors are well documented in DOE Order 4210.5 which was issued on June 25, 1980 * * *. These procedures existed in draft when the [Argonne] contract was under consideration, and they were followed by the Office of Energy Research in close coordination with the Procurement and Management Assistance Directorate. However, the decision on [Argonne] was delayed because the Director of Energy Research had some concerns about the Laboratory's potential for improving its overall performance. It was directed that a management review of [Argonne] be conducted prior to a decision on extending or competing the contract. That prototype review surfaced a number of critical issues and served to focus subsequent discussions on the future of [Argonne]. The Under Secretary also took extra time to study the issues before making a final decision. Subsequently, management reviews of other laboratories reporting to Energy Research have been performed in

advance of the Operations Office's extend/compete recommendation. Moreover, these reviews have become more than just a part of the extend/compete process. They form the basis for ongoing DOE management actions including communication with the laboratories on strengths and weaknesses identified, definition of improvement objectives, and monitoring of continuing performance.

"The GAO report looks only at the procedural aspects of the events between April and September 1979 without examining the substantive issues which underlay the actions taken in that period. All those actions were directed at putting decision makers in a position to make the best judgments on improving [Argonne's] performance.

"GAO's assertion on page 8 of the report that awarding a new [Argonne] operating contract competitively would take two to three years, conflicts directly with actual experience. If it did take two to three years, competition for a new contractor would have to begin as soon as the old contract had been extended--which is absurd. In practice, DOE Major Source Evaluation Board actions normally take nine to twelve months. Only in very rare cases have major procurement actions ever taken longer than twelve months."

Our evaluation

We are pleased that DOE has begun to conduct management reviews of other laboratories in advance of the operations office's extend/compete recommendation, and that these reviews are a basis for ongoing DOE management of the laboratories. We believe this is a significant step toward implementing our recommendations for periodic evaluations with feedback to the contractor. Additional steps DOE needs to take include defining review criteria, broadening the reviews to include overall technical and administrative performance, and formally conveying the review results to the contractors.

Regarding how long it would take to competitively award a new Argonne contract, during our review the Acting Director of DOE's Directorate for Procurement and Assistance Management told us it would take 2 to 3 years to prepare for and complete a competitive procurement; the President of the Association told us that the 18 month period stipulated between the extend or compete decision and the contract expiration date would not be enough time

to compete a laboratory contract; and DOE headquarters officials estimated that they would need 2 years to acquire a replacement contractor for another national laboratory. (See pp. 7 and 8.) Regardless of the time it would take for a competitive procurement, the fact remains that DOE made almost no effort to identify potential competitors for the Argonne contract.

DOE COMMENT

> "The GAO report states, on page 11, that DOE did not do a good job in its performance evaluation. The facts are that the Chicago Operations and Regional Office had prepared an appraisal guide at the start of [Argonne's] last contract extension (October 1977) including criteria for performance evaluation. From February 1978 through February 1979, seven programmatic and organizational appraisals were conducted in conjunction with program office representatives. In addition, letters of evaluation were requested in January 1979 from all Headquarters program offices that sponsored work at [Argonne]. These letters were all submitted by mid-March. Finally, the Headquarters review of [Argonne's] management performance was conducted between April and July 1979.
>
> "DOE believes that this set of evaluations constitutes a 'good job.' Furthermore, it is categorically untrue that DOE was not periodically evaluating the Argonne contractors' performances over the contract period as claimed by GAO on page 9."

Our evaluation

The seven appraisals referred to above were brief (approximately 2 days) reviews of the Argonne contractors' performances on selected small portions of larger programs or activities being carried out at Argonne. For example, six of the seven appraisals covered only a combined total of about $25 million in selected program activities. These appraisals were jointly conducted by one representative of the applicable DOE headquarters program office and two representatives of the Chicago Operations and Regional Office.

The letters of evaluation were prepared near the end of the Chicago Operations and Regional Office's extend/compete review. Furthermore, the results of these evaluations and the subsequent DOE headquarters management review of Argonne were not provided to the contractors until May 28, 1980--only 4 months before the contract expired. Thus, the contractors were not formally notified of DOE's views on their performances until the existing contract was about to expire.

We disagree with DOE's assertion that it was periodically evaluating the Argonne contractors' performances. As stated

on page 10, both the Chicago and the DOE headquarters review teams found that DOE needed to periodically evaluate the contractors and apprise them of the results.

DOE COMMENT

"The GAO report takes to task the continued involvement of Argonne Universities Association (AUA) in a tripartite contract with DOE. The history behind the tripartite arrangement is well documented in the book A Special Interest by Leonard Greenbaum (Ann Arbor: University of Michigan Press, 1971), and it is recommended reading for those who want an in-depth understanding of the academic politics involved. Contrary to GAO's statement on page iii, a major reason for the arrangement still exists--that of giving major Midwestern universities equal access to the Laboratory in general. Actually, the statement on page iii is contradicted * * * on page 2.

"It is in DOE's interest to encourage close ties between [Argonne] and universities. On one hand the universities benefit from access to research equipment and facilities available at the Laboratory. On the other hand, [Argonne] benefits from the exchange of ideas with university researchers. However, these close ties will not occur simply by inserting appropriate language in the [Argonne] operating contract (as suggested on page 15 of the GAO report). Someone has to play an active role in bringing [Argonne] and the universities together. That someone is AUA. There is nothing inconsistent (as claimed on page 15 of the GAO report) about the purpose of AUA being to facilitate member university access to [Argonne] and DOE's desire to increase the Laboratory-university interaction. One reason for extending the tripartite contract was to see if AUA could, with adequate funding, improve and increase this interaction."

Our evaluation

DOE errs in stating that our report takes to task the Association's continuance as an Argonne contractor. Our report recommends that DOE end the two-contractor arrangement. We took no position on who should be the single Argonne operating contractor.

We have no disagreement with DOE's comments on the mutual benefits of close ties between Argonne and universities. And we agree that someone has to play an active role in bringing Argonne and the universities together. We disagree, however, that two contractors are necessary to manage the Laboratory and promote its ties with universities. As stated in our report, Argonne is the only DOE multiprogram laboratory operated

by two contractors. The fact remains that the arrangement has caused dissatisfaction and friction since its inception in 1966, and DOE's headquarters management review team found that neither of the two contractors were performing many of the duties assigned to them in the contract.

DOE commented that the history of the two-contractor arrangement is documented in a book recommended for an in-depth understanding of the academic politics involved. Our objective was to evaluate the process DOE used in extending the Argonne contract for the period October 1, 1980, to September 30, 1983. Thus, we did not consider the academic politics of the early-to-mid 1960s germane to our evaluation.

We changed the wording in our report to reflect DOE's comment that a major initial and continuing reason for the two-party contract is giving major midwestern universities general access to Argonne. We wonder, however, why none of the other 11 DOE national laboratories have a two-contractor arrangement for this purpose.

DOE COMMENT

> "The GAO report misinterprets the management allowances for AUA and the University of Chicago as fees for profit or incentive. The allowances are actually ceilings on reimbursable expenses incurred by the contractors in fulfilling their responsibilities under the contract. In negotiating the contract extension, DOE increased AUA's allowance to provide for greater involvement of the universities with [Argonne]. The increases also took into account the fact that AUA's allowance had not been changed since 1971, and the University of Chicago's allowance had not been increased since FY 1967. Part of the AUA increase will cover increased operating costs associated with staff salaries and expenses for visiting committees. The latter are considered essential to the peer review aspect of evaluating laboratory performance. In addition, DOE expects AUA to become more active in familiarizing university researchers with [Argonne] facilities and to increase the frequency of research personnel exchanges with the universities."

Our evaluation

We have changed our report to make clear that the contractor's management allowances are not fees for profit or incentives.

The remainder of DOE's comments are not responsive to the related discussion in our report. The thrust of that discussion is that DOE agreed to increase the contractors' management allowances without adequate supporting documentation, and despite findings that neither contractor was performing as required. The fact that

the allowances had not been increased since 1967 and 1971 is not, in our view justification for increasing them in the absence of adequate supporting cost data and a clear understanding by all parties on what the contract requires of the contractors.

DOE COMMENT

"The GAO report expresses some misunderstanding about DOE's definition of [Argonne's] role. At the time the management review of [Argonne] was performed (April-July 1979), the previous laboratory director had resigned, and the successor had not yet arrived. There was a lack of direction at the Laboratory, and the review team was concerned about the fundamental issue of whether [Argonne] should do both basic research and technology development or be limited to the former. Since [Argonne] was at a transition point, it was left to DOE top management to decide whether [Argonne's] broad role should continue in basic research and technology development or be more limited.

"In the exchange of correspondence from October 1979 to January 1980 between the new Laboratory Director and DOE Headquarters (already provided to GAO), it was agreed that [Argonne's] broad role would continue in both areas. Responding to criticism in the July 1979 Management Review report, the Laboratory Director set about to improve the management of technology development at [Argonne]. The contract extension of three instead of five years lent some urgency to these actions.

"Having reached agreement with DOE on the broad role of [Argonne], the Laboratory Director then submitted a more detailed proposal in the 1980 Institutional Plan on how [Argonne] planned to implement that role. The Institutional Plan was discussed with the Director of Energy Research in May 1980, and the final version was approved by the Under Secretary in October. The Plan, which covers five fiscal years and is updated annually, is standardized for all DOE multiprogram laboratories.

"The GAO report ignores this role definition through the institutional planning process and goes on to assert that the scope of work at [Argonne] is determined by the Laboratory rather than by DOE (pages 20 and 21). According to GAO, DOE's main function in institutional planning is to specifiy manpower ceilings. Actually, all work at DOE laboratories is covered by the Work Proposal and Authorization System (WPAS). A WPAS form is submitted to DOE for each task to be performed. The extent of DOE involvement in specifying details of the task depends on the nature of the work. In technology development the details are typically negotiated

between laboratory and DOE program offices before the formal proposal submission. These negotiations are specific as to schedules, costs, and deliverables. In basic research the negotiations are much less specific, involving levels of effort and general areas of investigation.

"A fundamental point must be noted here: Technical staff at DOE's laboratories are there because of their expertise and are expected to propose appropriate areas of investigation to DOE. It is not DOE's intent that the laboratories wait passively to respond to omniscient task direction from DOE. Failure to understand this point is a serious shortcoming of the GAO report."

Our evaluation

The thrust of DOE's comment is that our report both reflects misunderstanding about DOE's definition of Argonne's role and ignores institutional planning. We disagree with these comments. As noted on page 19, in a May 1978 report, we criticized DOE's (then) new institutional planning process because DOE intended to permit laboratory contractors to develop their own plans. This is what occurred with the Argonne plan, and is essentially what we are again criticizing in this report. As we stated on page 24, DOE--rather than the Laboratory contractors--should shape Argonne's broad role in the context of effectively coordinating research and development among national laboratories, the private sector, and the research community.

The institutional planning process for Argonne is mentioned on pages 16, 19, 20, and 23. We recognize that the discussion is brief and does not provide details on how the Argonne plan was prepared. On the other hand, the major issue under discussion is not institutional planning. It is the larger issue of who should lead the planning effort--DOE or Argonne. We found that leadership in developing the Argonne plan rested with Laboratory management rather than with DOE.

We do not believe, as claimed by DOE, that DOE's main function in institutional planning is to specify manpower ceilings. What our report says is that this was the only initial substantive guidance DOE provided to Laboratory management to control its development of the Argonne plan.

We do agree with DOE's comment that laboratory technical staffs are expected to propose appropriate areas of investigation to DOE. Our concern, as we reported earlier in our May 1978 report, is that this bottom-up approach--in the absence of adequate DOE definition of a laboratory's role--leads to piecemeal assignment of tasks to the laboratory. By multiplying this by 12

national laboratories, one can see the importance of a top-down approach to managing and directing the laboratories' work. While we agree that Argonne's staff should be expected to propose work tasks and areas of investigation, DOE may not be able to effectively evaluate these proposals in the absence of a clear DOE definition of Argonne's role in meeting DOE's many program objectives.

DOE COMMENT

"The GAO report makes a statement on page 21 regarding a major $270 million renovation program to take place at [Argonne] along with the recommendation on page 25 that DOE suspend any planned renovation or expansion of [Argonne] facilities. It appears that the logic of this kind of action is more punitive than it is constructive.

"The 'renovation' program is actually a long-range effort to revitalize general purpose facilities at [Argonne]. The program will replace facilities which have deteriorated because of age, changing programs and excessive use. Under the guidelines issued by the program sponsors, multiple-use laboratory buildings, roads, railroad tracks, shops, and industrial facilities require replacement regardless of the future mission to be performed at [Argonne]. To suspend action in this area would have a severe impact on the future ability of [Argonne] to perform any mission and would definitely impact on the maintenance and operations resources required to keep the Laboratory running. As long as DOE requires that [Argonne] be kept operating in other than a caretaker status, the consistent, systematic rehabilitation of support facilities is a normal cost of doing business which should be continued regardless of which programs or contractors are utilized at the Laboratory.

"DOE recognizes the importance of coordinating program facility needs with Institutional Plans, and this approach is already being practiced. It will soon be formalized in a DOE directive on Site Development and Facilities Utilization. This directive will require the laboratories to locate, size and phase construction of facilities with established long-range programmatic needs.

"Energy conservation projects at [Argonne] should be continued because the renovations to reduce energy are required regardless of the direction or management of the Laboratory if they are to reduce the large increases projected in operating costs."

Our evaluation

We do not agree that suspension of planned renovation or expansion of Argonne facilities until DOE establishes the Laboratory's

role is punitive. As discussed in our report and above, Argonne's role--to the extent it is spelled out in the institutional plan--has largely been determined by the Laboratory's management.

We do not accept DOE's position that the Argonne institutional plan represents DOE's statement of Argonne's future role. In this regard, we are encouraged that DOE intends to require Argonne and other laboratories to integrate facilities plans with established long-range programmatic needs. As indicated above, however, what we have yet to see is a statement initiated and developed by DOE--not Argonne management--on what the future holds for Argonne in terms of level of effort, areas of concentration, and the major facilities (including major renovation of existing facilities) necessary to support the statement.

DOE COMMENT

> "The GAO report attributes several assertions to 'DOE officials,' 'contractor officials,' and 'laboratory officials.' Many of these assertions are based on misinformation, and more care should have been devoted to checking their validity. For example, the statement on page 12 that the Argonne contractors have come to view the short extensions as a way of life is categorically denied by at least one of the contractors (AUA)."

Our evaluation

We have changed our report to more precisely reflect the position titles of the DOE, contractor, and Laboratory officials whose views are presented on matters discussed in our report. For the most part, the "officials" views reflected in our report are from high levels of DOE, contractor, and Laboratory management. The example DOE noted above is a case in point. While we inadvertently attributed the "way of life" characterization of repetitive short contract extensions to officials of both contractors, in fact that view was given to us by both the University's Vice President for Sponsored Programs and its Vice President for Business and Finance.

We interviewed the following senior-level officials of DOE, the contractors, and the Laboratory, in addition to middle-level officials, in gathering evidence for our report:

--the former Director, Office of Energy Research and subsequently Under Secretary of DOE;

--Acting Director, Office of Energy Research;

APPENDIX I

--Director and Deputy Director, DOE Directorate of Procurement and Assistance Management;

--Deputy and four Assistant Managers of the Chicago Operations and Regional Office;

--Vice President for Sponsored Programs and Vice President for Business and Finance, University of Chicago;

--President, Argonne Universities Association; and

--the two Deputy Directors, the Assistant Director, and the five Associate Directors, Argonne National Laboratory.

We believe the above officials represent a credible group. Furthermore, to a large extent the views of these officials on matters discussed in our report were corroborated by the others.

GAO note: Page references in the DOE comments reproduced in this appendix have been changed to conform to page numbers in our final report.

APPENDIX II

Department of Energy
Washington, D.C. 20585

MAY 11 1981

Mr. J. Dexter Peach
Energy and Minerals Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

The Department of Energy (DOE) appreciates the opportunity to review and comment on the GAO draft report entitled "Argonne National Laboratory: A Case Study of the Department of Energy's Methods for Selecting National Laboratory Operating Contractor." The report reflects some general misunderstandings regarding the nature of a complex R&D institution such as a DOE multiprogram laboratory, the role played by laboratory management, the indicators of excellence in such an institution, and the judgment factors employed by Federal officials in assessing its future productivity. Furthermore, the report assumes that the major issue is procurement whereas it is actually R&D management. Those misunderstandings lead to wrong conclusions and inappropriate recommendations. In addition, there are some errors of fact, and some of the assertions are based on statistically unsubstantiated surveys.

The report also fails to recognize the transitions from Atomic Energy Commission to Energy Research and Development Administration to Department of Energy. During those transitions there were complete turnovers among top Federal officials responsible for setting policy for laboratory performance. The Department of Energy had to start in October 1977 with an inherited situation and institute necessary improvements. It is easy to criticize an evolving process because the process is, by definition, imperfect. A more meaningful assessment is one which, based on a thorough understanding of the subject, determines whether or not the process is evolving in the right direction and at the right pace.

The Department's comments, organized by subject area, are enclosed. In addition, a copy of the draft report, annotated to point out various inaccuracies, is being provided directly to the GAO audit staff. DOE appreciates the opportunity to comment on this draft report and trusts that GAO will consider the comments in preparing the final version.

Sincerely,

P. Marshall Ryan
Controller

Enclosure

[See GAO note, p. 47.

COMMENTS ON GAO DRAFT REPORT
"Argonne National Laboratory: A Case
Study of the Department of Energy's Methods
for Selecting National Laboratory Operating Contractor"

Nature and Purpose of DOE Multiprogram Laboratories

Multiprogram laboratories provide sustained multidisciplinary skills to needed program areas, including the coupling of basic sciences to technologies. They possess broad capabilities in physical, chemical, nuclear, and life sciences, as well as nuclear, mechanical, electrical and other branches of engineering. They perform projects for all Assistant Secretaries in DOE, as well as programs funded by NRC, DOD, EPA, etc. They provide unique facilities for, and continuity to, long-term complex programs; and they provide strong support for diverse, high-risk technology development, including emergency response. The institutional strength of the laboratories is based primarily on the excellence of their technical staffs and their ability to marshall all of the resources of the laboratory to solve specific problems. They are also involved in areas, such as health and safety, where other performers might be perceived to have a conflict of interest.

These laboratories are operated and managed under contract by either academic or industrial organizations. The spectrum of activities in a typical laboratory ranges from the most fundamental research programs in the physical and life sciences to the most advanced and goal-oriented design and development plans. These activities include basic research, applied research, technology development, and systems testing and evaluation. Management of these diverse activities is a complex task requiring both administrative and technical competence. Evaluating the effectiveness of such management also requires both administrative and technical competence.

The GAO report does not recognize these characteristics of multiprogram laboratories.

DOE Headquarters Responsibilities for Multiprogram Laboratories

The multiprogram laboratories are assigned for administrative purposes to the Assistant Secretary (or Director of Energy Research) who supports the majority of the work at each laboratory. The only exception is that Argonne National Laboratory (ANL) is assigned to Energy Research (ER) although Nuclear Energy (NE) supports more work there. This arrangement gives the cognizant Secretarial Official line management responsibility for the well-being and effectiveness of the assigned laboratories. A single process of institutional planning, coordinated at Headquarters, has been implemented as the common integrating tool for managing the multiprogram laboratories. It is through institutional planning, on a five-year basis updated annually, that each laboratory's scope of activities is defined.

The GAO report does not take into account the role of the cognizant Secretarial Officials in overseeing the laboratories. Neither does it take into account the progress in institutional planning over the last two years.

Extend/Compete Issues

DOE expects the laboratories to be in the forefront of science and technology in support of DOE's mission. Therefore, the basic question to be asked by line management in making an extend/compete decision is: Will a change in contractors result in improved performance by the laboratory? The question is simple, but the answer involves many complex issues and is highly subjective.

In seeking the answer it is apparent that there is no quantitative measure of laboratory performance. Ultimately the answer depends on peer review, general esteem by the scientific community, individual achievements (e.g. Nobel Prizes received), and evaluation by DOE program managers. The Extend/Compete Review Board must weigh all these factors in deciding whether or not a change in contractors is warranted. In the case of ANL, the situation was complicated by the fact that at least one-third of the Laboratory's efforts were in technology and engineering development, requiring a different management approach than for basic research. The pros and cons for various options are documented on pages 16-20 in the Final Report on Management Review of Argonne National Laboratory, dated July 9, 1979, which GAO already has.

The GAO report does not take into account the complexities of the extend/compete issues relating to the ANL operating contract. Neither does it recognize the essential role of the cognizant Secretarial Official (the Director of Energy Research in this case) in analyzing these issues with the Extend/Compete Review Board to arrive at a recommendation for the Under Secretary.

The GAO report criticizes the Office of Energy Research's role in the extend/compete action as being potentially biased toward basic research (page 14). In fact, the management review and extend/compete action were team efforts with participation by all Assistant Secretaries who sponsored work at ANL. The Office of Energy Research, incidentally, is responsible not only for basic research but also for the magnetic fusion program which has a large engineering component.

The GAO report treats this entire extend/compete action as if it were applied to a contract for custodial services or for operating a manufacturing facility. The key difference is that the major performance criteria for an R&D laboratory are not quantifiable; hence the decision to extend or compete rests heavily on line management judgment. Thus, contract actions in which performance is quantifiable generally emphasize procedural aspects. Actions in which performance is not quantifiable must emphasize judgmental aspects. The GAO report fails to make this distinction.

In the case of ANL, the decision to extend was motivated in part by the judgment that there was more to be gained by giving the new Laboratory Director a chance to make improvements rather than by seeking a new contractor. Subsequent events have proven the correctness of that judgment (see Congressional Record, March 12, 1981, S2117, "The Work of Dr. Walter E. Massey of Argonne National Laboratory.")

Extend/Compete Procedures

DOE's procedures for selecting national laboratory operating contractors are well documented in DOE Order 4210.5 which was issued on June 25, 1980 (referenced on page 5 of the GAO report). These procedures existed in draft when the ANL contract was under consideration, and they were followed by the Office of Energy Research in close coordination with the Procurement and Management Assistance Directorate. However, the decision on ANL was delayed because the Director of Energy Research had some concerns about the Laboratory's potential for improving its overall performance. It was directed that a management review of ANL be conducted prior to a decision on extending or competing the contract. That prototype review surfaced a number of critical issues and served to focus subsequent discussions on the future of ANL. The Under Secretary also took extra time to study the issues before making a final decision. Subsequently, management reviews of other laboratories reporting to Energy Research have been performed in advance of the Operations Office's extend/compete recommendation. Moreover, these reviews have become more than just a part of the extend/compete process. They form the basis for ongoing DOE management actions including communication with the laboratories on strengths and weaknesses identified, definition of improvement objectives, and monitoring of continuing performance.

The GAO report looks only at the procedural aspects of the events between April and September 1979 without examining the substantive issues which underlay the actions taken in that period. All those actions were directed at putting decision makers in a position to make the best judgments on improving ANL's performance.

GAO's assertion on page 8 of the report that awarding a new ANL operating contract competitively would take two to three years, conflicts directly with actual experience. If it did take two to three years, competition for a new contractor would have to begin as soon as the old contract had been extended--which is absurd. In practice, DOE Major Source Evaluation Board actions normally take nine to twelve months. Only in very rare cases have major procurement actions ever taken longer than twelve months.

Evaluations of ANL

The GAO report states, on page 11, that DOE did not do a good job in its performance evaluation. The facts are that the Chicago Operations and Regional Office had prepared an appraisal guide at the start of ANL's last contract extension (October 1977) including criteria for performance evaluation. From February 1978 through February 1979, seven programmatic and organizational appraisals were conducted in conjunction with program office representatives. In addition, letters of evaluation were requested in January 1979 from all Headquarters program offices that sponsored work at ANL. These letters were all submitted by mid-March. Finally, the Headquarters review of ANL's management performance was conducted between April and July 1979.

DOE believes that this set of evaluations constitutes "a good job." Furthermore, it is categorically untrue that "DOE was not periodically evaluating the Argonne contractors' performances over the contract period" as claimed by GAO on page 9.

AUA and the Tripartite Contract

The GAO report takes to task the continued involvement of Argonne Universities Association (AUA) in a tripartite contract with DOE. The history behind the tripartite arrangement is well documented in the book A Special Interest by Leonard Greenbaum (Ann Arbor: University of Michigan Press, 1971), and it is recommended reading for those who want an in-depth understanding of the academic politics involved. Contrary to GAO's statement on page iii, a major reason for the arrangement still exists--that of giving major Midwestern universities equal access to the Laboratory in general. Actually, the statement on page iii is contradicted by the last sentence on page 2.

It is in DOE's interest to encourage close ties between ANL and universities. On one hand the universities benefit from access to research equipment and facilities available at the Laboratory. On the other hand, ANL benefits from the exchange of ideas with university researchers. However, these close ties will not occur simply by inserting appropriate language in the ANL operating contract (as suggested on page 15 of the GAO report). Someone has to play an active role in bringing ANL and the universities together. That someone is AUA. There is nothing inconsistent (as claimed on page 15 of the GAO report) about the purpose of AUA being to facilitate member university access to ANL and DOE's desire to increase the Laboratory-university interaction. One reason for extending the tripartite contract was to see if AUA could, with adequate funding, improve and increase this interaction.

Management Allowances

The GAO report misinterprets the management allowances for AUA and the University of Chicago as fees for profit or incentive. The allowances are actually ceilings on reimbursable expenses incurred by the contractors in fulfilling their responsibilities under the contract. In negotiating the contract extension, DOE increased AUA's allowance to provide for greater involvement of the universities with ANL. The increases also took into account the fact that AUA's allowance had not been changed since 1971, and the University of Chicago's allowance had not been increased since FY 1967. Part of the AUA increase will cover increased operating costs associated with staff salaries and expenses for visiting committees. The latter are considered essential to the peer review aspect of evaluating laboratory performance. In addition, DOE expects AUA to become more active in familiarizing university researchers with ANL facilities and to increase the frequency of research personnel exchanges with the universities.

Role of ANL

The GAO report expresses some misunderstanding about DOE's definition of ANL's role. At the time the management review of ANL was performed (April-July 1979), the previous laboratory director had resigned, and the successor had not yet arrived. There was a lack of direction at the Laboratory, and the review team was concerned about the fundamental issue of whether ANL should do both basic research and technology development or be limited to the former. Since ANL was at a transition point, i was left to DOE top management to decide whether ANL's broad role should continue in basic research and technology development or be more limited.

In the exchange of correspondence from October 1979 to January 1980 between the new ANL Laboratory Director and DOE Headquarters (already provided to GAO), it was agreed that ANL's broad role would continue in both areas. Responding to criticism in the July 1979 Management Review report, the Laboratory Director set about to improve the management of technology development at ANL. The contract extension of three instead of five years lent some urgency to these actions.

Having reached agreement with DOE on the broad role of ANL, the Laboratory Director then submitted a more detailed proposal in the 1980 Institutional Plan on how ANL planned to implement that role. The Institutional Plan was discussed with the Director of Energy Research in May 1980, and the final version was approved by the Under Secretary in October. The Plan, which covers five fiscal years and is updated annually, is standardized for all DOE multiprogram laboratories.

The GAO report ignores this role definition through the institutional planning process and goes on to assert that the scope of work at ANL is determined by the Laboratory rather than by DOE (pages 20 and 21). According to GAO, DOE's main function in institutional planning is to specify manpower ceilings. Actually, all work at DOE laboratories is covered by the Work Proposal and Authorization System (WPAS). A WPAS form is submitted to DOE for each task to be performed. The extent of DOE involvement in specifying details of the task depends on the nature of the work. In technology development the details are typically negotiated between laboratory and DOE program offices before the formal proposal submission. These negotiations are specific as to schedules, costs, and deliverables. In basic research the negotiations are much less specific, involving levels of effort and general areas of investigation.

A fundamental point must be noted here: Technical staff at DOE's laboratories are there because of their expertise and are expected to propose appropriate areas of investigation to DOE. It is not DOE's intent that the laboratories wait passively to respond to omniscient task direction from DOE. Failure to understand this point is a serious shortcoming of the GAO report.

Facility Needs at ANL

The GAO report makes a statement on page 21 regarding a major $270 million renovation program to take place at ANL along with the recommendation on page 25 that DOE suspend any planned renovation or expansion of ANL facilities. It appears that the logic of this kind of action is more punitive than it is constructive.

The "renovation" program is actually a long-range effort to revitalize general purpose facilities at ANL. The program will replace facilities which have deteriorated because of age, changing programs and excessive use. Under the guidelines issued by the program sponsors, multiple-use laboratory buildings, roads, railroad tracks,

shops, and industrial facilities require replacement regardless of the future mission to be performed at ANL. To suspend action in this area would have a severe impact on the future ability of ANL to perform any mission and would definitely impact on the maintenance and operations resources required to keep the Laboratory running. As long as DOE requires that ANL be kept operating in other than a caretaker status, the consistent, systematic rehabilitation of support facilities is a normal cost of doing business which should be continued regardless of which programs or contractors are utilized at the Laboratory.

DOE recognizes the importance of coordinating program facility needs with Institutional Plans, and this approach is already being practiced. It will soon be formalized in a DOE directive on Site Development and Facilities Utilization. This directive will require the laboratories to locate, size, and phase construction of facilities with established long-range programmatic needs.

Energy conservation projects at ANL should be continued because the renovations to reduce energy are required regardless of the direction or management of the Laboratory if they are to reduce the large increases projected in operating costs.

Miscellaneous Comments

Incorrect Data: The digest and introduction in the GAO report should be corrected to show that DOE's 12 multiprogram laboratories (there are many other single-purpose laboratories) have about 50,000 employees, facilities totaling about $4.2 billion in initial capital investment, and a DOE operating budget of over $3 billion annually.

Number of Review Teams: The GAO report refers on pages ii, 9, and 11 to two DOE Headquarters review teams. There was only one. The "team" that recommended contract extension was actually the Chicago Operations and Regional Office which prepared the procurement package as part of its normal functions as contract administrator.

Survey Methodology: The GAO report attributes several assertions to "DOE officials," "contractor officials," and "laboratory officials." Many of these assertions are based on misinformation, and more care should have been devoted to checking their validity. For example, the statement on page 12 that "the Argonne contractors have come to view the short extensions as a way of life" is categorically denied by at least one of the contractors (AUA).

GAO note: Page references in this appendix have been changed to correspond to page numbers in this final report.

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