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Department of Energy's Consolidation of Information Processing Activities Needs More Attention. EMD-78-60; B-178205. May 3, 1978. 27 pp. + 4 appendices (18 pp.).

Report to Rep. Jack Brooks, Chairman, House Committee on Government Operations; by Elmer B. Staats, Comptroller General.

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Organization Concerned: Department of Energy.
Congressional Relevance: House Committee on Government Operations. Rep. Jack Brooks.
Authority: Department of Energy Organization Act (P.L. 95-91). Brooks Act (P.L. 89-306).

The consolidation of Federal energy programs in the Department of Energy (DOE) necessitates the defining and consolidating of information needs and resources. Findings/Conclusions: The DOE has not done enough to consolidate and organize its information processing resources. The Department has (1) divided the responsibility for the control of information processing activities among three organizations, (2) not pinpointed responsibility for control of information resources at contractor sites, (3) not established mechanisms to coordinate controls over acquisition and use of computer equipment with development of computer programs, and (4) not conducted a detailed agencywide analysis of its information needs and resources. The Department's control over computer equipment acquisitions could be the starting point for more integrated controls over information collection and processing, but some deficiencies should be corrected. Recommendations: The Secretary of Energy should take the following actions to improve the effectiveness of the Department's information management: define departmentwide objectives for the collection, analysis, and reporting of information by DOE and specify responsibilities of DOE components for achieving these objectives; initiate and actively support a departmentwide indepth analysis of DOE's information needs and resources; enlarge the responsibilities of the Deputy Secretary of Energy to include broad responsibility for all aspects of DOE's information activities; issue interim procedures until the departmentwide analysis is completed to insure that no actions taken in that period will restrict DOE's opportunities for consolidation; and issue procedures requiring DOE to request authority from the General Services Administration before authorizing contractors to acquire computer equipment and requiring DOE to coordinate procurement of small computer equipment. The Congress should require the

Secretary of Energy to annually report to it actions the Secretary is taking to define and organize information processing resources and requirements. (SC)

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REPORT BY THE

Comptroller General

RELEASED 5/18/78

OF THE UNITED STATES

Department Of Energy's Consolidation Of Information Processing Activities Needs More Attention

The House Committee on Government Operations asked GAO to review the Department of Energy's information processing activities.

The Department has not done enough to organize and consolidate the collection, processing, and reporting of information. The Department has not defined the objectives nor assigned responsibility for agencywide management of information activities.

The Department also has not started an indepth analysis of its information needs and resources. Such a study must be done if the Department's information resources are to be used effectively.

This report presents several recommendations to the Secretary of Energy and to the Congress to improve management of information-related activities funded by the Department.

B-178205

The Honorable Jack Brooks, Chairman
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

In response to your June 2, 1977, request, here is our
report on the Department of Energy's organization and con-
solidation of information processing activities. As you ad-
vised, we did not take the additional time needed to obtain
written agency comments on the matters discussed in this
report.

As arranged with your office, unless you publicly an-
nounce its contents earlier, we plan no further distribution
of this report until 30 days from the date of this report.
At that time we will send copies to interested parties and
make copies available to others upon request.

Sincerely yours,

Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT
TO THE COMMITTEE ON
GOVERNMENT OPERATIONS
House of Representatives

DEPARTMENT OF ENERGY'S
CONSOLIDATION OF INFORMATION
PROCESSING ACTIVITIES NEEDS
MORE ATTENTION

D I G E S T

Information processing resources consist of
the data collected, the computer instruc-
tions ("programs") written to process data,
and the information generated by computers,
plus the people and equipment used to proc-
ess information. On June 2, 1977, the
Chairman, House Committee on Government
Operations, asked GAO to review the Depart-
ment's consolidation of these resources.

The Department of Energy has not done
enough to organize and consolidate these
resources. For example, the Department

--Has divided the responsibility for con-
   trol of information processing activi-
   ties among three organizations. Each
   organization has developed objectives
   for its specific area of responsibility.
   The Secretary has not, however, issued
   or approved objectives for a coordinated,
   Department-wide information management
   program, nor approved a plan outlining
   the Department's overall strategy for
   information management. (See pp. 10 and
   11.)

--Has not pinpointed responsibility for
   control of information resources at con-
   tractor sites. The Department's scien-
   tific research and nuclear weapons pro-
   grams are carried out by contractors at
   laboratories and production facilities
   throughout the country. Collectively,
   these contractors operate about 90 per-
   cent of the Department's computers. The
   Department, however, has not developed
   policies and procedures which prevent
   program divisions from using contractors
   to circumvent agency controls. This
   could lead to development of duplicative
   information collection and processing
   systems. (See pp. 11 and 12.)

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EMD-78-60
(30041)

--Has not established mechanisms to
coordinate controls over acquisition and
use of computer equipment with develop-
ment of computer programs at either
headquarters or contractors' installa-
tions (See p. 12.)

--Has not conducted a detailed agencywide
analysis of its information needs and
resources. Its approach toward con-
solidation of information activities is
piecemeal and fragmented. (See pp. 12
through 15.)

Without agencywide integrated and coordi-
nated controls, duplication, waste, and
inefficient use of information resources
will occur.

The Department's control over computer
equipment acquisitions could be the starting
point for more integrated, coordinated con-
trols over all information collection and
processing activities but the following
deficiencies should be corrected.

--The Department does not request authori-
ty from the General Services Administra-
tion before authorizing contractors to
acquire computer equipment. These acqui-
sitions should be included in the General
Services Administration's Government-wide
computer acquisition program. (See pp.
18 through 20.)

--The Department does not have sufficient
staff to adequately review proposed
acquisitions. (See pp. 20 and 21.)

--The Department needs to coordinate and
better control the acquisition of small
computers. (See pp. 21 through 23.)

Only the Secretary or the Deputy Secretary
has the authority and the Department-wide
perspective to develop and implement a total
information management program. The Secre-
tary needs to enlarge the information proc-
essing related responsibilities of the
Deputy Secretary to include responsibility
for developing and implementing such a

program and create a Department-wide
advisory board or council to assist the
Deputy Secretary.

RECOMMENDATIONS TO THE SECRETARY OF ENERGY

To improve the effectiveness of the Depart-
ment's information management, the Secre-
tary of Energy should

--(1) Define Department-wide objectives for
the collecting, analyzing, and reporting
of information by the Department, (2) spe-
cify responsibilities of Department compo-
nents for achieving these objectives,
and (3) explain the relationships among
the Department's program and information
related objectives.

--Initiate and actively support a depart-
mentwide indepth analysis of the Depart-
ment's information needs and resources.

--Enlarge the responsibilities of the Depu-
ty Secretary of Energy to include respon-
sibility for (1) developing and imple-
menting departmentwide information-related
policies, (2) directing the Department-
wide analysis and consolidation of infor-
mation activities, (3) managing informa-
tion related activities of Department
contractors, and (4) coordinating the
Department's activities regarding compu-
ter equipment acquisitions with develop-
ment of computer programs.

--Issue interim procedures requiring that
computer acquisitions, program develop-
ment, or data collection activities
started before the Department-wide
analysis is completed be reviewed by the
Deputy Secretary or his designee to in-
sure that these proposed changes will not
restrict the Department's opportunities
for consolidation.

--Assign additional qualified computer
review staff to Department program and
staff divisions, the Director of Admin-
istration, and operations offices.

--Issue procedures requiring the Department
  to (1) request authority from the General
  Services Administration before author-
  izing contractors to acquire computer
  equipment and (2) coordinate procurement
  of small computer equipment to take full
  advantage of potential quantity discounts.

RECOMMENDATIONS TO THE CONGRESS

The Department of Energy Organization Act
was written because the existing structure
of Federal energy programs was too frag-
mented to develop coordinated near- and
long-term solutions to the Nation's serious
energy problems. If it is to succeed, the
Department must employ new and creative
ways of managing and coordinating the Na-
tion's energy programs.

Because effective collection and processing
of information is so important to the De-
partment achieving these goals set for it
by the Congress, the Congress should require
the Secretary of Energy to annually report
to it actions the Secretary is taking to
define and organize information processing
resources and requirements.

The General Services Administration is
planning to discuss with Department of
Justice officials a 1975 Department deci-
sion which limits the General Services
Administration's authority over contractor-
operated equipment. To effectively coor-
dinate the Government's computer acquisi-
tions, the General Services Administration
should review contractors' acquisitions of
computers. If the Department of Justice
does not agree to modify its 1975 decision
to show that the General Services Adminis-
tration has this authority, the Congress
may have to modify Public Law 89-306.

At the Committee's request, GAO did not
take the additional time to obtain written
comments from the Department.

C o n t e n t s

ABBREVIATIONS

ADP   automatic data processing
DOE   Department of Energy
EIA   Energy Information Administration
ERDA   Energy Research and Development
           Administration
FEA   Federal Energy Administration
GAO   General Accounting Office
GSA   General Services Administration

CHAPTER 1

INTRODUCTION

The Department of Energy (DOE), created on October 1, 1977, represents a major reorganization of the Government's energy programs. By combining the responsibilities of several agencies and administrations into one department, the Congress has provided the Nation with a coordinated, integrated framework for resolving the most serious of our energy problems. The decisions DOE makes and the quality of information available to make decisions are critical to the solution of these problems.

On June 2, 1977, the Chairman, House Committee on Government Operations, asked us to review DOE's information processing activities. At the time, the Congress was combining the functions of the Energy Research and Development Administration (ERDA), the Federal Energy Administration (FEA), the Federal Power Commission, and scattered energy programs of several agencies into DOE. The Chairman believes that DOE's efforts in integrating and consolidating information processing activities of its various components will greatly influence DOE's ability to meet the overall goals established for it by the Congress. This report is a response to the Chairman's June 2, 1977, request and subsequent agreements reached with his office.

CONSOLIDATION IS NOT AN EASY TASK

Consolidating Federal energy programs creates numerous opportunities for improved sharing and for better control of resources. Similar administrative and program requirements of the once separate agencies can be merged and resources can be shared to better meet new requirements. Defining and consolidating information needs and resources, however, is difficult and time consuming. Each of the organizations merged into a new department brings its resources and a history of how it used these resources to meet its specific needs. DOE will need active top management support and conscientious, departmentwide planning and analysis if it is to develop a cohesive, coherent unit from these once separate organizations.

The remaining chapters of this report discuss

--DOE's organization and information processing resources;

--the need for a coordinated agencywide program to manage these resources;

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--weaknesses in DOE's control of computer acquisitions; and

--our conclusions, observations, and recommendations.

CHAPTER 2

DOE'S ORGANIZATION AND INFORMATION

PROCESSING RESOURCES

The Department of Energy Organization Act (Public Law 95-91) established DOE to coordinate and effectively administer Federal energy policy and programs. This mission and DOE's internal organization will have a direct impact on the type of information DOE decisionmakers will need. DOE's internal organization will also greatly influence how DOE marshals its information resources to meet these needs. This chapter discusses the organization and information processing resources of DOE.

DOE'S ORGANIZATION

DOE is a large, complex, and geographically dispersed organization. The Organization Act requires DOE to have

--a Secretary, a Deputy and an Under Secretary, and a General Counsel;

--8 Assistant Secretaries responsible for 11 major departmental functions;

--an Energy Information Administration;

--a Federal Energy Regulatory Commission and an Economic Regulatory Administration;

--an Office of Energy Research, a Leasing Liaison Committee, and an Office of Inspector General.

The Secretary of Energy has assigned responsibility for research, development, demonstration, and application of energy technologies to three Assistant Secretaries and to the Director, Office of Energy Research. The remaining five Assistant Secretaries and various staff offices are responsible for administrative, procurement, intergovernmental, international aspects of DOE's daily activities, and DOE's defense-related programs. As we discuss in more detail in chapter 3, responsibility for departmentwide policy and control of information resources has not been defined within the department.

Field activities are an integral part of DOE's total organization and include:

--Offices in each of the 10 Federal regions responsible for DOE's regulatory and compliance programs.

--Representatives of the Secretary in each Federal region responsible for working with State governments, businesses, labor unions, and consumer groups.

--Eight administrative-oriented operations offices, 5 energy research centers, 3 specialized data analysis offices, and 52 contractor-operated laboratories and production facilities.

--Five power marketing administrations.

DOE'S COMPUTER RESOURCES

DOE manages a large segment of the Government's data processing resources. With slightly less than 2,150 computer systems, DOE controls about one-fifth of the computer systems operated for the Government and is second only to the Department of Defense in the number of systems supporting an individual agency. During fiscal year 1977 DOE estimated it spent $230 million to operate and maintain these computers. According to General Services Administration estimates, only the Departments of Defense; Treasury; and Health, Education, and Welfare spend more for computer activities.

Computers have become indispensable to DOE's collection, analysis, and reporting of scientific, regulatory, and even administrative information. About 90 percent of the total computers transferred into the new DOE are the small computers acquired for less than $200,000. These minicomputers were used to collect and perform minor analyses of data from scientific experiments, control electrical equipment, and process a small amount of administrative work. Larger minicomputers, medium-size computers, and large general-purpose equipment were used mostly in the Washington, D.C., area to collect and analyze administrative and energy information. Medium and large scientific computers were used by DOE contractors throughout the country to simulate and analyze results of scientific experiments. The technically sophisticated CRAY-1 computers, the first of which is installed at DOE's contractor-operated Los Alamos Scientific Laboratory and rents for about $2 million a year, is included in this last class of computers.

The following table summarizes the various types of data processing performed by computers transferred into DOE.

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Type of data processed	How computers are used	Size of computers typically used	DOE organizations involved
Scientific	Collect and partially analyze data from experiments	Mini	Contractors
	Control electrical equipment	Mini	Contractors, Power Administrations
	Detailed analysis of experimental data	Medium and large	Contractors
	Large-scale simulation of experiments	Medium and large	Contractors
	Design and simulated testing of nuclear weapons	Large	Contractors
Nonscientific	Process accounting, payroll, personnel, and other administrative data	Mini, medium and large	Contractors, DOE headquarters and field offices, Power Administrations
	Accumulate oil, gas, and coal statistics and forecast future energy supply and demand	Large	DOE headquarters
	Model distribution of electricity along power-lines	Medium	Power Administrations
	Accumulate and report data for regulating utilities	Large	DOE headquarters

OTHER DOE INFORMATION
PROCESSING RESOURCES

Computer equipment is perhaps the most visible, but not always the most expensive, information processing resource available to an agency. Computer industry experts estimate that acquiring and installing new equipment generally represents less than half of a new system's cost. Today slightly more than half of the cost to design and operate a system is the cost of writing and maintaining computer programs. Once written, the programs represent a tangible resource which an organization can use time and again in their original forms or can modify to reflect demands for new information.

Agencies merged into DOE maintained over 800 systems or groups of computer programs to analyze energy- and management-related information. Of these, 588 were management information systems and 217 were energy-related information systems. About 530 of the agencies' management information systems were maintained by ERDA headquarters and field offices to process accounting, payroll, and personnel records; monitor agencies' procurements and contracts; and manage inventory and distribution of technical reports. About 170 of the agencies' energy information systems were maintained by ERDA, FEA, and the Department of the Interior's Bureau of Mines to collect and process fuel production, consumption, and reserve statistics and to project future supply and demand for energy resources. The FEA Project Independence Evaluation System computer model is one example of an energy-related system transferred to DOE.

ERDA contractors were deeply involved in designing and using computer programs to analyze scientific and energy data. There is no complete inventory of computer programs maintained by the contractors now reporting to DOE. Yet, of the $150 million ERDA estimates it spent for contractor data processing services during fiscal year 1977, $62 million was spent for contractors' computer systems analysis and programming.

FACTORS AND PROBLEMS IMPORTANT
TO DOE'S CONSOLIDATION EFFORTS

DOE is not the first agency which has gone through a consolidation. Within the last 13 years, the Departments of Transportation and Housing and Urban Development faced the question of how best to use the information resources transferred to them after a reorganization. Also the National Institutes of Health and the Departments of the Army and the Navy have reorganized and consolidated major segments of their data processing programs. These agencies found that top-management

support and involvement and realistic planning were two factors essential to defining and consolidating information processing activities.

Admittedly, changes in computer technology make DOE's potential consolidation of information activities different from other agencies'. For example, since the mid-1960s and early 1970s when many of these other consolidations occurred, the growth in the number and versatility of small computers has given agencies additional ways of acquiring computer processing services. Development of sophisticated computer programs has made it more feasible to create and maintain large collections of information and to share this information with numerous users. New types of scientific computers have also been developed, allowing scientists to research problems too complex for earlier computers. These advances give DOE a much wider and more complicated range of technological alternatives to evaluate and choose among. The variety of ways available to collect and process information and the impact that selection of an alternative will have on DOE's operations make top-management participation during a consolidation study even more essential.

The size and diversity of computer services contractors provide DOE also make DOE's potential consolidation of activities different and, in fact, harder than other agencies' consolidations. DOE's scientific research and nuclear weapons programs are carried out primarily by contractors at multiprogram laboratoies and nuclear production facilities throughout the country. Contractors include single universities, consortia of universities, and private corporations. Collectively these contractors operate about 90 percent of the computers funded by DOE. These contractor-operated, DOE-funded computer facilities collect and analyze a variety of scientific, energy, and economic information. Equipment and information could be shared among contractors and DOE to better use DOE's information resources. Again, however, top-management involvement is required to encourage and actively support widespread resource sharing.

Identification and elimination of duplicate collection of data is a major part of any information consolidation effort. Recently, however, Federal agencies have had limited success in eliminating duplication in the collection and processing of energy information. In February 1974 we reported that the absence of standard definitions for data various agencies requested, and the liberal use of restrictions to protect supposedly confidential data, were key factors in

agencies' reluctance to share energy data. 1/ A second GAO
report 2/ and an April 1977 Federal Paperwork Commission re-
port 3/ stated that these and other data related problems
continue to exist in the Federal energy community. As a
case in point, we reported that as of 1976 three Federal agen-
cies had conducted independent studies of U.S. oil and gas
reserves. The data developed from these studies was not
compatible and little sharing was possible because the agen-
cies had requested data from different industry sources, had
used different definitions for the data request, and had com-
bined the requested data in different ways.

DOE must wrestle with eliminating the duplication of
administrative, scientific, and energy-related data. DOE
will undoubtedly face the same type of obstacles to sharing
data which other agencies have faced. The difficulty of over-
coming these obstacles and other agencies' limited success in
this area emphasize the need for DOE top management to active-
ly participate in DOE's consolidation.

In a recent report 4/ we cited instances in which inter-
nal audit groups had reviewed computer systems and improved
the reliability of computer-generated information used by
agency managers. Internal audit groups can also contribute to
the design, development, and/or consolidation of information
systems by reviewing systems being developed. DOE managers
should recognize that the Department's internal audit group
can be a valuable tool in DOE's efforts to eliminate unneces-
sary energy, management, and scientific information systems.

TIME IS CRITICAL TO DOE'S
CONSOLIDATION EFFORT

The reorganization of major energy agencies into DOE
gives the new department an important advantage in its efforts
to organize information resources. Charged with a new mission,

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1/"Actions Needed to Improve Federal Efforts in Collecting,
   Analyzing, and Reporting Energy Data" (B-178205) (Feb. 6,
   1974).

2/"Improvements Still Needed in Federal Energy Data Collection,
   Analysis, and Reporting" (OSP-76-21) (June 15, 1976).

3/"A Report of the Commission on Federal Paperwork (Energy)"
   April 28, 1977.

4/"Computer Auditing in the Executive Department: Not Enough
   is Being Done" (FGMSD-77-82) (Sept. 29, 1977).

and made up of organizations just beginning to develop their identity, DOE has the opportunity to reallocate or reassign persons, equipment, and systems with a minimum of internal resistance. The likelihood of resistance to change which a consolidation project would recommend is higher--and the likelihood of change being made is lower--the longer DOE organizations have to develop and formalize their operating style. Thus DOE needs to start an analysis of its total information needs and information processing resources while the agency is still new and resistance to change is relatively low.

Time is also critical to a successful consolidation because of the daily pressures to add or to modify DOE's information resources. Officials at the scientific laboratories and the Bonneville Power Administration told us they needed additional computer capacity to supplement their saturated equipment. The Organization Act requires DOE to collect and process new types of energy information. DOE needs to make an indepth analysis of its total information needs and resources before such legislation and program needs significantly change DOE's inventory of information-related resources and lessen the opportunities for future consolidations.

CHAPTER 3

DOE DOES NOT HAVE A COORDINATED DEPARTMENTWIDE

PROGRAM TO MANAGE INFORMATION PROCESSING RESOURCES

After months of planning and over 150 days of operation, DOE has made some important strides. Organizations have been created, officials appointed, and policies issued. DOE has made little progress, however, toward creating a new agency-wide approach to define and control all its information-related resources.

INFORMATION PROCESSING WITHIN DOE
--DIVIDED AND WITHOUT DIRECTION

DOE has divided the control over and decentralized the collection and processing of information within the agency. For example, the Organization Act created the Energy Informa-tion Administration (EIA) within DOE specifically to collect and process energy-related data. DOE has assigned responsi-bility to the Office of Controller to control development of administrative- and management-related information systems. The Director of Administration has been made responsible for controlling acquisitions of computer equipment.

DOE does not have a central focus for directing and man-aging these various information-related activities. DOE's fragmented, piecemeal approach to managing information applies also to the collection and processing of information by DOE's contractors. Without comprehensive and integrated objectives and controls, DOE will find it almost impossible to control its information resources effectively.

DOE must have departmentwide
information objectives and plans

Among the first acts of a new agency should be defining specific objectives and developing strategies or plans to achieve these objectives. DOE must have a clear statement of objectives and principles both to guide the collection and processing of information throughout the agency and to later evaluate the effectiveness of these activities. Such objec-tives and definition of responsibilities should be developed and strongly supported by top management.

Various groups within DOE have defined objectives and issued policies related to information processing which re-flect the mission of their own individual offices. The Of-fice of Controller and EIA are working toward avoiding pro-liferation and assuring proper coordination of information

systems, while EIA is striving toward reducing the burden of the public responding to Government requests for energy data. One of the Director of Administration's objectives is to insure that computer resources are used in the most efficient manner. However, the Secretary of Energy has not issued or approved agencywide objectives and plans for information processing. Without such agencywide objectives and a plan to achieve these objectives it is difficult to see how objectives and policies implemented by individual offices will help DOE achieve its important mission.

In our opinion, the Secretary should adopt such objectives as (1) minimizing the burden on respondents by collecting only information necessary to achieve DOE's mission, (2) analyzing this information efficiently, (3) reporting results quickly, and (4) promoting sharing of the agency's total information resources. The Secretary should then outline a plan to achieve these objectives and designate organizations responsible for designing and implementing more specific goals. The Secretary should also establish a mechanism to periodically assure that DOE groups are meeting these overall objectives and that these objectives remain valid. The emphasis is that these DOE objectives and plans should be agencywide and apply to all DOE information processing resources.

Divided responsibilities leave gaps in DOE's control

DOE's separation of responsibilities for information activities has created several gaps which seriously weaken DOE's overall control of information resources. The EIA, Office of Controller, and Director of Administration do not sufficiently control contractors' development of information systems or program divisions' use of contractor computer facilities. Because contractors operate about 90 percent of DOE's computers, weak control of contractor activities becomes a major stumbling block to a departmentwide reorganization of information activities.

For example, DOE has approved procedures intended to prevent development of duplicate management information systems. Under these procedures, DOE groups must obtain approval from the Controller before operating major information systems for the first time at the DOE administrative computer center. These procedures do not, however, require the Controller's approval before information can be processed at contractor computer facilities. An ERDA official responsible for developing and implementing similar procedures after that agency was consolidated told us such procedures did not prevent ERDA program divisions from using contractors to develop and/or operate duplicate information systems. These new DOE control

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procedures do not prevent DOE program divisions from continuing to use contractors to develop duplicate systems. Divisions can still fund contractors to develop and/or operate duplicate management information systems.

DOE's current organization of information activities also separates control of information systems from approval of computer acquisitions. DOE has not established a mechanism or an office to integrate these controls. It has not even pinpointed responsibility for contractors' development of scientific and general purpose computer systems. Yet, DOE's need for computer equipment is related and intertwined with its need for computer programs and systems. New requirements for information develop into a need for computer systems and equipment to collect, process, and report the information. The rising cost to develop these systems makes it imperative that DOE closely coordinate the control of all types of information processing resources.

DOE's collection and processing of scientific and nonscientific information requires different types of computers, information systems, and information processing personnel. Yet we believe DOE's controls should cover scientific and nonscientific systems, equipment, and people used by DOE and its contractors. General controls should be approved by a central DOE group responsible for DOE's information collection and processing policy and be consistent with information objectives established by the Secretary. These general controls would establish an overall framework for more detailed potentially different controls of specific information processing activities funded by DOE.

HOW SHOULD DOE DEFINE AND CONSOLIDATE INFORMATION PROCESSING ACTIVITIES?

The term "consolidation" means combining duplicative or underutilized resources to better meet an agency's needs. It can also mean combining resources in a different way to meet changing agency needs. Before it can consolidate, however, DOE must (1) define the type of information needed on a DOE-wide basis to fulfill its mission; (2) inventory the data collected, equipment available, and computer programs written throughout the agency to process this information; and (3) study how these resources should best be used to meet the agency's needs efficiently. To achieve effective consolidation, DOE should follow this departmentwide study by an indepth analysis identifying how information resources are currently used and the best way of reorganizing, relocating, or sharing these resources.

However, DOE has not effectively organized or managed a DOE-wide project to consolidate information resources. The Secretary of Energy has not assigned authority to any central office or organization to identify the information needs of DOE. Also DOE groups have inventoried only part of the agency's information resources and have not made a comprehensive analysis of how these resources are, or should be, used.

Some planning of work accomplished before activation

Before the official October 1, 1977, creation of DOE, two planning groups of a DOE task force 1/ developed inventories of management and energy-related information systems that were to be transferred into DOE. A third planning group identified the location and type of major computer equipment to be controlled by DOE. Although steps in the right direction, these inventories were not complete enough to fully analyze DOE's opportunities for consolidation. For example, the computer equipment planning group did identify the major DOE computers but did not investigate how the computers were used, whether computers processed classified or unclassified data, or the potential for sharing.

The inventories of management and energy-related information systems identified most headquarters' systems but identified few of the systems used by DOE contractors to collect and process environmental, economic, or energy data. A consultant given a DOE contract to develop one of the inventories reported to the task force that it could find no comprehensive inventory of contractor-operated energy information systems. The consultant's final inventory of DOE energy information systems included only those contractor-operated systems identified through contacts with task force groups and visits to three of DOE's eight national laboratories.

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1/During May 1977 the new Secretary of Energy set up a task force to plan for DOE's activation. Various working groups were established as parts of the overall task force efforts to insure that organizational, staffing, and administrative policies for DOE were in place and operating on October 1. The planning groups referred to in this report were parts of the working groups looking at DOE's budget and fiscal and energy information policies and procedures.

Scattered, low priority consolidation activities after activation

Since October 1, 1977, the Office of Controller, EIA, and Office of Administration have made some progress toward consolidation. For example, the EIA has organized a special group within the Office of Assistant Administrator for Energy Data to evaluate and implement recommendations made by a consultant that had studied the possibility of consolidating or eliminating information systems. Also EIA and the Office of Administration have worked together to obtain approval from the General Services Administration (GSA) to move DOE computer equipment from several separate buildings to the DOE headquarters building. EIA has also awarded contracts to identify information requirements for a DOE-operated national energy information system and an emergency management information system.

The Office of Controller has consolidated payroll systems of ERDA's Washington, D.C. area offices, the Federal Power Commission, FEA, and the Bureau of Mines. The Controller's Office is planning to complete by January 1979 an analysis of opportunities to consolidate payroll systems of the Bonneville and Southwestern Power Administrations and former ERDA contractors. DOE studies of other administrative information systems are underway.

These achievements represent only limited progress toward designing a new way of meeting DOE's information needs. The payroll and other administrative systems which have been integrated represent only a small fraction of DOE's management information systems. No group within DOE has analyzed the use and potential for sharing the almost 2,150 computer systems at DOE's field and contractor sites. Most important, no DOE component has even been charged with identifying the information needs of the total Department or how to best use the Department's resources to meet these needs.

The number of staff assigned to DOE's scattered information consolidation activities illustrates the relatively low priority of DOE's efforts. The Director of Administration is the official point of contact for the collocation or consolidation of automatic data processing (ADP) facilities. However, staff in the Director's Office of ADP Management has been specifically assigned to coordinate equipment consolidations only when other DOE offices and contractors have requested assistance. The Director of Administration has not assigned any staff person in the office full-time responsibility for independently identifying and pursuing consolidation opportunities. For example, no staff has been specifically assigned to study consolidation of DOE computer networks or

consolidation of computer resources operated by DOE field or contractor organizations.

At the same time, the Office of Controller has assigned only six ~ ~i-time staff to the consolidation of DOE's 588 manageme~ ~formation systems. EIA has only three full-time and one ~ -time staff professionals to implement consolidation of about 220 energy data systems.

DOE needs to assign a higher priority to its consolidation of information resources. Only by developing a DOE-wide approach to total information management and by top management taking a fresh new look at its information needs and resources can DOE effectively organize its information resources.

RESULTS OF CONCURRENT DOE INFORMATION PROCESSING STUDY

During our review DOE commissioned a contractor to examine some of the same information policy and organization questions we discuss above. In its January 1978 report the contractor concluded that DOE needed a central policymaking group to (1) establish DOE-wide computing policies and standards, (2) take an active role in planning local contractor-operated computing systems used to monitor scientific experiments and automatic office business functions, and (3) redesign equipment oriented procurement controls to reflect increasing system development and user costs. The contractor also recommended that DOE study the potential for consolidating or standardizing the approximately 25 computer networks now used by DOE and its contractors while developing procedures to more actively encourage resource sharing and cooperation between sites.

At the close of our review, DOE had not taken any action on the contractor's recommendations. Although the contractor study primarily emphasized DOE's use of computing resources, we believe that implementing the contractor's recommendations are an important step toward improving DOE's total management of all information processing resources.

DOE ANSWERS TO CONGRESSIONAL QUESTIONS EXPLAIN AGENCY PHILOSPHY

On February 10, 1978, the Chairman, Subcommittee on Public Works, House Committee on Appropriations, asked DOE to identify DOE's (1) objectives for collecting, analyzing, and reporting information, (2) approach and progress toward consolidating information resources, and (3) approach toward managing and coordinating computer equipment acquisitions with development of computerized information systems. DOE's

response dated February 24, 1978, makes it clear that the Department has adopted a piecemeal fragmented approach to information processing. (See app. II and III for the Chairman's letter and DOE's response.)

DOE explained that its division of responsibility among the EIA, Office of Controller, and the Director of Administration is based on DOE's enabling legislation, differences in functions among offices, and the need for special emphasis on development and coordination of management information systems. For example, the Organization Act created EIA to develop and coordinate energy information systems. DOE then decided to emphasize development and coordination of management information systems by assigning responsibility for these systems to an office which was (1) not part of EIA and (2) not responsible for acquiring computer equipment. Thus coordination of management information systems was assigned to the Controller, while management of computer equipment was assigned to the Director of Administration.

We agree that DOE should emphasize development and coordination of management information systems. We believe, however, that system development would be better controlled and coordinated with equipment acquisitions if one high-level official was responsible for both resources. This official should be at a level as high or higher as the Administrator, EIA, Assistant Secretaries, and Directors of the national laboratories whose activities the official will control.

DOE's letter to the Subcommittee Chairman did not identify any specific controls over contractors' development of computer programs. DOE stated that contractors' development of scientific and engineering programs was a complex process which depended on the type of computer and specific DOE activity being supported. DOE emphasized that these scientific programs were "shared, when possible" among DOE and other research users.

DOE contractors, however, support more than just the extremely complex engineering type computer programs. Contractors must develop general computer programs for (1) collecting and processing information with mini and medium size computers, (2) analyzing results of environmental and economic forecasting models, and (3) translating scientific data into two or three dimensional graphs. The contractor examining future DOE computer alternatives suggested that DOE standardize these general computer programs as much as possible and apply sophisticated program development tools to capitalize on valuable human resources. In our opinion, only a central group reporting to the Secretary or Deputy Secretary and responsible for both computer equipment acquisitions and program development can

promote such coordination and standardization of computer resources.

DOE stated that EIA and the Office of Controller are responsible for coordinating the agency's information needs and resources. EIA has initiated studies to identify DOE's energy information needs and is developing a dictionary which identifies and defines energy data collected by DOE. The Controller's Office has established contacts with program divisions to help the divisions identify information needs. The Office has also reviewed for duplication about one-tenth of DOE's management information systems.

These efforts are not enough, however, to effectively organize and consolidate all of DOE's information resources. Effective organization and consolidation of information processing activities must be based on an indepth study of DOE's needs and resources. Yet DOE has not even started a comprehensive, DOE-wide analysis to determine whether existing systems, computers, and information processing personnel are being used to meet its priority needs; nor has it set up a central group to make such a study. At the root of this is top management's failure to define objectives, priorities, and plans for information management within DOE. Such top-management involvement is necessary if DOE is to effectively and efficiently collect, process, and report information.

CHAPTER 4

WEAKNESSES IN DOE'S CONTROL

OF COMPUTER ACQUISITION

The previous chapter discussed DOE's need to develop and carry out comprehensive, integrated controls of DOE's total information processing resources. Controlling total information resources is not an easy task because it includes not only computer equipment, but computer programs, personnel, and information related to energy, administration, and management.

In this chapter we discuss DOE's efforts to control one part of its information processing resources--computer acquisitions. We discuss it because we believe controlling such acquisitions could be the starting point for DOE's new integrated controls and because DOE's future progress in this aspect could be indicative of its approach towards total management of all information resources.

PROCEDURES FOR JUSTIFYING AND APPROVING COMPUTER ACQUISITIONS

DOE has established a system whereby computer requirements are reviewed on a centralized basis while selection and acquisition of specific equipment is done on a decentralized basis. As part of the Department's new long-range computer planning process, contractors and DOE organizations submit 5-year forecast of computer requirements and justification for major new computer acquisitions to DOE. After field offices and program divisions review requirements and justifications, the Director of Administration's Office of Automatic Data Processing Management compares forecasted requirements with congressional and Office of Management and Budget funding decisions and issues a consolidated DOE computer equipment plan. Inclusion of a major computer item in the plan denotes the Director of Administration's approval to proceed with the selection and acquisition of specific equipment. The actual selection and acquisition then is done by the requesting organization or office subject to reviews of regional operations offices and DOE headquarters.

DOE DOES NOT OBTAIN DELEGATIONS OF PROCUREMENT AUTHORITY FROM GSA BEFORE AUTHORIZING CONTRACTORS TO ACQUIRE COMPUTERS

Between fiscal years 1970 and 1976, the cost of contractor-provided computer services increased faster than any other Government computer cost. DOE estimated that for fiscal year

1977 it spent $150 million for computer programming, operation, and other computer related services by contractors. For fiscal year 1979 DOE estimates its costs for contractor-provided computer services will increase to $196 million, about 40 percent higher than fiscal year 1977. Despite these large computer related costs, DOE does not request authority from the General Services Administration (GSA) before authorizing contractors to acquire computer equipment.

Public Law 89-306 (the Brooks Act) enacted in October 1965 gave GSA the authority to coordinate Federal agencies' acquisition of computer equipment. GSA regulations require that agencies request authority from GSA to procure any computer equipment costing more than $50,000. GSA can elect to (1) procure the equipment for the agency, (2) participate with the agency in the procurement, or (3) delegate procurement authority to the agency.

DOE's position is that GSA's authority under the act does not extend to contractor-operated computer equipment. This position hinges upon an interpretation of congressional modifications to the original bill. The bill introduced by Congressman Jack Brooks authorized GSA

" * * * to coordinate and provide for the economic and efficient purchase, lease, and maintenance of automatic data processing equipment by, or at the expense of Federal agencies."

The House Committee deleted the phrase "or at the expense of" from the bill. A May 1975 letter to GSA from the Department of Justice pointed to this deletion as intent that:

"GSA [does] not have authority over contractors who happen to use ADP in the course of supplying other goods or services--even if the ADP equipment is wholly paid for by the Government."

GSA does not agree with the 1975 Department of Justice decision. The Commissioner of GSA's Automated Data and Telecommunication Service told us that, in his opinion, the Department of Justice letter did not adequately reflect the House Committee's full discussion or the potential ramifications of the Department's broad decision. The Commissioner expressed concern that excluding from GSA's authority computers indispensable to an agency's mission because these computers are operated by non-Government employees would seriously weaken GSA's ability to manage Government-wide computer acquisitions. GSA's General Counsel plans to discuss with Department of Justice officials the 1975 decision which limits GSA's authority over contractor-operated computer equipment.

We support GSA's efforts to resolve this question. The costs to DOE of obtaining and operating its computers are borne by the Government whether they are incurred under a contract for computer services or a contract for scientific research and development. We believe that to effectively manage the Government's computer acquisitions, GSA should review contractors' acquisitions of computer equipment. If the Department of Justice decision is not clarified to show that GSA has this authority, the Congress may have to modify Public Law 89-306.

Pending this clarification of GSA's authority and new Government-wide computer procurement regulations DOE should request delegations of procurement authority from GSA before authorizing contractors to acquire computer equipment. Such a requirement would help GSA and DOE to better coordinate the agency's computer acquisitions.

COMPUTER REVIEW STAFF
NEEDS TO BE ENLARGED

In reviewing and approving computer acquisitions DOE relies heavily upon the quality of reviews made by DOE regional office personnel. Regional offices approve the justification and acquisition of major computer items delegated to them, plus acquisitions of nonmajor computer equipment. To effectively control such a decentralized organization, DOE must have the staff to regularly evaluate the performance of regional offices; the Department does not have a large enough staff to do this, plus their other duties.

While a part of ERDA, the Office of ADP Management employed seven professionals to review and manage ERDA's nationwide computer resources. The creation of DOE has added resources to be managed and a centralized planning process to be implemented by the Office's DOE counterpart. Yet DOE's computer review staff in this Office has increased only by three. These 10 professionals are responsible for, among other duties, (1) developing and implementing DOE-wide computer acquisition policies, (2) requesting and coordinated responses from DOE headquarters' divisions, field offices, and contractors to develop DOE's annual long-range computer equipment plan, (3) assisting headquarters divisions' initial review of computer equipment requests, and (4) conducting site visits of contractor and DOE field office computer facilities. In our opinion, a staff of 10 is too small to effectively perform these functions.

DOE program divisions could assist the Office of ADP Management's review and control of computer acquisitions. Some divisions do not have any computer review staff while

other divisions have only very small review staffs. While a part of ERDA, some of the research oriented program divisions relied almost completely on the Office of ADP Management for reviews of major acquisitions. ERDA's program divisions generally did not make indepth reviews of individual nonmajor computer acquisitions.

DOE needs to strengthen the computer review capability of its headquarters' program divisions and the Director of Administration's Office of ADP Management. The Office's staff should regularly make indepth reviews of regional offices' computer review groups.

IMPROVED CONTROL AND BETTER COORDINATED PROCUREMENT OF MINICOMPUTERS NEEDED

The advent of small computers illustrates why controls over an agency's total information resources must be coordinated. Current trends in the computer field are driving equipment costs down. This means that smaller, more versatile computers can meet the needs and budget limitations of an increasing number of users. DOE and its contractors have been quick to recognize the effect of this changing technology. Between July 1, 1971, and September 30, 1977, the number of computers acquired by DOE or its predecessor agencies costing less than $200,000 increased by about 200 percent. Small computers are now being used to process budget or other administrative information, analyze data from scientific experiments, and perform such miscellaneous tasks as editing scientific reports.

DOE acquisition controls based only on equipment price

DOE's basic criteria for deciding whether the Director of Administration will approve minicomputer acquisitions or whether a regional office can do it is the cost of computer equipment. Effective October 1, 1978, a new DOE definition of a major computer acquisition will give regional operation offices authority to approve acquisition of equipment costing up to $400,000. Decreasing equipment costs mean DOE and its contractors will be able to obtain a variety of powerful minicomputers for less than this $400,000 threshold.

Approval of an acquisition for computer equipment, however, involves commitment of more agency resources than just the funds used to buy or lease a computer. People must write programs telling the computer how to accept, analyze, and report information. The cost to design and develop these programs is usually not included in the manufacturer's equipment prices.

Recent industry estimates are that the ratio of equipment costs and program development costs is often about two to three. At this rate DOE could spend as much as $600,000 to initially design programs for a computer system which has equipment costing $400,000. DOE's definition of a major computer acquisition as one that has greater than $400,000 equipment costs, permits purchases of less than that amount to be classified as nonmajor acquisitions. As in the example above, these nonmajor acquisitions could, however, involve close to $1 million in total costs. Yet, these nonmajor acquisitions will be approved by DOE regional offices.

We believe decisions to commit almost $1 million of resources should be controlled at the headquarters' level. To do this, DOE must revise its definition of major computer acquisitions to reflect both the equipment and development costs of systems. We also believe such acquisitions should be coordinated by headquarters to maximize opportunities for quantity discounts.

Minicomputer procurements can be coordinated better

Computer equipment manufacturers typically offer discounts for large quantity purchases. Other agencies, and even DOE contractors, have obtained sizable discounts for quantity purchases from computer manufacturers. The Department of the Navy, for example, has negotiated two contracts with manufacturers of different size minicomputers and guaranteed the purchase of at least 10 computers from each manufacturer. In return, the Navy obtained equipment discounts of 10 to 15 percent. The University of California and du Pont, two DOE contractors, negotiated contracts for specific equipment which they needed. They were able to get quantity discounts ranging from 14 to 24 percent off the manufacturer's price.

If others can achieve these economies, DOE--with greater quantities of purchases--should be able to do at least as well. However, DOE and its predecessors have taken advantage of quantity discounts in only one instance in the last several years. In early 1973 the Atomic Energy Commission negotiated with two major computer manufacturers for six large-scale scientific computers to be used by contractors at three of its national laboratories. The negotiations resulted in a price of about 40 percent less than the prices for individual items, resulting in a direct 40 percent savings.

DOE regional offices and contractors now acquire the same general type of computer equipment, sometimes even from the same manufacturer, without combining these acquisitions into departmentwide buys. About 70 percent of the computers

costing less than $400,000 transferred to DOE were originally
acquired from four manufacturers. Some ERDA contractors have
combined these acquisitions with others they were making or
with those their parent organizations were making. Quantity
discounts might have been greater, however, if ERDA had coor-
dinated these acquisitions on a total departmentwide basis and
included all regional offices and contractors. DOE needs to
implement procedures which will coordinate the Department's
total purchases of computers and insure that the maximum quan-
tity discounts available are taken.

DOE contractor also suggests
improved procurement and management

The DOE contractor commissioned to examine future com-
puting alternatives also recommended improved procurement and
management of low cost computer equipment. In its January
1978 report the contractor noted a growing trend at DOE sites
to use minicomputers to (1) control scientific and production
equipment, (2) access large computer facilities, and (3) im-
prove mail service, prepare reports, and automate other general
administrative functions. The contractor estimated that, on
the basis of rising personnel costs, DOE spends about $60 mil-
lion a year to support and use these minicomputers.

To improve the effectiveness of these resources, the con-
tractor suggested DOE coordinate the acquisition and mainte-
nance of minicomputers while establishing central system devel-
opment groups at each site to locally coordinate development
efforts. The contractor also suggested DOE create a committee
responsible for developing procurement and system development
guidelines for computer-based office equipment. DOE has taken
no action on these recommendations.

CHAPTER 5

CONCLUSIONS, OBSERVATIONS, AND RECOMMENDATIONS

DOE has not tak⸱⸱⸱ departmentwide approach to managing all its information re⸱ources. Contractors operate the bulk of DOE's computer systems, and design and develop expensive systems to process both scientific and nonscientific information. Yet contractors' development of information systems and DOE's use of contractor-operated computer equipment fall outside headquarters' control. Those controls which do apply to DOE organizations and contractors do not adequately coordinate the development of computerized information systems with the acquisition of computer equipment. Without departmentwide and coordinated control, duplication, waste and inefficient use of information resources will plague DOE.

DOE has also made only very limited progress toward defining and consolidating the department's total information needs. Various DOE organizations have inventoried or started studies to identify some of the information needed by the department. But again, these efforts have not been coordinated on an agencywide total information perspective. The Secretary of Energy has not assigned responsibility or staff to conduct a departmentwide study of DOE needs or resources or how best to match the two.

In our opinion, the basic reasons for DOE's current approach are (1) DOE's position that data, people, computer programs, and computers are s⸱ resources which can be managed by different organiz ⸱⸱⸱ ⸱ (2) a traditional Atomic Energy Commission and ERDA p⸱ ⸱osophy of contractors' relative independence from headquarters. The interrelationships among all types of information resources and the importance of DOE contractors' information activities, however, demand integrated, departmentwide controls. DOE needs a high level official--the Deputy Secretary--to coordinate and manage information activities on an agencywide basis. One of the Deputy Secretary's first functions in this area should be to spearhead a top-priority study of DOE's information needs and resources.

The Deputy Secretary should consider establishing a permanent staff and a DOE-wide advisory board or council to achieve DOE's information management objectives. Such a board would consist of top level officials from DOE program and staff divisions, administrations, and contractor organizations and would advise the Deputy Secretary on major questions concerning information policies and resource commitments.

RECOMMENDATIONS TO THE
SECRETARY OF ENERGY

To carry out its charter, DOE must effectively marshal its information resources. DOE decisions shaping the Nation's energy future should be based on the best attainable information. Computers, people, and other information resources used inefficiently translate into wasted time and dollars which could have been used to provide more timely, accurate, and complete information for DOE decisionmakers. DOE decisions are too important to permit less than effective DOE information organization or control.

We recommend that, to improve the effectiveness of DOE's total information management, the Secretary:

--(1) Define departmentwide objectives for collecting, analyzing, reporting, and consolidating information by DOE; (2) specify responsibilities of DOE components for achieving these objectives; and (3) explain the relationship among DOE's program and information-related objectives.

--Initiate and actively support a departmentwide in-depth analysis of the DOE's total information needs and resources.

--Enlarge the responsibilities of the Deputy Secretary of Energy to include responsibility for (1) developing and implementing departmentwide information-related policies, (2) directing the DOE-wide analysis of total information needs and resources, (3) managing information-related activities of DOE contractors, and (4) coordinating DOE activities regarding computer equipment acquisitions with development of computer programs.

--Issue interim procedures requiring that computer acquisitions, program development, or data collection activities started before the DOE-wide analysis is completed be reviewed by the Deputy Secretary or his designee to insure that these proposed changes will not restrict DOE's opportunities for consolidation.

--Assign additional qualified computer review staff to DOE program and staff divisions, the Director of Administration, and operations offices.

--Issue procedures requiring DOE to (1) request authority from GSA before authorizing contractors to acquire computer equipment and (2) coordinate procurement of small

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computer equipment to take full advantage of potential quantity discounts.

RECOMMENDATIONS TO THE CONGRESS

The Department of Energy Organization Act was written because the existing structure of Federal energy programs was too fragmented to develop coordinated near- and long-term solutions to the Nation's serious energy problems. If it is to succeed DOE must employ new and creative ways of managing and coordinating the Nation's energy programs. Because effective collection and processing of information is so important to DOE's achieving the goals set for it by the Congress, we recommend that the Congress require the Secretary of Energy to annually report to it actions the Secretary is taking to define and organize information processing resources and requirements. Also GSA is planning to discuss with Department of Justice officials a 1975 decision which limits its authority over Government-owned contractor-operated equipment. To effectively coordinate the Government's computer acquisitions, GSA should review contractors' computer acquisitions. If the Department of Justice does not agree to modify its 1975 decision to show that GSA has this authority, the Congress may have to modify Public Law 89-306.

CHAPTER 6

SCOPE OF REVIEW

To develop this report we interviewed officials and analyzed documents of the DOE activation task force, DOE, and other agencies which have reorganized their information processing activities. We also visited and interviewed officials at Brookhaven National Laboratory, Argonne National Laboratory, and Los Alamos Scientific Laboratory to understand how DOE's computer equipment is being used and to identify organizational and management issues which may distinguish DOE's future consolidation from the experience of others. Our field work for the review began in July 1977 and ended in February 1978.

NINETY-FIFTH CONGRESS

Congress of the United States
House of Representatives

COMMITTEE ON GOVERNMENT OPERATIONS

2157 Rayburn House Office Building

Washington, D.C. 20515

June 2, 1977

Honorable Elmer B. Staats
The Comptroller General
U. S. General Accounting Office
441 G Street, N. W.
Washington, D. C. 20548

Dear General:

The Congress is in the process of combining the functions of the Energy Research and Development Administration (ERDA), the Federal Energy Administration (FEA) and the Federal Power Commission (FPC) into a new Department of Energy. An integral part of this reorganization will be the consolidation and integration of the agencies' information processing functions, the success of which is paramount if the new Department is to meet the goals and objectives established by the Congress.

I have recently asked the General Services Administration to suspend further action on any major ADP procurement requests made by ERDA and FEA until the new secretary has had an opportunity to review and reorganize the Department's information functions. Although my letter to GSA addressed only FEA and ERDA, it is apparent that the same logic would apply to any major FPC, ADP procurement request.
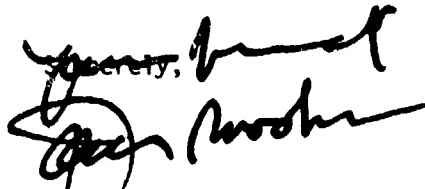
Every effort must be made to assist the new Secretary in his efforts to achieve the objectives envisioned by the Congress. I, therefore, request that you initiate an immediate review of the information processing needs of the new department with the objective of determining 1) the functional requirements of the present agencies, 2) the composition of the ADP and telecommunication resources supporting these requirements and 3) recommend alternative solutions to the problem of consolidating and integrating these resources to support of the new department's mission in the most efficient and economical manner possible.

ADP Procurement   June 2, 1977

    I consider this review of great importance and request that you provide sufficient resources with the necessary functional and ADP expertise to provide timely input to the new secretary and Congress.

With best wishes, I am

                Sincerely,

Jack Brooks
Chairman

Congress of the United States
House of Representatives
Committee on Appropriations
Washington, D.C.   20515

February 10, 1978

Honorable James R. Schlesinger
Secretary
Department of Energy
Washington, DC   20585

Dear Mr. Secretary:

The attached questions have been raised regarding DOE computer operations and development of information systems. We would appreciate a response by February 24, 1978, in order that this matter can be considered during the forthcoming hearings on the DOE FY 1979 budget.

Sincerely,

TOM BEVILL
Chairman
Public Works Subcommittee

Attachment

<u>QUESTIONS FOR DOE</u>

<u>Consolidation</u>

1. Has the Secretary of Energy defined objectives for information management within DOE? What are DOE's department-wide goals for how information will be collected, analyzed, and reported within the Department?

2. How has DOE identified the new requirements for information created by (1) the DOE Organization Act, or (2) the Secretary's decision to organize DOE's energy technologies divisions according to the stage of development each technology is in? How has DOE identified the new information requirements likely to be generated by the pending national energy legislation? What has DOE done to match the new or pending information requirements with the information resources (DOE and DOE contractor's computers, information systems, computer programs, and people) transferred into the Department?

3. Has DOE assigned responsibility for a department-wide analysis of information needs and resources (DOE and DOE contractor's computers, information systems, programs, and people) to a specific office or individual? What has this central office done, to date, to direct and manage such a department-wide analysis? What are the goals and objectives which have been established by this office to monitor and evaluate the success of this department-wide study. Has the Secretary of Energy endorsed these goals and objectives? What priority has the Secretary assigned to the Department's analysis of needs and resources? How has the Secretary communicated this priority to DOE organizations and contractors?

4. How many people are working full time on the Department's analysis of needs and resources. How many part time people? Are these people performing this analysis organized into one separate office, or group, or are they part of another DOE organization? What DOE office(s) are these people assigned to?

5. What type of product will this study team generate after their analysis is completed? When is this product due? How was the timing of the final product decided? Has DOE set any interim milestones or target dates to help the team finish their task in the time allotted? What are these milestones? What has been done to date?

<u>Organizational controls</u>

6. How has DOE organized control over DOE acquisition of computer equipment and development of information systems? What office is responsible for this control? If more than one headquarters office is responsible, what is DOE's rationale for dividing responsibilities?

7. What specific office(s) has responsibility for managing DOE contractors acquisition of computer equipment? What office(s) has responsibility for managing contractor's collection and processing of energy management and scientific information, and the development of new computer programs? How does DOE control contractors development of computer programs. How does the Department coordinate controls over contractor's computer acquisitions with controls which apply to contractors development of computer programs. Are different controls and coordination mechanisms applied to development of programs which collect and analyze "scientific" compared with "non-scientific" data. If so, what are the definitions of each category, and how do the controls differ? Would programs developed to analyze energy consumption in a building with a new type of heating system, or dispersion rates for pollutants emitted from a new type of powerplant, be classified as scientific programs? Would the date collected be classified and controlled as "scientific" data or "energy" data? How is contractor's collection of scientific, energy related data managed by DOE?

8. How many computers costing less than $200,000 (each) were purchased by DOE's component agencies during fiscal years 1975, 1976, and 1977? How many of these smaller computers does DOE plan to acquire during fiscal year 1978. How does DOE coordinate the procurement of these computers? Has DOE negotiated consolidated buys of minicomputers. If not, why hasn't DOE taken advantage of possible quantity discounts available from manufacturer? What has DOE done to coordinate the procurement of computers costing more than $200,000?

9. Effective October 1979, the Office of Management and Budget is raising the dollar definition of a budget line item from $200,000 to $400,000. How will this redefinition affect controls which now apply to contractor acquisitions? Is DOE planning to raise the agency's threshold for headquarter level review of acquisition from $200,000 to $400,000 to coincide with the definition of a budget line item? Will this mean DOE operation offices will have more authority to approve computer acquisition by contractors? Will a $400,000 DOE threshold make agency-wide coordination of contractor's acquisition more difficult? Has DOE considered maintaining the agency's $200,000 threshold as DOE's internal definition of a "major" computer item above which acquisitions will be reviewed by headquarters?

10. How many professional personnel are assigned full time to the DOE office(s) responsible for coordinating contractor's acquisitions of computer equipment? How many professional staff are assigned part time? What are the responsibilities of this staff? Is the DOE headquarters staff qualified to use hardware and software monitors on third and fourth generation DOE computer equipment operated by contractors? What evaluations has DOE done of the performance and utilization of contractor-operated equipment? Has DOE used an independent group (such as DOE's Office of

Inspector General or the Federal Simulation Center) to evaluate
utilization of major computer equipment at contractor sites? What
were the results of these independent evaluations?

FEB 24 1978

Honorable Tom Bevill
Chairman
Public Works Subcommittee
U. S. House of Representatives
Washington, D. C. 20515

Dear Mr. Bevill:

As requested in your letter of February 10, 1978, enclosed are the
answers to the questions regarding DOE computer operations and
development of information systems.

Please let me know if we can be of any further assistance.

<div align="center">Sincerely,</div>

/S/ William S. Heffelfinger

William S. Heffelfinger
Director of Administration

Enclosures

bcc: WSH Reader (Green)
      Frank Pagnotta, OEOB w/original incoming
      OCR (2)
      EIA
      OPMS

RESPONSE TO QUESTIONS RAISED BY CONGRESSMAN BEVILL REGARDING DOE
COMPUTER OPERATIONS AND DEVELOPMENT OF INFORMATION SYSTEMS

Consolidation

1. Consistent with the definitions and responsibilities in the Energy
   Organization Act of 1977, the Secretary has defined the objectives
   for information management and has assigned responsibility for energy
   information to the Energy Information Administration (EIA) and manage-
   ment information to the Office of the Controller.

   The Administrator of EIA has established the following four overall
   goals for the operation of the EIA energy information program:
   (1) to satisfy statistical, analytical, and regulatory needs through
   the collection and assembling of energy data on a regular basis;
   (2) to ensure the accuracy and validity of energy information and
   advise as to the appropriate use of such energy information; (3) to
   develop and apply analytic methodologies, including computer-based
   models, to prepare regularly scheduled and special purpose energy
   forecasts and analyses; and (4) to ensure that the Congress, Executive
   Branch, State Governments and the public are adequately informed of
   the Nation's energy situation on a timely basis.

   The DOE Controller has established the following four goals for
   management information systems: (1) provide more accurate, timely,
   and consistent information; (2) increase the quality of management
   systems and the interface capabilities; (3) reduce duplication and
   overlap through integration and/or replacement of management systems; and
   (4) eliminate unneeded or outmoded systems.

2. Within DOE, information systems have not been categorized on an
   organizational basis but, consistent with the DOE Organization Act,
   have been categorized as either energy or management information
   systems.

   The formation of the DOE and pending new energy legislation are likely
   to create new energy information requirements. Since its creation,
   less than five months ago, the EIA has taken several steps to assure
   that existing energy information requirements are being met and that
   resources will be available for future needs. In January 1978, the
   Administrator of the EIA requested that all the major DOE Headquarters
   components identify existing and planned energy data gathering
   activities necessary to the conduct of their programmatic responsi-
   bilities. Also, as a part of the Secretary's Task Force on Regulatory
   Reform, EIA has been assigned a review responsibility for all existing
   and proposed new energy information systems to eliminate overlap and
   duplication. In addition, the EIA is working with the rest of DOE to
   ensure the availability of all EIA energy publications, information

systems, and data and support services. Points of contact for
different EIA functional areas have been established to assist
DOE components in obtaining energy information and/or support
services from the EIA. The EIA also has developed in coordination
with appropriate DOE staff offices, detailed specifications for a
contractor survey to determine long range DOE-wide energy informa-
tion needs and related resource requirements.

The Controller's Office has taken actions similar to those shown above
for EIA to assure that existing management information requirements are
being met while avoiding unnecessary duplication and proliferation. The
Controller has met and established working relationships with each of the
Assistant Secretaries, EIA, ERA, and FERC. These meetings and continued
relationships are organized into three major thrusts: (1) to assure that
agency personnel are fully aware of what information and information
systems are currently available to them; (2) to provide assistance in
identifying requirements and solutions for information and related systems;
and, (3) to improve upon agency-wide information systems so that they better
feedback the information required by operating offices, thereby eliminating
the need for the development of new systems. Efforts are also being made
in the redesign or modification of agency-wide systems to provide for
traceability of information between stages of technology development and
to support OMB Circular A-109 on Major Systems Acquisition.

The effort to match existing and future computing requirements and
computing resources from the DOE component agencies began prior to
the formation of DOE. Information systems necessary at DOE activa-
tion,as well as systems requiring later integration,were identified.
In September 1977, a study regarding the provision of computing
services within DOE, considering both Headquarters and field activities
requirements and contributing resources, was approved by the then DOE
Secretary designate. The ADP long range planning process is addressing
DOE-wide computer resource requirements necessary to support existing
and pending energy legislation.

3. Upon completion of the DOE activation task force efforts, the respon-
    sibility for the review and analysis of DOE management information
    needs, systems, and resources was assigned to the Controller's Office
    and responsibility for the analysis of DOE energy information needs,
    systems, and resources to the Administrator, EIA. The responsibility
    for approving the acquisition of DOE computing equipment to meet the
    information system requirements in a timely, cost effective manner,
    has been assigned to the Director of Administration.

    EIA has undertaken several efforts to assure that all DOE energy
    information needs and requirements are known and are being appropriately
    met. An Interim Management Directive (IMD) entitled, "Energy and Manage-
    ment Information Systems Review, Coordination, and Integration" was
    jointly drafted by the EIA and the Office of the Controller to explain
    procedures relative to DOE-wide information systems and related respon-
    sibilities. This IMD has been coordinated, over a period of three months,
    with 15 DOE Headquarters and 27 DOE field components, and is in the
    final stages of concurrence prior to release as a new directive. Prior
    to this IMD, Controller's Office has been operating under a Directive

which was carried over from ERDA providing for the review and control
of information systems. A second IMD on Regulatory Data Responsi-
bility within DOE has also been developed and issued. In order to eliminate
any unnecessary duplication or overlap in energy information systems, a
multi-phase Systems Consolidation Project is being conducted by the EIA.
The Secretary has endorsed this project which, in Phase I, will examine,
appropriately modify, and implement systems consolidation recommendations
concerning fifteen groups of existing energy information systems.
Finally, the EIA and the Office of the Controller are finalizing their
inventories of known energy and management information systems and are
regularly exchanging information on new requirements to assure that
these requirements are being appropriately met.

In the area of management information, several steps have been taken to
bring about the identification, provisioning, and consolidation of required
information and related systems. The most significant of these include
a completed inventory of Department management information systems
including description, data elements, and outputs. This inventory pro-
vides a basis for reviewing and controlling new requirements, providing
department managers with knowledge of what information is now available
to them, and facilitating the identification of new information needs.
Information required to effectively manage projects and related contracts
has been identified and applied to the development of a department-wide
uniform contractor reporting system. This system has as its primary
purpose the rapid acquisition and dissemination of uniform management
information necessary to effectively manage its projects while avoiding
requirements for duplicative or unnecessary reports.

In support of the Departmental goals and objectives, discussed in
answer to question 1, the Controller and EIA are establishing continu-
ing mechanisms and procedures to insure proper administrative and
managerial controls over the development and modification of energy
and management information systems. The Secretary has endorsed this
program as reflected in his approval of the DOE organizational struc-
ture, Office Charters, and IMD's.

4. As described above, EIA and the Controller are coordinating the
   Department information needs and resources.

Within the EIA, analysis of energy information needs is a continuing
process involving the entire technical staff. Such analyses, at
different levels of detail, are continually performed as an integral
part of the design of data collection, reporting, and analysis systems.
A procedure has been developed and forms have been distributed so that
unfulfilled data requirements which are identified in the course of
developing and reporting energy information may be reported to a
central point in the EIA Office of Energy Data. In addition, there
are two needs assessment projects underway which include, as a major
task, the determination of complete information requirements. These
are the National Energy Information System (NEIS) and the Emergency
Management Information System (EMIS). These two developmental projects
have six full-time staff members devoted to them until such time as the
requirements and conceptual designs for the systems are more precisely

specified. The major thrust of current EIA information requirements
analysis is performed under contract. For example, two contracts in
support of the NEIS effort are currently underway; they will yield both
a detailed inventory of existing systems for collecting energy data and
a description of the requirements for energy information both within and
without the Federal Government.

The Office of Energy Data Development within EIA is responsible for
both the development of new energy information systems and the
associated analyses of needs and resources. Special high priority
development programs are assigned to the EIA Office of Program
Development. However, the determination of energy information require-
ments and capabilities on a broader scale is intrinsic to most of
the work performed in EIA, and staff members in all EIA organizational
components are thus involved. Within the Office of the Controller,
the entire professional staff (26) of the Office of Program Management
Support (OPMS) is involved in the development, implementation, and
coordination of management information systems. Development includes
requirements and analysis, cost/benefit surveys and impact assessments.

5. While study teams were utilized prior to the activation of DOE, now
    the continuing analysis of information needs and resources is being
    accomplished within the EIA and the Office of the Controller.

A directory of existing data collection systems has been completed
and is under review by EIA, together with a more detailed analysis
of 116 primary energy systems and an assessment of the emphasis
placed on data validation within these systems. An analysis of
user requirements, on the basis of both surveys and personal inter-
views, will be completed in April 1978.

A major product related to the directory of existing systems is
the Information Element Dictionary which will be completed in June
1978, providing a detailed definition and description of all energy
data elements currently being collected. This dictionary is to be
automated so that a description of all data on a given energy topic
can be easily retrieved. This automated version of the Information
Element Dictionary is expected to be available by September 1978.
The timing of the final product and interim reports was established
to obtain a useful product as quickly as possible, subject to funding
availability. Further the previously mentioned EIA Systems Consolida-
tion Project has, to date, targeted 12 forms and 10 energy systems to
be eliminated, 2 forms and 1 energy system to be modified, and 4 forms
and 2 energy systems to be consolidated.

The Office of the Controller reviewed 59 management information
systems during the first quarter of FY 1978 resulting in one elimina-
tion, eight integrations, one modification, one deletion, and forty-eight
continuations. An additional 150 systems will be reviewed prior
to the end of the fiscal year. Not included in this count are those
systems eliminated as a result of the DOE consolidation of agencies.
For example, replacement of multiple payroll, document distribution,
accounting, and correspondence tracking systems. The Compendium of
Management Information Systems is continually updated as new systems

or additional information on existing systems is obtained. The data are kept available for review in a semi-automated form. This permits rapid and sufficient screening of proposals for new development against existing systems to allow for consolidation or multiple usage wherever possible. Detailed procedures for analyzing and verifying requirements and initial screening were carried over from ERDA to DOE and continue to be applied. A more simplified version of this procedure for DOE is now in the process of coordination.

Organizational Controls

6. Control over DOE acquisition of computing equipment is vested in the Director of Administration. The Office of ADP Management carries out this responsibility in support of the Director. All policies and procedures relating to acquisition of computing equipment have been promulgated in a single DOE Interim Management Directive which defines the computer management responsibilities of the Director of Administration; Director, Procurement and Contracts Management; Headquarters Program Organizations; Managers of Field Offices; and the Administrator, Energy Information Administration. This directive stipulates the studies and justifications required, alternatives which must be investigated, and management actions which must be taken prior to pursuing a quisition of equipment from a commercial source. These include feasibility and systems studies, validation of workloads, performance evaluations, review of the availability of Government-owned excess equipment, resource sharing, and studies responding to OMB Circulars. Implementation plans and clearance documents must be approved at the appropriate level prior to execution of contracts for computing equipment.

As previously described, control over the development of information systems is vested in two organizations. The EIA is responsible for the development of all energy data systems and the Controller is responsible for development of management information systems. An IMD on Energy and Management Information Systems Review, Coordination and Integration is being promulgated to define the separation of responsibilities and establish appropriate management procedures.

The Office of Energy Data within EIA has developed detailed procedures for development of new energy information systems which are being promulgated in an IMD entitled, "Management of Energy Data Resources." This directive establishes mechanisms for alignment of developmental priorities and allocation of energy data resources.

Within the Controller's organization, OPMS is responsible for development of management information systems. All new system developments or major modifications to existing systems are controlled by OPMS. Major efforts are submitted to a technical review panel which makes final recommendations to the Controller. Approval authority for minor efforts is delegated to the appropriate Assistant Secretary or Field Office Manager. The Controller's Office has executed its review and control responsibilities under an Immediate Action Directive carried over from ERDA entitled, "Development and Use of Information Systems." Detailed procedures for screening, requirements analysis, cost/benefit studies, impact assessments, and required documentation have been in

existence since the initiation of that Directive on November 10, 1976.
This procedure and the existence of the Management Information Systems
Compendium have contributed toward the avoidance of systems prolifera-
tion by making available to the various organizations of DOE existing
effective systems. Examples include, correspondence tracking, program
finance and analysis, and document distribution systems.

The assignment of Headquarters responsibilities is based upon the
responsibilities enumerated in DOE's enabling legislation, differences
in functions and the need for special emphasis on the development
and coordination of management information systems in a newly formed
Department.

7. The Headquarters Program Offices, the Director of Administration,
    and, as delegated by the Director of Administration, the Operations
    Offices have responsibility for managing DOE contractor acquisitions
    of computer equipment. The Director of Administration functions as
    a central point for planning, policy, budgeting and approval of
    computer equipment throughout the Department, as further described
    in the answer to question 10.

    Three offices within DOE have responsibility for managing contractor's
    collection and processing of information: the Energy Information
    Administration (EIA), the Controller (CR), and Intergovernmental and
    Institutional Relations (IR). The Energy Information Administration
    is responsible for the collection and processing of energy data, the
    Office of the Controller is responsible for the collection of manage-
    ment information required by DOE of the contractors, and the Office
    of Technical Information (IR) is responsible for the maintenance and
    operation of an online library system of technical data for use
    DOE-wide.

    The development of new computer programs by contractors is directly
    related to the specific DOE program activity being supported.
    Scientific and engineering computer program development is complex
    and highly optimized to local machine architecture, operating systems,
    and application library routines in support of specialized program
    activity in order to achieve maximum performance from the computing
    complex. Computer programs are developed for a particular DOE program
    and are shared, when possible, among supporting researchers to avoid
    development duplication. For example, the Argonne Code Center main-
    tains and disseminates codes throughout DOE in support of reactor
    research and other R&D programs. The Magnetic Fusion Energy Center
    performs a similar function for the magnetic fusion community.
    Codes, also, are shared among the weapons community and laser fusion
    researchers. Many routines developed for one program are transferred
    to and utilized by other programs. A committee of large scale
    scientific users has been formed to encourage shared development of
    computer systems and application languages to enhance compatibility
    and portability of future software development.

Business and administrative computing (or "non-scientific" computer programs) internal to a contractor's operation are highly dependent upon specific contractor accounting practices, as required by the contractor's parent corporation.

Different controls and coordination mechanisms are not applied to the development of programs which collect and analyze "scientific data" compared with "non-scientific" data since the coordination and control mechanisms are exercised dependent upon whether the data is defined as energy or management information. Section II of the Energy Supply and Environmental Coordination Act of 1974, as referred to in the DOE Act, defines energy information and data to include "(A) all information in whatever form on (i) fuel reserves, exploration, drilling, development, or production facilities, extraction, and energy resources (including petrochemical feedstocks) wherever located; (ii) production, distribution, processing, transportation, consumption and end use of energy fuels wherever carried on, such as corporate structure and proprietary relationshiops, costs prices, capital investment, and assets, and other matters directly related thereto, wherever they exist."

The definition in law of energy information is based on data content, while the definition established for DOE management information data is functional in nature. Therefore, "scientific data," i.e., data used for scientific purposes, may be either energy information or management information. Controls and coordination mechanisms are applied to the data rather than the computer programs. The answer to the question regarding energy consumption in a building with a new type heating system would depend upon the intended end use of the data as described above.

8. DOE component agencies purchased 348 computers in FY 1975, 369 in FY 1976 (including the transition quarter), and 261 in FY 1977, that cost less than $200,000 each. These Central Processing Units (CPU's), which vary in price from a few hundred dollars to $200,000 often are associated with, or are imbedded in, other end use equipment used for testing, monitoring or data acquisition, and in these cases, are not "stand-alone" computers. DOE's approval process is based upon the system cost rather than the CPU cost and these acquisitions are approved, as appropriate, by the operations offices where the system cost is less than $200,000 and by Headquarters when the system cost exceeds $200,000. In FY 1977, for example, 27 CPU's costing less than $200,000 were approved at the Headquarters level since they were part of overall systems that exceeded that dollar level. It is estimated that 310 CPU's costing less than $200,000 will be acquired in FY 1978.

Information from each site on their requirements for computer systems
below $200,000 is furnished as part of the Department-wide ADP planning
process and is reviewed by the operations offices, Headquarters program
offices, and appropriate Headquarters staff offices. Total centralized
procurement of computer systems costing less than $200,000 has not yet
proven to be practical because of the wide variety of requirements and
use of computers of this size. However, to take advantage of quantity
discounts and advantageous terms and conditions, DOE's contractors
have negotiated a number of Basic Ordering Agreements. These ordering
agreements are available to DOE contractors and several contractors
have utilized the ordering agreement entered into by another DOE operat-
ing contractor to obtain their necessary equipment. In addition, some
of DOE's contractors procure these computers at discounted prices
through contracts or agreements negotiated by their parent corporation
or entity. For example, one University has contracts, restricted to
University components, which have been utilized by some of the labora-
tories operated by that University.

Requirements for acquisition of computers and related computer equipment
in excess of $200,000 for FY 1978 have been identified and discussed
in detail in the ADP plan prepared by each site. These requirements
are carefully analyzed and alternatives such as resource sharing,
utilization of excess equipment and purchase of commercial services,
as well as acquisition of equipment, are considered. If equipment
acquisition is required, potential consolidation of procurements is
also considered. While differences in program requirements do not
usually make consolidation of requirements for purposes of procurement
feasible, one of DOE's component agencies conducted a multiple computer
procurement several years ago that provided for significant discounts.
If circumstances warrant such an action in the future, it would be
carefully considered.

9. The dollar definition of a budget line item for computers and/or related
    equipment was changed from $200,000 to $400,000 effective October 1,
    1978, as a part of changing the dollar definition of a non-computer
    budget line item from $500,000 to $750,000. This redefinition
    of a major item of computing equipment will not affect the DOE
    control over contractor acquisitions. With DOE's development of
    the ADP Long Range Plan, early identification of requirements for
    both the budget and outyears has been accomplished. Rather than
    requiring Headquarters review and approval of all acquisitions
    over a stated dollar level, Headquarters review and approval is
    now determined selectively based upon the information contained
    in the plan, the nature of the acquisition and the type of equip-
    ment to be acquired. Those items not requiring Headquarters
    review and approval are delegated to the cognizant DOE operations
    office. This new procedure does not change the dollar level over
    which contractors must obtain DOE approval of acquisitions. For
    the most part, Headquarters review will be limited to items over
    $400,000 which will result in more authority at the operations
    office level. However, rather than make coordination more difficult,
    it is expected that in conjunction with the ADP plan, this procedure
    will result in improvement of coordination of contractor acquisitions.
    DOE has changed the internal definition of a major ADP item to

$400,000 consistent with the budget definition, though under the selective review process, Headquarters review and approval can be required of an item below this dollar threshold.

10. As stated in the answer to question 7, within DOE, the operations offices, the Headquarters program offices and the Director of Administration are responsible for review and approval of DOE's contractor acquisitions of computer equipment.

At the DOE's operations offices, personnel are responsible for administering computer policies and procedures, as set forth in the applicable IMD relating to the computational activities under their cognizance. These include review and evaluation of contractor requirements for computer equipment, review of planned acquisition of computer equipment included in ADP Long Range Plans and review of implementation plans and clearance documents. There are eight full-time and 14 part-time professionals in the above mentioned operations office activities.

At the DOE Headquarters program offices, twenty-three professional personnel are involved on less than a full-time basis in coordinating the acquisition of computer equipment. This includes review of requirements, submission of plans which reflect future computing requirements for their programs, and review and recommendation for approval or disapproval to the Director of Administration of implementation plans and clearance documents.

The operations office and Headquarters program personnel coordinate their activities with the Director of Administration. The Office of ADP Management (OADPM) carries out this responsibility in support of the Director. This office functions as a central point within DOE for planning, policy, budgeting and approval of computers throughout the Department. Under the direction of the Director of Administration, responsibilities of this office include the development and maintenance of the DOE ADP Long Range Plan, providing staff advice for computing requirements in the budget formulation and execution process, establishment of ADP policy for the Department, implementation within the Department of Government-wide ADP policy, and approval of implementation plans and clearance documents for major computer items acquired in DOE.

In DOE Headquarters staff offices, there are five part-time professional personnel involved in ADP approvals as well as eight full-time professionals in OADPM. These eight professionals have an average of nine years experience in all aspects of computing including system and applications programming, hardware and software evaluation, operation of real-time scientific and administrative computing and communication systems, system performance monitoring, and state-of-the-art technology integration. With this broad experience base, OADPM personnel are qualified to perform detailed technical reviews.

OADPM has performed general management reviews of contractor facilities and has performed indepth technical performance and utilization evaluations. In addition, DOE has used independent organizations to evaluate DOE computer activities. For example, the Federal Simulation Center (FEDSIM) has performed four recent reviews at DOE sites. Teams consisting of DOE personnel and independent consultants have also been successfully utilized. At the operations offices, reviews of the contractor computer facilities within their cognizance are held on a scheduled basis. Finally, the audit group of the Inspector General's Office has performed reviews of computer activities. While the specific purpose of the various reviews have differed, all have resulted in management actions. These actions include changes in management approach, reconfiguration of systems hardware, and reassessment of computing requirements.

PRINCIPAL OFFICIALS

RESPONSIBLE FOR ADMINISTERING ACTIVITIES

DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To

DEPARTMENT OF ENERGY

	From	To
Secretary of Energy:		
James R. Schlesinger	Oct. 1977	Present
Deputy Secretary of Energy:		
John F. O'Leary	Oct. 1977	Present
Energy Information Administration:		
Lincoln Moses	Jan. 1978	Present
C. William Fischer (acting)	Oct. 1977	Jan. 1978
Controller:		
Jerome A. Miles	Feb. 1978	Present
John Young (acting)	Oct. 1977	Feb. 1978
Director of Administration:		
William S. Heffelfinger	Oct. 1977	Present