GAO ENERGY DIGEST

SEPTEMBER 1977

A BIBLIOGRAPHY ISSUED BY THE COMPTROLLER GENERAL OF THE UNITED STATES

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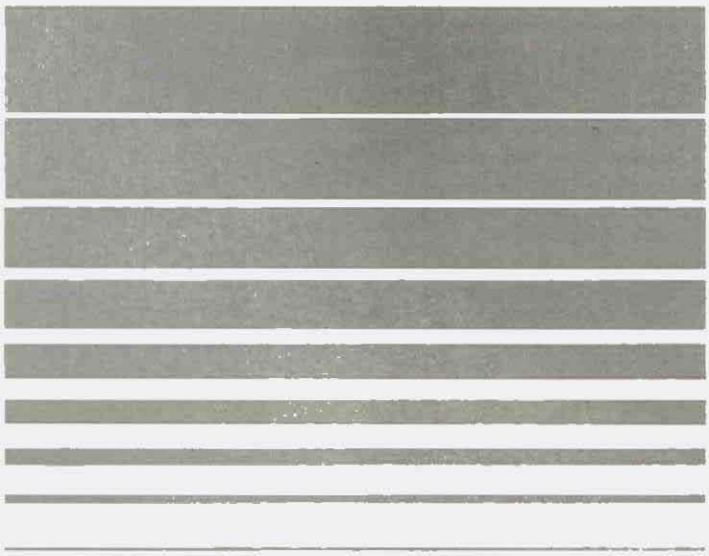

U.S. GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

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Introduction

The *Energy Digest*, the first in a series of planned topical digests, brings together all of the available unrestricted documents on energy-related matters that GAO has issued from July 1972 through March 1977. For the most part, this publication was derived from computerized GAO data bases.

Designed to serve as a desk reference, the *Energy Digest* contains over 200 audit reports, special studies, letters, speeches, and testimony. Topics covered include energy conservation, nuclear fission, fossil fuels, Federal financial incentives, regulatory matters, executive branch energy organization and decisionmaking, renewable resources, energy sources on Federal lands, and domestic and international energy policies. Also included in the appendices are pertinent references from GAO's Congressional Sourcebook Series.

HOW TO USE THE ENERGY DIGEST

The *Digest* is organized into three sections: a CITATION section, an APPENDIX section, and an INDEX section.

Citation Section

The CITATION section consists of brief descriptions of the documents, arranged under broad subject categories for easy browsing. (See the Table of Contents for a listing of the subject categories.) Many citations incorporate informative abstracts. Some or all of the following information is contained in each citation: accession number, title, document number, date, pagination, type of document, addressee, author/witness, agency/organization, congressional relevance, law or statutory authorities related to the document, and an abstract. A sample entry is shown immediately preceding the CITATION section.

Appendix Section

This section contains four appendices. Appendices 1-3 were derived from the machine-readable data bases developed by GAO's Program Analysis Division for the Congressional Sourcebook Series; Appendix 4 was compiled by GAO's Energy and Minerals Division. All items in each of the appendices are in sequential accession number order. The four appendices are described below:

(1) *Federal Program Evaluations on Energy.* Contains executive agency energy program evaluation reports, arranged alphabetically by title.

(2) *Requirements for Recurring Reports to the Congress on Energy.* Contains bibliographic citations of energy reports submitted to the Congress, arranged by agency. Both required reports and those volunteered by Federal departments and agencies are included.

(3) *Federal Information Sources and Systems on Energy.* Lists by agency Federal energy information sources and systems. A contact and telephone number are given for each entry.

(4) *Major Energy Legislation.* Includes abstracts of significant energy legislation enacted through the 94th Congress.

Index Section

The INDEX section is comprised of four separate indexes, enabling the user to search for information by any one or combination of the following points:

(1) Subject Index

(2) Agency/Organization Index
(Includes both Federal agencies and nongovernmental corporate bodies)

(3) Law/Authority Index
(Includes entries under Public Law names and numbers, U.S. Statutes-at-Large references, U.S. Code references, House and Senate bill names and numbers, and other statutory authorities)

(4) Congressional Index
(Includes entries under relevant congressional committees/agencies and individual Representatives and Senators to whom documents are addressed)

HOW TO OBTAIN DOCUMENTS

Please order documents listed in the CITATION section by their accession numbers. All such documents are available on request from the following unit:

Distribution Section
U.S. General Accounting Office
441 G Street, N.W., Room 4522
Washington, D.C. 20548

Telephone: (202) 275-6241

Documents and information cited in Appendices 1-3 are not stocked at the General Accounting Office. *Contact the originating agency indicated.*

Public Laws cited in Appendix 4 may be found in the U.S. Code or the Statutes-at-Large. If the laws have not been codified, copies may be obtained from:

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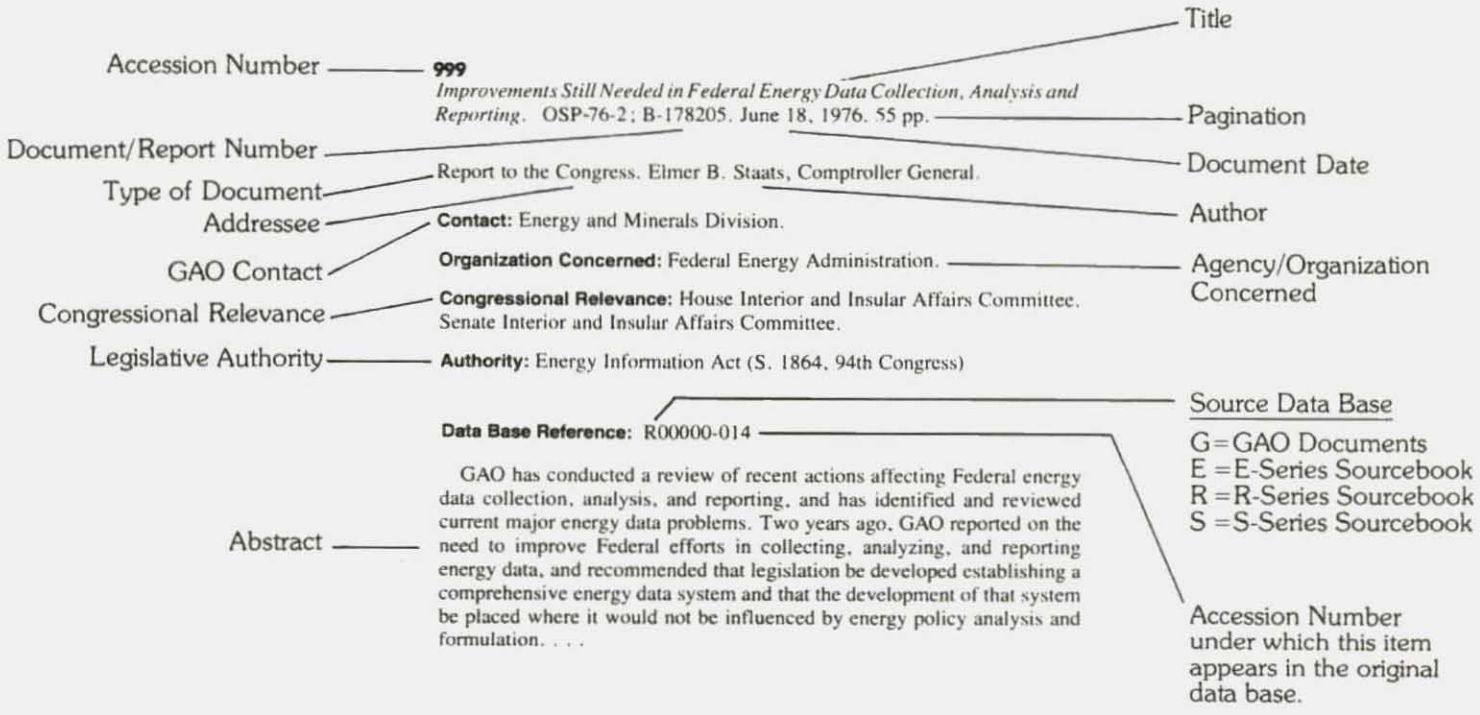
SAMPLE ENTRY



Citation Section

HOW DO FEDERAL EFFORTS AFFECT ENERGY CONSERVATION ACTIONS?

001

[*Dual Fuel Program*]. B-114807. May 31, 1973. 2 pp.
Report to Arthur F. Sampson, Acting Administrator, General Services Administration; by J. K. Fasick, Director, Logistics and Communications Div.

Organization Concerned: Federal Supply Service.

Weaknesses were found in the management and control of the Dual Fuel program, an experimental effort to reduce automobile engine emissions by converting vehicles to use both natural gas and gasoline, which is administered by the Federal Supply Service of the General Services Administration (GSA). *Findings/Conclusions:* On the basis of initial results from tests of 12 converted vehicles which showed reductions in emission and operating costs, over $2 million was authorized to convert and test 1,400 additional vehicles, of which about 1,000 were actually converted. Only limited data were gathered and analyzed. The data were not accumulated primarily because GSA did not insure that the vehicles would be run on natural gas. Most operators continued to use gasoline; others used natural gas less than one third of the time. In planning for this expanded test, GSA did not adequately consider the control needed over vehicles being tested, since most cars were assigned to other agencies, and fueling facilities were limited. A smaller, more closely controlled fleet under realistic fuel servicing conditions could have produced more useful data. (DJM)

002

[*Energy Conservation in Federal Office Buildings in California*]. B-178205. September 12, 1973. 4 pp.
Report to Arthur F. Sampson, Administrator, General Services Administration; by Robert G. Rothwell (for Fred J. Shafer, Director, Logistics and Communications Div.).

Substantial improvement could be made in energy conservation in General Services Administration operated Federal office buildings in California. *Findings/Conclusions:* The major energy consuming operations in centrally air conditioned buildings were illumination, air handling, cooling, and heating. Utility costs per square foot varied by more than a factor of two for buildings in the same class and climate. While such things as 24-hour operation and computer equipment explained some of the higher costs, the chief reason was ineffective building operations. Examples cited include cooling buildings in winter, heating in summer, around the clock operation for a 5% nighttime occupancy, ventilation of unoccupied buildings, and overillumination. (DJM)

003

[*Ways in Which Department of Housing and Urban Development Can Promote Energy Conservation*]. B-114860. January 3, 1974. 8 pp.
Report to Secretary, Department of Housing and Urban Development; by Henry Eschwege, Director, Resources and Economic Development Div.

The Department of Housing and Urban Development's (HUD) minimum property standards for achieving maximum energy conservation in new single-family homes could be strengthened, and thermal standards should be formulated for existing single family homes. *Findings/Conclusions:* HUD minimum property standards for thermal insulation, also used by the Department of Agriculture and the Veterans Administration and widely influential in the private construction industry, are too weak. Significant energy savings would result if thermal standards similar to those established for multifamily dwellings were extended to single-family homes. For example, in the Washington area, research reveals that a 32% saving would be achieved with greater insulation. *Recommendations:* Current thermal standards for new single-family homes should be revised to equal the multifamily standards. Similarly, thermal standards for existing housing to be insured under Federal programs should be established and should include criteria for caulking and weatherstripping. (DJM)

004

[*Federal Efforts to Conserve Fuel in the Movement of Men and Materials*]. B-178205. March 29, 1974. 10 pp.
Report to William E. Simon, Administrator, Federal Energy Administration; by Phillip S. Hughes, Assistant Comptroller General.

Federal efforts to conserve fuel in the movement of men and materials affect the Government's ability to provide leadership in fuel conservation efforts. *Findings/Conclusions:* Genuine efforts are being made to conserve fuel, but certain management aspects of the conservation program require attention or improvement. These aspects concern the adequacy of the data used to measure the success of conservation actions, the information system for collecting this data, the role of the individual agencies' energy conservation officers, and the efforts to reduce motor vehicle fuel consumption. A number of deficiencies in data supplied by the agencies illustrate the need to develop adequate information systems to quantify fuel usage so its volume can be known and the effect of various conservation actions can be measured. Instructions have been issued to reduce gasoline consumption of Government vehicles, but continuing attention is needed to ensure that they are implemented in actual practice. *Recommendations:* The Federal Energy Administration should issue guidelines for the development of energy-use information systems and monitor agency progress. The role of agency energy conservation officers should be broadened. Motor vehicles–their numbers, size, and gas consumption–need continuing attention. (DJM)

005

[*Energy Efficiency Ratios of Window Air-Conditioners*]. B-132396. May 28, 1974. 3 pp. + enclosure (1 pp.).
Report to Arthur F. Sampson, Administrator, General Services Administration; by Fred J. Shafer, Director, Logistics and Communications Div.

Organization Concerned: Federal Supply Service.

Window air-conditioning models available from manufacturers must meet General Services Administration (GSA)-specified minimum energy efficiency ratios for purchase by Federal agencies. *Findings/Conclusions:* While energy-efficient air-conditioners cost more initially, the cost is more than offset by the savings in electricity over their useful life. Government agencies bought about 2,660 less efficient units in the past few years. Had more efficient units been procured, the Government would have saved $236,000 over the 12-year life cycle, figured on very conservative electricity costs. The Federal Supply Service (FSS) has already revised its procurement specifications with this in mind. *Recommendations:* The FSS should consider whether minimum standards should be raised for other major energy-using products now being purchased by the Government. (DJM)

006

[*Energy Conservation Practices Encouraged by States*]. B-178205. August 15, 1974. 11 pp
Report to John C. Sawhill, Administrator, Federal Energy Administration; by Monte Canfield, Jr., Director, Office of Energy and Special Projects.

Organization Concerned: Federal Power Commission.
Authority: P.L. 93-275. F.P.C. Order 495.

Several problems were identified in a survey of the energy conservation practices being encouraged by State utility commissions and public utilities. ***Findings/Conclusions:*** These problems involve the need for (1) evaluation of the effectiveness of existing or planned energy conservation practices of utilities; (2) additional authority for State utility commissions to require or promote energy conservation practices; and (3) intensification and coordination of the Federal effort. In addition to voluntary efforts by the public, several other conservation actions were being taken by public utilities and commissions involving rate-structure changes and the installation of energy-saving devices. A number of State regulatory agencies do not consider conservation their responsibility or lack authority to regulate utilities. ***Recommendations:*** The Office of Conservation and Energy should increase its efforts to evaluate and advocate energy conservation practices by utilities, provide technical assistance to utilities and regulatory agencies in setting standards for evaluating results of conservation, and advocate legislation to strengthen the authority of State regulatory agencies. All such efforts should be coordinated with the Federal Power Commission. (DJM)

007

How Federal Agencies Can Conserve Utilities and Reduce their Cost. B-178205. September 17, 1974. 40 pp. + 7 appendices (16 pp.).
Report to Secretary, Department of Defense; Administrator, General Services Administration; by Fred J. Shafer, Director, Logistics and Communications Div.

Organization Concerned: Federal Energy Administration.

Responsibility for utility management in Federal Government facilities rests mainly with the General Services Administration (GSA) and the Department of Defense (DOD); energy usage is monitored by the Office of Energy Conservation (OEC), Federal Energy Administration (FEA). ***Findings/Conclusions:*** The OEC reported an overall reduction of 23% and a reduction of 11% in energy used in building and facility operations during the first half of FY 1974. Of 19 installations reviewed by GAO, 12 had no utility conservation and management plans, and conservation was being given insufficient attention at the installation level. Although there was an acceleration of energy-related activity after April 1973, planning in building design and construction needs improvement. Also, installations did not have the necessary information for making the most economic selection in utility procurement, and lacked trained personnel with expertise in the utility area. Since completion of GAO fieldwork, energy guidelines have been issued by FEA and GSA.
Recommendations: GSA, in coordination with DOD, FEA, and, where necessary, the Office of Management and Budget, should: (1) consider using utility rate consultants until in-house expertise has been developed; (2) provide and train personnel for managing utilities effectively; and (3) advise Federal agencies to disseminate information on utility management within their organizations. (HTW)

008

[*Energy Conservation Program at Five Government Contractors*]. B-178205. October 29, 1974. 7 pp.
Report to James R. Schlesinger, Secretary, Department of Defense; by Richard W. Gutmann, Director, Procurement and Systems Acquisition Div.

A survey of energy conservation programs of five Government contractors indicated that the contractors were taking some actions to conserve energy. The Department of Defense (DOD) has also taken some steps to have contractors establish energy conservation programs. ***Findings/Conclusions:*** The need for greater commitment toward conservation by contractors was evident from the organization and personnel assigned to some of the programs. Capital expenditures for conservation projects had to be recovered through savings in a short time, and there was a lack of baseline data on energy use that would provide a basis for planning and setting goals. For these contractors to achieve energy reductions, the DOD and other agencies will have to become more directly involved in conservation and improve and coordinate their actions to achieve maximum benefits. ***Recommendations:*** A formal Government-wide energy conservation policy should be developed for contractors, and the responsible Federal agencies should coordinate their actions with respect to monitoring and following up on the contractors' implementation of programs. (DJM)

009

[*Efforts to Encourage Conservation in the Private Sector*]. B-178205. November 12, 1974. 4 pp.
Report to John C. Sawhill, Administrator, Federal Energy Administration; by Monte Canfield, Jr., Director, Office of Special Programs.

The Federal Energy Administration (FEA) should expand its leadership role within the Federal Government to encourage participation by all agencies and departments in identifying actions that encourage and effect energy conservation in the private sector. ***Findings/Conclusions:*** The FEA and several departments surveyed implemented extensive promotional and educational energy conservation programs. However, there were inconsistent and unsystematic efforts among departments, and some had done relatively little. This indicated the need for an overall plan designed to marshall the resources of the Federal Government to effect changes in laws affecting private energy use. Considerable benefit could come from further improving FEA's interagency coordination and guidance in identifying specific energy conservation programs that will significantly save energy in the private sector. Some Federal officials believed that the problem of obtaining the resources needed to evaluate and implement conservation measures could be alleviated by FEA leadership. ***Recommendations:*** FEA must develop and coordinate a comprehensive Federal effort to evaluate and, where necessary, change the many Federal laws, regulations, and policies which touch on private energy use; and provide guidelines to other Federal bodies setting forth their roles and responsibilities. (DJM)

010

[*Federal Efforts to Conserve Energy*]. B-178205. November 14, 1974. 4 pp. + enclosure (2 pp.).
Report to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.

A 1974 report on Federal efforts to conserve energy recommended that: (1) the Administrator of the Federal Energy Administration (FEA) issue guidelines for Federal agencies to use in developing energy-use information systems; and (2) attention be paid to instructions involving reductions in motor vehicle fuel consumption. ***Findings/Conclusions:*** Federal efforts to conserve energy have been only partially successful. The FEA has not issued the type of guidelines recommended by GAO pertaining to the development of energy-use information systems and their monitoring. FEA has issued a memorandum on the responsibilities of energy conservation officers. Instructions for the purchase of compact vehicles in lieu of prestige vehicles and driving fewer miles have had some effect. The instructions provided for exemptions to mileage reduction, but only

2 out of a total of 30 requests for exemptions were approved. The mileage reduction requirement has been lowered from 20% to 15%. (DJM)

011

[*The Energy Impact of Moving Department of Defense Activities from the Military Ocean Terminal, Brooklyn, New York, to Bayonne, New Jersey*]. LCD-74-353; B-178205. December 31, 1974. 4 pp. + enclosures (3 pp.).
Report to Rep. Hugh L. Carey; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Defense; Department of the Army; Department of the Navy.
Congressional Relevance: *Rep.* Hugh L. Carey.

The Army estimated the changes in energy consumption resulting from the move of Department of Defense activities at the Military Ocean Terminal, Brooklyn, New York, to Bayonne, New Jersey, and GAO made estimates from the information provided. ***Findings/Conclusions:*** Army estimates show savings of from 1.6 to 2.2 million gallons of heating oil annually resulting mainly from the heat's being turned off in the Brooklyn space, and the Bayonne space's being either fully heated or being heated to 55 degrees. The savings in heating-oil consumption will be partly offset by an increased gasoline requirement of about 196,500 gallons annually by commuting employees. There will be a net increase of about 80,000 kilowatt-hours of electricity consumption annually. The total costs of moving the Army activities are expected to be $4.87 million. The Army expects savings of about $2.3 million a year as the result of eliminating 147 personnel associated with base operation functions at Brooklyn and reducing overall fuel requirements. The Navy does not expect any savings from the move. Moving the Bayonne activities to Brooklyn instead of the reverse does not appear feasible because of the lack of space and poorer layout and condition of facilities at Brooklyn. (QM)

012

[*The Department of Defense's Conservation of Petroleum*]. LCD-75-430; B-178205. February 24, 1975. 10 pp. + enclosures (5 pp.).
Report to Sen. John C. Stennis, Chairman, Senate Committee on Armed Services; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Defense; Department of the Navy; Department of the Army; Department of the Air Force.
Congressional Relevance: *Senate* Committee on Armed Services.

During 1974, the Department of Defense (DOD) used 185.7 million barrels of petroleum fuels, about 3% of the national consumption. DOD expected to use 203.7 million barrels in fiscal year 1975, about 3.4% of national consumption. ***Findings/Conclusions:*** DOD established the following organizations to deal with energy matters: a Defense Energy Task Group to review energy-related problems and recommend solutions; a Defense Energy Policy Council to develop broad energy policy guidelines; and a Defense Energy Action Group to help coordinate the implementation of the Council's guidelines and to provide a forum for exchanging information. There is also a Director for Energy whose responsibilities include: developing a petroleum logistics policy; assisting in the development of DOD's energy budgets; serving as DOD's principal point of contact on all energy matters and on implementation of energy policy; managing DOD's energy conservation program; monitoring the implementation of the task group's recommendations; and developing a Defense energy information system. During fiscal year 1974 DOD showed a 29% reduction in petroleum usage from the previous year, largely due to a reduction in flying hours and ship-steaming hours and other actions to conserve aircraft and ship fuel. Rising fuel prices have, however, put DOD in the position of spending more while using less.

Recommendations: An additional way to promote energy conservation in DOD might be to give residents of military housing an allowance for energy costs and charge them for energy actually consumed. DOD should continue to keep its conservation programs alive and active. (QM)

013

Using Solid Waste to Conserve Resources and to Create Energy. RED-75-326; B-166506. February 27, 1975. 62 pp. + 3 appendices (7 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: Congress.
Authority: Resource Recovery Act of 1970 (42 U.S.C. 3251). Solid Waste Disposal Act of 1965 (42 U.S.C. 3251). P.L. 93-14. P.L. 93-324.

Resource recovery can help solve problems of energy consumption and conservation, but most importantly of solid waste disposal. Solid waste threatens to become a severe environmental problem in terms of both cost and public concern. ***Findings/Conclusions:*** Though the Environmental Protection Agency (EPA) has been slow in implementing the resource recovery provisions of the Resource Recovery Act of 1970, improvement has been made, particularly with respect to the required studies and investigations. The key to resource recovery is economics. The Government can take several actions to make secondary materials more attractive for recovery, such as product controls, and Federal procurement, tax, and freight rate policies to provide incentives to promote recovery. Development of systems that recover metals and glass from solid waste and convert the remainder into energy needs to be encouraged. About 80% of municipal waste can be burned to generate energy. Several demonstration projects for resource recovery have been funded by the Federal Government. ***Recommendations:*** EPA should provide expanded Federal assistance to States and local communities to solve their solid waste problems via resource recovery systems in such ways as: determining whether a system would be appropriate for a particular community, selecting a particular system, obtaining markets for the system's products, getting a number of communities to participate jointly in a system, and providing assistance in the initial operating phase of a system. (DJM)

014

Bulk Fuels Need To Be Better Managed. LCD-74-444; B-163928. April 8, 1975. 21 pp. + appendices (6 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Defense; Department of Defense: Defense Fuel Supply Center, Alexandria, VA.
Congressional Relevance: Congress.

Much of the Department of Defense's (DOD's) total fuel storage requirements are not supported by an inventory of fuel because fuel storage is unavailable. ***Findings/Conclusions:*** DOD has been unable to lease additional storage and has no plans to construct storage. The military services did not always furnish contractor-operated terminals with contingency plans for delivering fuel during an emergency. Some estimates of fuel needs for U.S. military forces in the United States and overseas are excessive because DOD's formula for computing requirements uses factors such as predetermined levels rather than levels based on usage and provides for increases in requirements to include quantities in pipelines and storage tank bottoms. Fuel requirements in the United States and the Pacific Theatre are overstated by at least 2.6 million barrels. Because the services have final authority over which product should be stored in their tanks, the Defense Fuel Supply Center has not been able to obtain full use of storage, meet the services' fuel requirements, or improve overall storage management. ***Recommendations:*** The services should revaluate war reserve requirements and implement a plan to provide adequate storage capacity. The Secretary should give the Defense Fuel Supply Center more authority over the assignment of products to storage facilities. The Defense Fuel Supply Center should: take steps to insure timely preparation and distribution of the "Inventory Management Plan"; change its procedure for computing

peacetime operating stockage objectives; and review the use of Government-owned storage to determine the need for leased storage, develop specific plans for covering current lacks in fuel quantities, and coordinate the funding for the fuel and storage capability. The Navy should count usable stocks in tank bottoms and pipelines in computing its war reserve requirements. (Author/QM)

015

Energy Conservation. April 16, 1975. 12 pp. + 2 appendices (4 pp.).
Testimony before the Senate Committee on Government Operations; by Phillip S. Hughes, Assistant Comptroller General.

Congressional Relevance: Energy Research and Development Administration; Federal Energy Administration.

Energy conservation must be a key element of a national energy policy which will significantly alter recent patterns of energy consumption. A variety of conservation measures will have to be taken. In the transportation area, changes in the Nation's driving habits can be brought about by rebates for energy efficient cars, mandatory fuel standards for new cars, a gas tax, and a gas guzzler tax on large inefficient automobiles. Tax credits can be extended for home and business insulation and for energy efficient industrial equipment. Thermal performance standards for homes should be upgraded. Import quotas can help reduce oil imports by two million barrels over a 2-3 year period. A new Department of Energy and National Resources consisting of the key energy-related agencies of Government should be established. The Government can play two conservation roles–as a consumer itself, and by laws, programs, and policies in the private sector. A formal Government-wide mandatory contractor conservation policy should be developed with monitoring and followup. State utility commissions and public utilities could be provided information and assistance in evaluating conservation practices. (DJM)

016

Review of the Progress and Problems of Resource Recovery Since the Passage of the Resource Recovery Act of 1970. April 16, 1975. 11 pp.
Testimony before the House Committee on Interstate and Foreign Commerce: Transportation and Commerce Subcommittee; by Henry Eschwege, Director, Resources and Economic Development Div.

Organization Concerned: Environmental Protection Agency.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Transportation and Commerce Subcommittee.
Authority: Resource Recovery Act of 1970. Solid Waste Disposal Act of 1965. H.R. 5487 [94th Cong.].

The Resource Recovery Act of 1970 redirected waste programs from disposal to recycling. Under this legislation, the Environmental Protection Agency (EPA) awarded grants for demonstration projects, but none had been completed. Issues noted relating to the economics of resource recovery were: (1) discrimination in freight rates in favor of virgin over recovered materials; (2) Federal procurement policy toward products containing recovered materials; and (3) taxes which favor virgin materials. Another area recommended for consideration was the use of solid waste as energy by combustion or conversion. Enhancement of EPA assistance to State and local governments was recommended through determination of the appropriateness of resource recovery systems, obtaining markets for products, joint participation of communities, and assistance in initial phases. Although analysis of H.R. 5487 was not complete, it was felt that provisions for the Comptroller General to participate in arbitration between procuring agencies and suppliers should be deleted and provisions should be developed for GAO access to records. (HTW)

017

[*Comparison of Energy Use in Five Federal Office Buildings*]. LCD-75-341; B-178205. April 18, 1975. 2 pp. + enclosures (20 pp.).
Report to Rep. Charles A. Vanik; by Robert G. Rothwell (for Fred J. Shafer, Director, Logistics and Communications Div.).

Organization Concerned: General Services Administration.
Congressional Relevance: *Rep.* Charles A. Vanik.

Energy consumption and cost information for five Federal Office Buildings was obtained from utility bills and General Services Administration records: the Anthony J. Celebrezze Federal Building in Cleveland, Ohio; the John F. Kennedy Federal Building in Boston, Massachusetts; the Federal Building in Kansas City, Missouri; the Federal Building in Los Angeles, California; and Federal Building 10A in Washington, D.C. *Findings/Conclusions:* Energy use in the five buildings, principally electricity and steam, was substantially lower in 1974 (although the cost was in some cases higher) than in the same months of 1972. Electricity use quantity was 16% under and cost was 32% above the 1972 figures for the Cleveland building, while steam/gas quantity was 40% lower and cost was 15% lower. In the Boston building the quantity of electricity use was 24% below the 1972 figure and the cost was 38% above it. The quantity of steam/gas use was 22% below and the cost of the steam/gas was 78% over the 1972 figures in that building. The Kansas City building showed a reduction in all quantity and cost figures: a 25% quantity and 10% cost reduction in electricity use in 1974 and a 36% quantity and 12% use reduction in steam/gas use. Electricity use quantity was 40% below and cost was 62% above the 1972 figures for the Los Angeles building, while steam/gas usage was 79% and 70% lower for usage and cost. The Washington, D.C., building showed a 37% reduction and a 42% increase in electricity use quantity and cost, respectively, and a 3% reduction and 6% increase in steam/gas usage quantity and cost. (Author/QM)

018

Improvements Needed in Controls and Accounting for Ground Vehicle Petroleum. LCD-75-218; B-163928. May 20, 1975. 2 pp. + appendices (18 pp.).
Report to Secretary, Department of Defense; by Fred J. Shafer, Director, Logistics and Communications Div.

Organization Concerned: Department of the Navy; Department of the Army; Department of the Air Force.

Unaccounted-for petroleum shortages of 114,000 gallons were found at three out of four audited Army installations, and petroleum issues totaling 2.3 million gallons could not be validated because the records and/or documentations were not available. *Findings/Conclusions:* These conditions occurred because: the prescribed system did not promptly identify shortages; practices did not conform to prescribed accounting procedures; controls did not adequately insure that issues were made only for authorized purposes; and, in some instances, dispensing and storage facilities did not function properly or were antiquated and inadequate. In contrast to the poor management at most of the Army activities, management controls and accountability practices were generally good at Fort Bragg. The audited Navy and Air Force activities managed and followed procedures which provided much better control over and accountability for petroleum. *Recommendations:* The Secretary of Defense should: study the feasibility of establishing and implementing a uniform DOD system for petroleum management patterned after the Air Force and Navy systems; direct the Secretary of the Army to take immediate action to enforce the Army's existing procedures for control over and accountability for petroleum pending the results of the Secretary of Defense's study; and direct the Secretary of the Army to have the Army Audit Agency perform an Army wide audit of the management of petroleum used by ground vehicles to insure that the actions are implemented promptly and properly. If the audit indicates possible improprieties in the handling of petroleum, the Secretary of the Army should direct the Army's Criminal Investigation Command to determine whether any criminal actions were involved. (Author/QM)

019

National Standards Needed for Residential Energy Conservation. RED-75-377; B-178205. June 20, 1975. 28 pp. + appendices.
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Housing and Urban Development; Energy Research and Development Administration.
Congressional Relevance: Congress.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438). Solar Heating and Cooling Demonstration Act of 1974 (P.L. 93-409).

The residential sector consumes over 19% of the total energy used in the United States. A national program is needed to achieve maximum energy efficiency in the residential sector. ***Findings/Conclusions:*** Most existing housing units are in need of thermal improvements, and new construction is not concentrating on energy efficiency. According to estimates, energy conservation measures could result in savings of 30% and 60% for old and new buildings, respectively. Reasons for failure to utilize such measures include emphasis on initial costs, technological problems, limited use of Department of Housing and Urban Development's (HUD) minimum property standards, and limited research. Comprehensive legislation is necessary to achieve energy-efficient housing. Bills before Congress require policy decisions related to costs, lifestyles, and Federal incentives to industry. Legislation could include actions such as establishing a national energy conservation program, requiring establishment of national energy performance standards, providing incentives for retrofitting homes, and requiring efficiency labeling of appliances. ***Recommendations:*** Before enactment of new legislation, HUD should stress energy conservation by emphasizing operating costs as well as initial construction costs, establishing thermal standards for Federally-insured housing, and contracting for more energy-efficient housing subsystems. (HTW)

020

The Navy's Practice of Discharging Fuel at Sea. LDC-76-420; B-146333. December 12, 1975. 8 pp. + 2 enclosures.
Report to Rep. Ralph H. Metcalfe; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Navy.
Congressional Relevance: *Rep.* Ralph H. Metcalfe.

It is a common practice for Navy vessels to discharge fuel into the sea. ***Findings/Conclusions:*** Fuels are discharged into the sea when (1) water is removed from tanks, (2) tanks are flushed and cleaned, and (3) residue is pumped from bilge and ballast tanks. Navy records were not adequate for calculating the exact quantities of fuel discharged. Available records showed that, during fiscal years 1974 and 1975, oilers and carriers discharged from fuel tanks at least 13 million gallons of a water and fuel mixture, with estimated fuel value of about $500,000. The Navy has developed procedures to stop dumping aviation gasoline and has set a goal of ceasing all oily discharges from all ships through ship alterations. ***Recommendations:*** Fuel management and control of fuel discharges should be improved by: (1) requiring survey reports to be submitted; and (2) expanding reporting systems to show discharges from all vessels, include more details, and show estimated volumes of fuel against water discharged. (HTW)

021

Progress and Problems of the Government's Utility Conservation Program. LCD-76-311; B-178205. December 30, 1975. 19 pp. + 2 appendices (5 pp.).
Report to Rep. William S. Moorhead, Chairman. House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: General Services Administration; Department of Defense.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Federal Management Circular 74-1, as supplemented.

The General Services Administration (GSA) and the Department of Defense (DOD), who manage the greatest proportion of Government buildings, have taken steps to improve design and construction for energy conservation, but further improvements are needed. ***Findings/Conclusions:*** The process for selection and review of utility rates and charges would be improved by computer assistance. Conservation programs have resulted in large reductions in energy use, but greater reductions would result from more stringent enforcement. Record maintenance for utility contract administration was adequate at DOD installations, but inadequate at GSA regions, and personnel skilled at procuring and managing utilities was lacking at most of the locations. ***Recommendations:*** GSA and DOD should: (1) make greater use of computers in reviewing utility charges; (2) enforce prescribed Federal lighting and heating standards; and (3) provide for personnel trained in utility management. GSA should ensure satisfactory maintenance of utility records. (HTW)

022

Potential for Using Electric Vehicles on Federal Installations. LCD-76; B-135945. March 3, 1976. 3 pp. + appendix (17 pp.).
Report to Rep. Gilbert Gude; by Elmer B. Staats, Comptroller General.

Organization Concerned: Environmental Protection Agency.
Congressional Relevance: *Rep.* Gilbert Gude.

Many conventional, high performance vehicles restricted to on-the-facility use at Federal installations could be replaced by electric vehicles or low-performance, gasoline-powered vehicles. Replacing conventional vehicles with low-performance vehicles of either electrical or conventional design would result in lower energy consumption and lower air pollution levels. ***Findings/Conclusions:*** There are more than 400,000 off-the-road electric vehicles in service in the United States, and their market is well established. Electric vehicles are special purpose vehicles, and low performance characteristics such as short ranges, low acceleration, and poor hill climbing ability restrict their usefulness. While electric vehicles do not produce exhaust gas emissions, they do contribute to air pollution when they use electricity generated in powerplants fueled by coal or oil. Electric vehicles use less petroleum and will conserve energy as they replace high-powered conventional vehicles, particularly in low-speed, multistop driving. Off-the-road electric vehicles are likely to be economically attractive because their acquisition cost is comparable to the conventional vehicles they replace. On-the-road electric vehicles are less likely to be economically attractive because their acquisition costs are often two to three times higher than the conventional vehicles they replace. (RRS)

023

Policies and Programs Being Developed To Expand Procurement of Products Containing Recycled Materials. PSAD-76-139; B-166506. May 18, 1976. 19 pp. + appendices (7 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Defense; General Services Administration; Environmental Protection Agency.
Congressional Relevance: Congress.

Authority: Energy Policy and Conservation Act of 1975 (P.L. 94-163). Resource Recovery Act of 1970 (P.L. 91-512). Solid Waste Disposal Act. Federal Property and Administrative Services Act of 1949.

Efforts are being made within the Government to increase the use of recycled materials in products being purchased by Federal agencies. The benefits of using recycled products include: significant savings in energy, conservation of scarce natural resources, reducing the volume of waste requiring disposal, and alleviating dependency on foreign sources of supply. *Findings/Conclusions:* Federal initiatives for the use of recycled products involve: (1) a General Services Administration (GSA) program to purchase recycled paper; (2) guidelines by the Environmental Protection Agency for procuring products containing recycled materials; and (3) enactment of an act promoting the use of recycled oil. There is a need for more management emphasis by GSA and the Department of Defense (DOD) to further expand procurement of recycled products. *Recommendations:* GSA should establish a formal program for procuring recycled products and insure that the efforts it has made in purchasing recycled paper products are extended to other commodity areas. The DOD should develop a coordinated program to aggressively promote the procurement of products with recycled material content. (RRS)

024

[*Department of Commerce's "SavEnergy Citations"*]. OSP-76-24; B-178205. May 27, 1976. *Released* June 8, 1976. 3 pp. + 3 enclosures (7 pp.).
Report to Rep. Philip R. Sharp; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Department of Commerce; Federal Energy Administration.
Congressional Relevance: *Rep.* Philip R. Sharp.

The "SavEnergy Citation" activity of the Department of Commerce was designed to encourage companies to commit themselves to the adoption of effective energy management programs. A "SavEnergy Citation" was sent to the chief executive of each of the selected companies pledging a high-priority energy management program. *Findings/Conclusions:* The citation activity was not designed to be an ongoing activity, but was intended to impress upon American industry the importance of effective energy management. The Department has received most of the expected responses and sent out most of the citations. Of the 43,000 companies contacted in 1973, about 8,000 responded and received citations. About 17,000 of the 154,000 companies contacted in 1975 responded. The cost of the 1973 activity was not available; the 1975 activity cost approximately $42,000. (RRS)

025

Status of Federal and Private Research and Development Efforts to Conserve Energy by Reducing Electric Power Transmission Losses. RED-76-107. June 1, 1976. 15 pp.
Staff study by Henry Eschwege, Director, Community and Economic Development Div.

Organization Concerned: Energy Research and Development Administration.
Authority: P.L. 93-438.

Reducing electrical energy losses during transmission would contribute to the energy conservation effort. *Findings/Conclusions:* Electric energy is lost during transmission because of certain laws of physics which affect electricity in various types of transmission systems. Four factors cause most of the loss of electric energy during transmission: resistance, skin effect, corona, and insulation. Resistance and skin effect cause most power losses during overhead transmission, about 2.5% of net generation. Estimated transmission losses during 1975 were equivalent to about 80 million barrels of oil (about a 4.5-day requirement). Theoretically, transmission losses can be reduced by increasing the conductor's cross-section areas, raising transmission voltage levels, and lowering the line's temperature. Lowering conductor temperature will also reduce resistance losses. Opportunities for large reductions in transmission losses in the near future are limited without new technological breakthroughs. Future research emphasis may change depending on changing needs. (RRS)

026

Opportunities for More Effective Use of Animal Manure. RED-76-101; B-166506. June 14, 1976. 27 pp. + 5 appendices (13 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Environmental Protection Agency; Department of Agriculture; Energy Research and Development Administration.

Manure is a valuable economic asset which can be used as fertilizer or from which byproducts can be recovered. *Findings/Conclusions:* About half of the animal manure (1 billion lbs.) produced annually in the United States is generated in feedlots and confinement areas and is easily recoverable. Many farmers do not realize the full potential of manure as fertilizer, or misapply it, alone or in conjunction with chemical fertilizers. The need exists for readily available soil and manure testing for farmers. Manure can be used to produce methane gas and ammonia, converted into fuel by pyrolysis or high pressure with residues turned into industrial products as carbon black or insulation, processed and refed to animals, or composted. *Recommendations:* The Department of Agriculture should educate farmers as to the benefits and use of manure as fertilizer, and facilitate soil and manure testing for agricultural users. The Environmental Protection Agency should promote intraagency agreements directed toward making animal manure use technology commercially viable. (Author/DJM)

027

Energy Conservation Financing. July 26, 1976. 7 pp. + enclosures (7 pp.).
Testimony before the House Committee on Banking, Currency and Housing: Economic Stabilization Subcommittee; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Federal Energy Administration; Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Banking, Currency and Housing: Economic Stabilization Subcommittee.
Authority: Federal Energy Administration Extension Act; H.R. 12169 (94th Cong.). Energy Policy and Conservation Act. H.R. 14205 (94th Cong.).

Both H.R. 14205 and H.R. 12169 would increase national attention and activity in energy conservation. Neither bill, however, addresses conservation opportunities available in the transportation sector. Subsidized public transportation for low-income persons, the purchase of buses, and the development of fringe parking lots and express bus lanes should be considered. The bills provide loan guarantees for energy conservation measures and direct loans for small business concerns. Direct Federal assistance is also provided to stimulate conservation in the residential and commercial sectors. Other financial incentives should be considered such as low interest loans, and tax writeoffs or rebates for conservation improvements. No single financial mechanism is universally acceptable for all energy activities. Loan guarantees would not necessarily induce conservation investments by large integrated corporations if they believed that they had an opportunity to receive more return on investment in other activities. The Federal Energy Administration and the Energy Research and Development Administration should be abolished and a new energy organization to be called the National Energy Administration should be created as an interim step toward the establishment of a Department of Energy and Natural Resources. Cer-

tain clarifications and changes should be made to the reporting and review requirements of the Comptroller General under the Federal Energy Administration Extension Act. (Author/QM)

028

Energy Conservation at Government Field Installations: Progress and Problems. LCD-76-229; B-178205. August 19, 1976. 25 pp. + appendices (33 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Defense; Federal Energy Administration; General Services Administration.
Congressional Relevance: Congress.
Authority: Energy Policy and Conservation Act (42 U.S.C. 6201). Federal Management Circular 74-1. B-178205 (1974).

In June 1973, the President started a program to reduce energy use in the Federal Government, which can produce a savings of about $30 million for every 1% of reduction. During 1975, GAO visited 77 military and civil installations and found that, although there had been a general attempt to conserve, much more could be done. Implementation of the provisions of the Energy Policy and Conservation Act will further strengthen the conservation program.
Findings/Conclusions: Deficiencies included a lack of conservation plans, an absence of any individual or group to manage the program, and improper or nonexistent internal and external audits. A need for greater leadership and more agressiveness in promoting conservation was indicated by the lack of idea interchange among installations and the general unawareness of antagonism, or apathy of employees towards conserving energy. Despite the Federal Energy Administration's statement that the Government, generally, was meeting the energy conservation goals, GAO found many installations to be falling short of the goals. The situation was compounded by the continuation of the problem of measuring energy usage completely and accurately. Greater conservation efforts were needed in the size of and frequency of use of vehicles. Further effort was needed in reducing lighting, heating, and cooling usage levels. Mission and training operations needed to be modified to conserve more energy. *Recommendations:* Program management should be improved to promote better procedures and practices, reassess the adequacy of energy conservation goals, review and inspect conservation activities, and stimulate employees to cooperate. Energy consumption data should be better coordinated among agencies and guidelines should be improved. Government regulations concerning vehicle use and size should be better enforced, as should submission of mileage reports to General Services Administration. Some facilities should be modified and lighting, heating, and cooling standards adhered to. Mission and training operations should be studied to determine methods of conserving energy, without adversely affecting their objectives. (Author/SS)

029

On Conservation and Innovation. November 30, 1976. 6 pp.
Speech before World Wildlife Fund, Fourth International Congress, San Francisco, CA; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Government use of public policy to stimulate both conservation and innovation in the use of energy is explored. If we squander our resources, those in the future will pay for our excesses. Innovation in the search for energy can be consonant with conservation. Conservation will not work voluntarily, but will have to be imposed by government. Direct action is seen in rationing, import quotas, auto mileage requirements, and indirect action in excise taxes, investment tax credits, loan guarantees, etc. A mix of both may be necessary. With respect to international coordination of energy policies, it is suggested that the "have" nations do much more than the token gestures to date. (DJM)

030

[*Federal Efforts to Improve the Fuel Economy of New Automobiles*]. B-178205. January 13, 1977. 6 pp.
Report to Elliot Richardson, Chairman, Energy Resources Council; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Department of Transportation; Environmental Protection Agency.
Congressional Relevance: *House* Committee on Science and Technology; *Senate* Committee on Interior and Insular Affairs.
Authority: Energy Reorganization Act of 1974, § 108 (42 U.S.C. 5818).

A Federal task force completed a comprehensive study of the long range energy goals for motor vehicles. The draft report of the task force attempts to present a balanced view of the tradeoffs that may be feasible and necessary among automobile goals beyond 1980.
Findings/Conclusions: The need for balancing Federal emissions standards, safety, and fuel economy is stressed. The United States could achieve, by 1985, fuel savings of four million barrels per day relative to 1975 if a reasonable approach to Federal Government regulation of the automobile occurs. Three types of Federal assistance are identified: (1) relaxation of the standards of their implementation schedule; (2) actions to increase consumer demand for fuel-efficient vehicles; and (3) financial assistance to the automobile manufacturing industry. *Recommendations:* The Energy Resources Council should: establish a followup program to develop and recommend to Congress a balanced set of automobile standards that address feasible levels and timing of Federal emissions, safety, and fuel economy standards beyond 1980. These standards should be reviewed and updated periodically as changes occur in technology and the nation's energy situation. (RRS)

WHAT ARE THE PROBLEMS AND POTENTIAL SOLUTIONS ASSOCIATED WITH MAKING NUCLEAR FISSION A SUBSTANTIAL ENERGY SOURCE?

031

[*The Reactor Inspection Program of the Atomic Energy Commission*]. B-164105. January 19, 1973. 6 pp.
Report to James R. Schlesinger, Chairman, Atomic Energy Commission; by Henry Eschwege, Director, Resources and Economic Development Div.

Authority: 10 C.F.R. 50.

The Atomic Energy Commission (AEC) carries out its statutory responsibility for insuring that nuclear power reactors are constructed and operated in a safe and healthy manner through its reactor inspection program. *Findings/Conclusions:* AEC has 18 quality assurance criteria which licensees are expected to follow. Analysis of the 18 quality assurance criteria showed that 21 terms are subject to considerable subjective interpretation. AEC did not formally ask 13 utilities determined to be inadequately complying with the criteria to upgrade their quality assurance plans. AEC has not emphasized reviewing licensee quality assurance audits at plants which have been under construction for quite some time because the quality assurance manuals for these reactors did not clearly define provisions for performing quality assurance audits. *Recommendations:* AEC should: provide its inspectors with guidance as to what constitutes acceptable methods of implementation of the 18 quality assurance criteria; develop a well-defined minimum inspection program that would provide inspectors with the guidance needed to carry out program objectives; require the operating reactor licensees to upgrade their quality assurance plans to improve the basis for evaluating the adequacy of licensees' quality assurance programs; and require its reactor inspectors to systematically and consistently review and evaluate licensees' quality assurance audits. (Author/QM)

032

Proposed Changes to the Atomic Energy Commission's Arrangement for Carrying Out the Liquid Metal Fast Breeder Reactor Demonstration Project. B-164105. February 27, 1973. 6 pp. + appendix (19 pp.).
Report to Rep. Melvin Price, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission; Tennessee Valley Authority; Breeder Reactor Corp.; Project Management Corp.; Commonwealth Edison Co.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: P.L. 91-273. P.L. 92-84.

The Atomic Energy Commission (AEC) sumbitted a memorandum of understanding, later amended, to the Joint Committee on Atomic Energy proposing a cooperative arrangement for designing, constructing, and operating the liquid metal fast breeder reactor demonstration project. Proposed changes concerned consolidation of contracts, management, indemnity provisions, funding, and licensing. ***Findings/Conclusions:*** The parties agreed to consolidate seven contracts into two, eliminating one which would have given AEC direct legal rights against the Breeder Reactor Corporation. Certain provisions related to resolution of disagreements could lead to termination of the project or cost overruns. Indemnification provisions of the original memorandum were expanded to include all expenses, whether or not they related to claims and liabilities. In addition to AEC costs calculated at $422 million, costs will be incurred for program direction, administration, and use of AEC personnel. Other proposals deal with the use of AEC funds for interest expense on project loans, the independence of licensing review, and cost principles to be applied to AEC funds. (HTW)

033

Further Comments on Atomic Energy Commission's Proposed Arrangement for the Liquid Metal Fast Breeder Reactor Demonstration Project. B-164105. April 30, 1973. 2 pp. + appendices (19 pp.).
Report to Rep. Melvin Price, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission; Tennessee Valley Authority; Breeder Reactor Corp.; Project Management Corp.; Commonwealth Edison Co.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: P.L. 91-273. P.L. 92-84.

In response to concerns expressed in a GAO report and by the Joint Committee on Atomic Energy, the Atomic Energy Commission (AEC) submitted changes to proposals for a cooperative arrangement with the Project Management Corporation, the Tennessee Valley Authority, and the Breeder Reactor Corporation for carrying out the liquid metal fast breeder reactor demonstration project. ***Findings/Conclusions:*** A proposed contract provides for an interim management arrangement and another arrangement to operate after legislation permits AEC board representation. The contract would allow majority decisions of the steering committee to be final under certain conditions, but does not specify application of conditions. Concerns were expressed about legal questions involved in provisions for referral of actions by the Project Management Corporation to heads of agencies and in having AEC employees serve on its board. Some changes were proposed for responsibilities for technical supervision of the nuclear steam supply system to meet objections to lack of AEC control. GAO believes that modifications to standards for this system should require AEC approval. Language should be clarified in provisions for funding certain unallowable costs and relating to interest from investment. It was suggested that AEC should have greater control over indemnity and that modifications are needed with reference to costs of termination. (HTW)

034

Improvements Needed in the Program for the Protection of Special Nuclear Material. B-164105. November 7, 1976. 34 pp. + 3 appendices (18 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission.
Congressional Relevance: Congress.
Authority: Atomic Energy Act of 1974, as amended (42 U.S.C. 2011; 42 U.S.C. 220(i)). 10 C.F.R. 73. AEC Manual Appendix 2401. AEC Manual Appendix 2405.

A review of in-plant protection systems of three licensed contractors holding special nuclear material (SNM) disclosed a need for the Atomic Energy Commission (AEC) to strengthen its program to protect SNM. ***Findings/Conclusions:*** A number of deficiencies significantly limit the plants' capability to prevent, detect, and respond to a possible diversion of material: weak physical security barriers, ineffective guard patrols, ineffective alarm system, lack of automatic detection devices, and lack of planning in case of diversion of material. There are differences in security requirements on licensees and those on contractors, the latter being less stringent. Inspection responsibility was divided, and inspections were made only to determine compliance with AEC requirements and not to determine the overall effectiveness of the protective system. ***Recommendations:*** AEC should: issue the proposed changes to its protection requirements; refine the expected capability of a protection system for the complete security of SNM and upgrade the requirements to the extent necessary; impose the same protection requirement on licensees and contractors holding unclassified material or justify the differences; and improve inspection as planned, by conducting one overall evaluation of protection measures at licensee/contractor plants for classified and unclassified material, and by developing new inspection procedures which emphasize evaluating the effectiveness of protection at licensed facilities. (Author/DJM)

035

Protecting Special Nuclear Material in Transit: Improvements Made and Existing Problems. B-164105. April 12, 1974. 17 pp. + appendix (1 pp.).
Report to Rep. Melvin Price, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Atomic Energy Act of 1954, as amended (42 U.S.C. 2011). 42 U.S.C. 2201(b). 10 C.F.R. 73. 10 C.F.R. 70.12. AEC Manual Appendix 2401. AEC Manual Appendix 2405.

The protection given unclassified and confidential special nuclear material (SNM) while in transit, specifically three large shipments shipped by truck or held at an airport in September and October 1972, was inadequate and the material was susceptible to a diversionary attempt. ***Findings/Conclusions:*** The Atomic Energy Commission has been slow to adequately protect SNM in transit. A few of the deficiencies observed in transit included: a sole unarmed driver, open cargo area on truck, no periodic call-in, easily duplicated seals on containers, easily portable containers, and the use of regular common carriers. Since December 1972 the AEC has taken important new steps in its safeguard program. ***Recommendations:*** AEC should make a detailed study of the feasibility of using Government-operated or controlled (licensed) transportation systems for the shipment of SNM. The Joint Committee on Atomic Energy should consider amending the Code to give the AEC the authority to predetermine the trustworthiness of the vehicle drivers and escorting guards. (DJM)

036

[*Energy Efficiency of Nuclear and Conventional Fuels Used to Produce Electricity*]. B-178205. May 20, 1974. 3 pp.
Report to Rep. Pierre S. du Pont; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Atomic Energy Commission.
Congressional Relevance: *Rep.* Pierre S. du Pont.

The Atomic Energy Commission (AEC) uses large quantities of electricity to operate its facilities for enriching uranium for nuclear weapons and for nuclear power reactor fuel. ***Findings/Conclusions:*** Statistics for 1967-1973 for electricity used to enrich uranium for power uses and the amount of electricity produced by nuclear reactors indicate a steady growth in the nuclear power industry. These statistics are not a reasonable measure of the energy efficiency of nuclear fuel. One way to measure energy efficiency is to subtract the electricity required to produce the fuel from the total electricity produced, which shows that uranium is the least efficient means. Another way is to compute the quantity of raw material needed to produce a given amount of electricity, by which measure a ton of uranium ore yields over 35 times the electricity of a ton of coal. Anticipated future developments such as new processes for enriching uranium and the use of plutonium will increase the ratio of electricity produced by reactors to the electricity used to produce the uranium. (DJM)

037

[*Future Structure of the Uranium Enrichment Industry*]. B-164105. June 26, 1974. 9 pp.
Testimony before Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Government Corporation Control Act (31 U.S.C. 841). B-114858 (1974).

Issues related to establishing a Government-owned corporation for accomplishing national uranium enrichment objectives were discussed. Early transfer of the three existing enrichment plants to private ownership would be less favorable than continued Government ownership. Because of funding delays from the budgetary process, Congress should consider a self-financing arrangement for an enrichment program if Government ownership is to continue. Management of the uranium enrichment activity should operate as a business-type enterprise, and an independent Government corporation is a way of providing the necessary flexibility. Treasury borrowings are the most common financing measure used by Government corporations. The return to the Government of the full investment value in the existing plants should receive careful attention. Earning power of the plants is the best method of fixing economic value of plants. Some of the advantages of operating the enrichment activity as a business-type enterprise under a Government corporation can be achieved through other organizational arrangements. (DJM)

038

[*Manpower Needs of the Nuclear Power Industry*]. B-164105. July 22, 1974. 4 pp.
Report to Dixy Lee Ray, Chairman, Atomic Energy Commission; by Henry Eschwege, Director, Community and Economic Development Div.

The lack of trained manpower does not appear to be a serious cause of delay in bringing nuclear powerplants into operation. ***Findings/Conclusions:*** Representatives of the nuclear power industry found the greatest difficulty in obtaining engineers with nuclear experience, such as those in the quality assurance area, and certain skilled craftsmen, such as pipefitters and welders. The representatives stated almost unanimously that they expected shortages of trained manpower to become a more serious problem in the future. Steps taken to prevent such shortages include: establishing training courses for skilled craftsmen, conducting special training programs for engineers and other professionals who lacked nuclear experience, and where possible, using more technicians to perform engineering duties. The Atomic Energy Commission (AEC) has conducted and sponsored education and training programs to ensure a continuing supply of trained manpower in the nuclear energy field. In recent years, however, the education and training activities of the AEC and other Federal agencies have decreased for budgetary reasons and some major programs have been terminated. Although the AEC and the Federal Government have been promoting nuclear power to help solve the energy problem, they have placed decreasing emphasis on programs for insuring the continued availability of trained manpower. (RRS)

039

[*Security Systems at Commercial Nuclear Powerplants*]. B-164105. October 16, 1974. 5 pp.
Report to Dixy Lee Ray, Chairman, Atomic Energy Commission; by Henry Eschwege, Director, Community and Economic Development Div.

Concern has been expressed about security systems at nuclear powerplants; the consensus is that security throughout the industry needs to be improved. ***Findings/Conclusions:*** The following were noted during site visits to several nuclear powerplants: unlighted protected-area perimeters, unlocked outside doors, lack of intrusion alarms, and unarmed watchmen. Security systems at Atomic Energy Commission (AEC) licensed plants could not prevent a takeover for sabotage by a small number of armed individuals. According to officials, the used-fuel storage facility at a nuclear powerplant is more accessible and vulnerable to sabotage than is the reactor core. AEC licensees have not been given guidance on the difference between threats posed by small groups of individuals and those posed by trained paramilitary groups. AEC's review and approval of licensee's proposed security systems are not based on specific performance criteria; without such criteria, there is no way to measure the effectiveness of the licensees' total security systems. ***Recommendations:*** The AEC should clarify the differences between assaults by small groups of individuals and by paramilitary groups and clarify the Government's responsibility for protecting nuclear powerplants against sabotage by paramilitary groups. AEC should also determine what additional interim security systems requirements can be established to strengthen licensees' security. (RRS)

040

Problem Areas Which Could Affect the Development Schedule for the Clinch River Breeder Reactor. December 1974. 13 pp.
Staff study.

Organization Concerned: Atomic Energy Commission.

One of the principal objectives of the Clinch River Breeder Reactor (CRBR) project is to verify that breeder reactor powerplants can be licensed for commercial operations. The Atomic Energy Commission (AEC) regulatory organization's licensing schedule calls for a pre-application review of CRBR project information including site suitability, environmental, and safety information. ***Findings/Conclusions:*** Problem areas of the project which could affect schedules and costs are: (1) slow progress in transmitting necessary design information to AEC's regulatory organization; and (2) a difference of opinion between the regulatory organization and CRBR project participants concerning AEC's efforts to resolve a safety issue. The regulatory organization's 14-month review schedule was contingent upon receipt of high quality, adequately documented safety information, and early identification and resolution of key safety-related design issues. An AEC Commissioner expressed concern about the timeliness and quality of information being submitted. An unresolved safety issue was whether the CRBR will be designed so that it will acceptably accommodate the consequences of a core disruptive accident. The regulatory organization held that such an accident had not been proved incredible. The project participants held that it

was incredible and that additional features to accommodate such an accident were not needed. The regulatory organization believed that AEC's current research program might not be sufficient to resolve this question. Means were being sought to resolve the safety problem and to improve the quality of information. (HTW)

041

Fast Flux Test Facility Program. January 1975. 33 pp.
Staff study.

Organization Concerned: Atomic Energy Commission.

The Atomic Energy Commission's (AEC) Fast Flux Test Facility (FFTF) is being planned as a key testing facility for fuels and materials used in liquid metal fast breeder reactor programs. ***Findings/Conclusions:*** Since congressional authorization in July 1967, the estimated cost of the program has grown from $87.5 million to $426 million. Current estimates may again have to be increased because of higher escalation rates than anticipated and because of inaccurate estimating, design changes, inadequate scope definition, changes in standards, and schedule delays. AEC's estimated date of completion of the FFTF has slipped 5 years to November 1977 and further slippage could result if severe problems are encountered. A number of design changes have been made since authorization, including combining examination and maintenance facilities, but AEC officials believed these changes have not adversely affected performance characteristics of the facility. GAO was unable to determine the full impact that changes could have on the schedule but believed they could be substantial. ***Recommendations:*** Congress should consider requiring that AEC's supporting cost and schedule estimates be: (1) complete as to the inclusion of all major associated project costs; and (2) based upon relatively firm designs. The Joint Committee for Atomic Energy should consider exploring with the AEC the desirability of adding separate examination and maintenance facilities. (Author/HTW)

042

Operating Cost and Environmental Radiation Monitoring at the Shippingport Atomic Power Station. RED-75-325; B-164105. January 13, 1975. 19 pp. + appendices (2 pp.).
Report to Sen. Richard S. Schweiker; by Elmer B. Staats, Comptroller General.

Organization Concerned: Duquesne Light Co., Pittsburgh, PA.
Congressional Relevance: *Sen.* Richard S. Schweiker.

The Shippingport Atomic Power Station, jointly owned by the Federal Government and Duquesne Light Co., was the first large nuclear powerplant in the United States. It is primarily a research and development facility, but began generating electricity for commercial sale in December 1957. ***Findings/Conclusions:*** The total Government cost for Shippingport is estimated at $596.9 million through fiscal year 1980. Government cost has been partially offset by $20.3 million in revenue from the sale of steam to Duquesne through fiscal year 1974. In 1973, Shippingport produced 1.4% of Duquesne's total electricity. The cost of this electricity to Duquesne represented 1.7% of the total cost of electricity produced that year. The sale of steam has not provided Duquesne with any significant economic advantage because the amount of electricity produced by steam from Shippingport is a relatively small part of Duquesne's total production and because the unit cost to produce electricity at Shippingport is higher than the average unit cost to Duquesne at its other facilities. The environmental radiation monitoring in the Shippingport area has not been extensive enough to determine whether hazardous radiation levels exist in the area. A consolidated monitoring program is being developed by the Atomic Energy Commission and the State of Pennsylvania which should improve monitoring in the Shippingport area. (Author/QM)

043

Sequoyah Nuclear Plant. March 1975. 36 pp.
Staff study.

Organization Concerned: Environmental Protection Agency; Nuclear Regulatory Commission; Tennessee Valley Authority.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438).

Review of the design and construction of the Sequoyah Nuclear Plant by the Tennessee Valley Authority (TVA) indicated that it might be possible to reduce or avoid some modifications to nuclear powerplants if the Nuclear Regulatory Commission (NRC) maintained surveillance over critical features of a plant's design during the interval between its two regular reviews, which were about 42 months apart in the case of the Sequoyah plant. Except for safety, its main concern should be to assist the utility in avoiding future increased costs and delayed schedules. ***Findings/Conclusions:*** An increase in cost estimate of over 100% from 1968 to 1974 was attributed to changes during construction, inflation, higher interest, and schedule delays. TVA's estimates for start of commercial operation slipped about 40 months because of unrealistic time assessments. Sequoyah's power output will be only slightly reduced in spite of engineering changes, but other safety-related changes which may become necessary may restrict its capacity. Concurrent design and construction of nuclear plants is a normal industry practice, and plants are often custom-designed, making an extensive NRC review necessary to ensure public health and safety. ***Recommendations:*** The NRC should re-examine its licensing review procedures and practices with the objectives of maintaining surveillance over nuclear plant designs during the interval between its two regular reviews, particularly in the case of designs prepared concurrently with construction, and of finding ways to provide concurrent assistance to utilities in order to reduce costs and maintain schedules. Congress may wish to continue reviewing the advantages and disadvantages associated with standardization and pre-selected plant sites and to consider appropriate legislation to help reduce nuclear plant lead time. (SC)

044

Comments on Energy Research and Development Administration's Proposed Arrangement for the Clinch River Breeder Reactor Demonstration Plant Project. RED-75-361; B-164105. April 4, 1975. 14 pp.
Report to Sen. John Pastore, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Atomic Energy Commission; Project Management Corp.; Commonwealth Edison Co.; Tennessee Valley Authority.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: P.L. 91-273. 5 U.S.C. 2105(a).

The Energy Research and Development Administration (ERDA) submitted legislation to the Joint Committee on Atomic Energy involving major revisions to the authorization for the Clinch River Breeder Reactor Demonstration Plant project along with proposed changes to the existing underlying documents governing the project.
Findings/Conclusions: Utility participants will be allowed to withdraw their support from the project if there is a disagreement over major changes in reference design and specifications. This could allow the utility participants to terminate their involvement over design changes which may be brought about by actions of the Nuclear Regulatory Commission. The documents submitted by ERDA do not clearly delineate the manner in which the project will be managed. They contain ambiguous and seemingly inconsistent language regarding responsibilities and management. It is not clear whether the legislative history authorizing the project supports the ERDA view that the Government's share of the total project cost is now authorized and that the proposed legislation would continue such authorization by virtue of one of the underlying documents before the Joint Committee for 45 days, as required by the basic enabling legislation. The proposed legislation seeks spending authority, however, for only one year. (Author/QM)

045

The Liquid Metal Fast Breeder Reactor Program–Past, Present, and Future. RED-75-352; B-164105. April 28, 1975. 44 pp. + appendices (22 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Atomic Energy Commission.
Congressional Relevance: Congress.

The liquid metal fast breeder reactor (LMFBR) is a high priority energy program because a breeder reactor can create more fuel than it uses. *Findings/Conclusions:* Since 1968 the expected costs of the LMFBR program have increased by $6.8 billion, $3.5 billion of which the Energy Research and Development Administration (ERDA) attributes to inflation. In addition to Federal funding of the breeder reactor, over half a billion dollars of private funds have been or will be spent over the next 5 to 10 years to develop the breeder reactor and build a demonstration plant. The overall breeder reactor program consists of six major program areas, each of which contributes an important element of technology. There are 22 major facilities in use or being built in support of the program. ERDA management problems in the breeder program brought about the development of a new management system which, if properly implemented, should reasonably assure that ERDA will have greater visibility over the LMFBR program. The management of the demonstration plant project remains cumbersome. Federal funding for breeder reactor development was 40% of the total energy research and development funding in 1971 and should be 26% in 1976. There are high priority breeder programs in five other industrial nations; France and the Soviet Union have the most advanced of them.
Recommendations: If the Congress wants to know whether greater reliance can be placed on the use of foreign LMFBR technology, it should explore with ERDA in greater depth the advantages and disadvantages of using such technology. (Author/QM)

046

[*Liquid Metal Fast Breeder Reactor Program–Past, Present, and Future*]. April 30, 1975. 9 pp.
Testimony before Joint Economic Committee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Atomic Energy Commission.
Congressional Relevance: *Joint* Economic Committee.

The Clinch River liquid metal fast breeder reactor will be this Nation's first project to demonstrate the value of the breeder concept and is scheduled to operate by mid-1982. It is hoped that it will lead to a strong, competitive, commercial breeder industry. The first large commercial breeder will begin operating in 1987 according to the Energy Research and Development Administration. Total expenditures through fiscal year 1974 were $1.8 billion, with estimated additional funding of $8.9 billion needed through 2020. A number of major facilities will be built to support the project, costing about $3 billion or 30% of total costs. Three of the most important powerplant projects have experienced large cost increases and schedule delays. Estimated costs for the Clinch River demonstration plant itself have increased from $699 million to $1.7 billion from 1973 to 1975, and the start up has been delayed from 1980 to 1982. (DJM)

047

Cost and Schedule Estimates for the Nation's First Liquid Metal Fast Breeder Reactor Demonstration Powerplant. RED-75-358; B-164105. May 22, 1975. 33 pp. + appendices (15 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Tennessee Valley Authority; Breeder Reactor Corp.; Project Management Corp.; Commonwealth Edison Co.; Nuclear Regulatory Commission.
Congressional Relevance: Congress.
Authority: Energy Reorganization Act of 1974 (P.L. 94-438).

The cost and schedule estimates for constructing and operating the Nation's first liquid metal fast breeder reactor demonstration plant, the Clinch River Breeder Reactor Project, merit review because of: the importance of the liquid metal fast breeder reactor program to the Nation's future energy posture; the contribution the demonstration powerplant is expected to make in providing data on the economic and environmental value of the liquid metal fast breeder concept; the significant Federal funds involved; and congressional concern over increases in the estimated cost of the project.
Findings/Conclusions: It was not possible to determine which of the project construction and operation cost estimates, $2.1, $1.5, or $1.7 billion, was more accurate, because: the project was only in an early design stage; the project was a first-of-a-kind and sufficient and useful data were not always available to develop firm estimates; professional engineering judgment was a factor in estimating project costs; cost escalation for a long-term project is very speculative; and failure to meet the schedule could increase cost. Project participants identified several potential problems that could lead to schedule delays. They include: failure to receive adequate funding; delays in the licensing process; delays in delivery of long-leadtime material and components; unavailability of craftsmen; and major design changes. The Energy Research and Development Administration has estimated that early delays in the project could cause an increase in the project cost of about $10 to $15 million for each month of delay. (Author/QM)

048

Efforts to Develop Two Nuclear Concepts That Could Greatly Improve This Country's Future Energy Situation. RED-75-356; B-164105. May 22, 1975. 37 pp. + appendix (1 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: Congress.

Two nuclear concepts–fusion and laser isotope separation–hold great promise for improving the energy situation in this country.
Findings/Conclusions: These approaches could produce electricity with fuel that is virtually inexhaustible and enrich uranium cheaply and with less energy than at present. Fusion efforts by either of two methods (magnetic or inertial confinement) are managed by two separate divisions of the Energy Research and Development Administration (ERDA) with different management philosophies. Laser isotope separation offers tremendous advantages over the gas diffusion process–less than 10% of the cost to build and only 5% of the cost to operate, with additional savings from greater enrichment potential. Early private involvement in developing and demonstrating the economic feasibility of laser fusion could expedite this Nation's energy goals. Greater funding is necessary. The Atomic Energy Commission would accelerate development if funding were available and a principal program manager could be secured to administer the program. (DJM)

049

The Liquid Metal Fast Breeder Reactor: Promises and Uncertainities. OSP-76-1; B-164105. July 31, 1975. 95 pp. + 8 appendices (49 pp.).
Staff study the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Atomic Energy Commission; Federal Energy Administration.
Congressional Relevance: Congress.
Authority: Geothermal Energy Research, Development, and Demonstration Act (P.L. 93-410). Solar Heating and Cooling Demonstration Act of 1974 (P.L. 93-409). Energy Reorganization Act of 1974 (P.L. 93-438).

Development of the liquid metal fast breeder reactor (LMFBR) is one of the Nation's high priority energy research and development projects and one of the most controversial projects. ***Findings/Conclusions:*** Critical uncertainties surround questions of: future electrical needs; how much nuclear fission will be needed; amount and price of recoverable uranium; economic feasibility of LMFBRs; environmental, safety, and safeguard concerns; and foreign programs and their implications for the United States. The United States should not abandon the LMFBR research and development effort at this time. The program should be understood for what it is–a research and development program. It is not reasonable to attempt to accelerate the program's schedule. Problems of nuclear safety and safeguards exist for foreign governments as well; they will not go away, but must be resolved favorably. The most logical course of action is to continue the research and development program for the LMFBR, and at some point in the future decide whether to commit the Nation to it. ***Recommendations:*** The responsible Federal agencies, (Energy Research and Development Administration, Nuclear Regulatory Commission, Environmental Protection Agency) and the Congress should obtain adequate information on domestic uranium resources; resolve environmental and safety questions; establish permanent underground storage for wastes; improve knowledge of and cooperation with foreign efforts; research the environmental and health aspects of coal use; and improve projections of demand for electrical energy. Congress should periodically reassess the Nation's major energy options. (Author/DJM)

050

Selected Aspects of Nuclear Powerplant Reliability and Economics. RED-76-7; B-164105. August 15, 1975. 3 pp. + 5 appendices (25 pp.).
Report to Sen. Lee Metcalf, Chairman, Senate Committee on Government Operations: Reports, Accounting and Management Subcommittee; by Elmer B. Staats, Comptroller General.

Congressional Relevance: *Senate* Committee on Government Operations: Reports, Accounting and Management Subcommittee.
Authority: Price-Anderson Act, as amended (P.L. 85-256). Private Ownership of Special Nuclear Materials Act of 1964 (P.L. 88-489). Atomic Energy Act of 1954 (42 U.S.C. 2210). P.L. 91-560. S. 2035 (94th Cong.).

The Energy Research and Development Administration (ERDA) and others believe that nuclear power can provide more than half of the Nation's electricity by the end of the century. As of June 1975, 53 nuclear powerplants were licensed for commercial operation and accounted for about 7.7% of the United States' electrical capacity. ***Findings/Conclusions:*** Generally, nuclear powerplants showed an upward performance trend during their first seven years of commercial operation. Only three small, first-generation powerplants have been operating for more than seven years, and their performance has been erratic. Data from these three plants are not a reliable predictor for future nuclear powerplant performance. Considerable Government assistance to nuclear power enterprises exists in the form of indirect subsidies for atomic energy insurance and indemnity, management of radioactive waste, and uranium enrichment. Reprocessing used commercial nuclear fuel and decommissioning nuclear powerplants are the responsibility of private industry, and little or no Federal involvement exists in these areas. It is not possible at this time to accurately estimate the total cost of safely managing nuclear waste because of uncertainties in future waste management processes. (Author/DJM)

051

[***Nuclear Regulatory Commission's Program for Evaluating Environmental Impacts of Construction and Operation of Nuclear Powerplants***]. October 22, 1975. 4 pp.
Report to Lee V. Gossick, Executive Director for Operations, Nuclear Regulatory Commission; by Gerald H. Elsken, Assistant Director, Resources and Economic Development Div.

Authority: National Environmental Policy Act of 1967.

A review of the Nuclear Regulatory Commission's (NRC) program for evaluating the environmental impacts of the construction and operation of nuclear powerplants revealed specific needs. ***Findings/Conclusions:*** In the past, many unsuitable or unrealistic sites have been suggested as locations for nuclear power plants because of environmental or economic criteria. Commission personnel have no guidelines to verify applicants' data and there are differences among NRC staff concerning the need to do so. Licensees are required to implement their environmental protection plans, and enforcement actions are recommended where needed, but these procedures were not applied to 55 projects which already had construction permits. Personnel of the NRC can improve their independent reviews of impact reports. ***Recommendations:*** NRC should emphasize to applicants that only realistic sites should be chosen and evaluated; develop systematic procedures for identification and verification of environmental data critical to the acceptability of proposed projects; inspect projects not covered by revised procedures for monitoring environmental protection activities to ensure compliance; and periodically monitor such activities throughout construction. (Author/DJM)

052

[***Energy Research and Development Administration's Contingency Plan for More Enrichment Capacity at Portsmouth, OH***]. RED-76-55; B-159687. November 28, 1975. ***Released*** June 22, 1976. 4 pp. + enclosure (3 pp.).
Report to Sen. John O. Pastore, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Nuclear Fuel Assurance Act of 1975.

The Energy Research and Development Administration's (ERDA) contingency plan for constructing additional uranium enrichment capacity involves expansion of its gaseous diffusion plant at Portsmouth, Ohio, if private industry does not provide the next increment of enrichment capacity. ***Findings/Conclusions:*** The plan also includes design work on a stand-alone centrifuge at Oak Ridge, Tennessee, if the succeeding increment is not forthcoming. The Portsmouth add-on is in line with section 4 of the proposed Nuclear Fuel Assurance Act of 1975, which will authorize only planning and design efforts, but not full scale procurement and construction. A schedule presents the plan from conceptual design through procurement and testing of equipment on a month-by-month basis, from July 1975 through August 1978. The cost of conceptual design through fiscal year 1976 is $7.6 million. ERDA's cost and obligations for the add-on plant total $2,390,000,000 through fiscal year 1985. (DJM)

053

The Evaluation of the Administration's Proposal for Government Assistance to Private Uranium Enrichment Groups. December 10, 1975. 16 pp.
Testimony before Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Uranium Enrichment Associates.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Nuclear Fuel Assurance Act of 1975.

Since 1971 the Executive Branch has encouraged private industry involvement in uranium enrichment. The Administration's proposed Nuclear Fuel Assurance Act would: authorize the Energy Research and Development Administration (ERDA) to enter into cooperative arrangements with as many private firms that wish to build, own, and operate enrichment plants as the ERDA Administrator believes necessary to develop a competitive industry; authorize ERDA to provide various assistances and assurances; limit the Go-

vernment's total potential liability to $8 billion in the event the private ventures fail; authorize ERDA to start construction planning and design activities for expanding one of the Government's existing plants as a contingency measure; and provide for congressional review of the basis for the cooperative arrangements. There should be a serious effort made to "privatize" the gaseous centrifuge uranium enrichment process. The use of a Government-assisted Uranium Enrichment Associates plant to demonstrate the success potential of such an effort would not be as effective if the plant is of the more antiquated gaseous diffusion type. The Congress should consider: authorizing ERDA to construct the next increment of the enrichment capacity utilizing the proven enrichment process; establishing a self-financing Government corporation to manage uranium enrichment facilities; and legislatively authorizing ERDA to enter into cooperative agreements with private enrichers using advanced technologies. (QM)

054

Bellefonte Nuclear Plant. PSAD-76-86. March 1, 1976. 37 pp.
Staff study by Richard W. Gutmann, Director, Procurement and Systems Acquisitions Div.

Organization Concerned: Tennessee Valley Authority; Nuclear Regulatory Commission.

The Tennessee Valley Authority (TVA) has one of the strongest commitments to nuclear power of all U.S. utility systems. Construction on Bellefonte, TVA's fourth nuclear powerplant, was about 6% completed as of August 31, 1975. The Nuclear Regulatory Commission (NRC) is responsible for licensing and related regulatory functions that assure safe operations of nuclear powerplants. *Findings/Conclusions:* In August 1975, TVA completed a preliminary detailed construction estimate for Bellefonte totalling $1.2 billion, an increase of $550 million over the original estimate caused by inflation, schedule delays, higher interest costs, and additional construction man-hours. TVA estimated a schedule delay of 35 months from its original construction schedule. In building powerplants, TVA overlaps the design and construction schedules so that some construction occurs during a plant's design. TVA forecasts electrical demand annually to assure that it will have the generating capacity to meet future demands. Future TVA forecasts of electrical demand will determine whether the preliminary 1975 forecast of lower demand is an aberration or a new trend in electrical demand. *Recommendations:* TVA should continue in its efforts to reduce the amount of concurrency in the construction of its nuclear plants. The Congress may wish to be kept informed of the latest electrical demand forecasts and trends in connection with requirements for additional nuclear powerplants. (Author/QM)

055

Development of Interagency Relationships in the Regulation of Nuclear Materials and Facilities. RED-76-72; B-92288. March 10, 1976. 20 pp.
Report to Sen. Abraham A. Ribicoff, Chairman, Senate Committee on Government Operations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Nuclear Regulatory Commission.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Energy Reorganization Act of 1974 (42 U.S.C. 5801). Export Reorganization Act of 1976; S. 1439 (94th Cong.). Atomic Energy Act of 1954.

The Energy Reorganization Act of 1974 assigned certain functions related to the development of various energy sources and the regulation of atomic energy and other uses of radioactive materials to the Energy Research and Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC). Interagency agreements, memoranda, and other understandings have been negotiated between the two agencies. The agreements and memoranda on research and technical assistance, international and domestic safeguards, and safety reviews of ERDA's reactors are directly related to NRC's principal functions and responsibilities for research, safeguards, and reactor safety. *Findings/Conclusions:* The agencies have not formally agreed to detailed operating procedures for conducting NRC's research nor have they agreed on procedures for promptly resolving disagreements between them. Until such procedures have been formally agreed to, there could be an adverse impact on NRC's research program. NRC is limited in its ability to make an independent regulatory evaluation of whether an export would be harmful to the common defense and security of the United States. NRC has not agreed to any changes in its responsibility for establishing and evaluating domestic safeguards for mixed facilities. The proposed interagency agreement with ERDA on use of the New Brunswick Laboratory gives NRC control over analyses of its special nuclear materials, and NRC has agreed to determine its fair share of support for the laboratory beginning with fiscal year 1977. *Recommendations:* The agencies, in all negotiations on NRC's use of ERDA's facilities and technical expertise, should agree to detailed procedures for conducting the research or technical assistance project and to detailed procedures for promptly resolving disagreements between them. The agencies should also develop an interagency agreement under which NRC personnel would regularly participate in inspections of the physical security measures to be applied to U.S.-supplied nuclear materials, equipment, and facilities in importing countries. (Author/QM)

056

[*The Energy Research and Development Administration's Proposed Contract with Project Management Corporation, Commonwealth Edison, and the Tennessee Valley Authority*]. B-164105. March 26, 1976. 9 pp.
Report to Rep. John E. Moss; by Elmer B. Staats, Comptroller General.

Organization Concerned: Project Management Corp.; Commonwealth Edison Co.; Tennessee Valley Authority; Energy Research and Development Administration; Breeder Reactor Corp.
Congressional Relevance: *Rep.* John E. Moss.
Authority: 5 U.S.C. 2105(a).

The Energy Research and Development Administration's (ERDA's) proposed modified contract with Project Management Corp., Commonwealth Edison, and the Tennessee Valley Authority would change the present arrangement for designing, constructing, and operating the Clinch River Breeder Reactor Demonstration Plant by giving the energy agency, rather than the corporation, overall management responsibility. *Findings/Conclusions:* The energy agency's inability to obtain, during the negotiation process, the corporation's agreement on more specific language defining the role that the corporation's board of directors will have in managing the project and that any design change required for licensing would not be a basis for project termination could cause serious problems if the energy agency attempts to exercise its management prerogative during performance of the contract. The proposed management arrangement also could lead to a situation where the private employees are being directly supervised by Federal employees in their daily project duties. *Recommendations:* The Administrator of ERDA should negotiate with the other parties to the contract to revise the proposed modified contract so that it: more clearly states the extent of the corporation's involvement in managing the project; eliminates options permitting contract termination because of project delays caused by design changes to meet licensing requirements; and includes provisions penalizing private participant's employees if they are involved in conflicts of interest, bribery, and/or graft in relation to the project. (Author/QM)

057

[*Survey of Federal Programs and Policies for Disposing of Obsolete and Unused Nuclear Facilities*]. RED-76-102; B-164052. April 9, 1976. 2 pp.
Report to Robert C. Seamans, Jr., Administrator, Energy Research and Development Administration; by Henry Eschwege, Director, Resources and Economic Development Div.

Organization Concerned: Atomic Energy Commission.

In an action directed to those past Atomic Energy Commission (AEC) activities for which available data were insufficient to insure that any residual radioactivity did not present a hazard to the environment and public health and safety, AEC field offices identified 49 sites which the Manhattan Engineering District and AEC had used for various radiological operations. The Energy Research and Development Administration (ERDA) has initiated a program to study the radiological condition at each site. *Findings/Conclusions:* ERDA plans to use one contractor to make the surveys; thus all 49 sites will not be surveyed until 1980. The only way to insure that there were no existing or potential radiation hazards at these sites is to survey each one. Surveys will be initiated at three of the sites in 1976 at a total cost of about $150,000. An expedited program to complete all surveys by 1978 would require a total of $850,000. *Recommendations:* The surveys should be completed as soon as possible. ERDA should expedite completion of the surveys so that it can either promptly certify that none of the identified sites represents a radiation danger or begin corrective actions where required. (Author/QM)

058

The Proposed Contract for the Clinch River Breeder Reactor Project. April 14, 1976. 6 pp.
Testimony before Joint Committee on Atomic Energy; by Paul G. Dembling, General Counsel.

Organization Concerned: Project Management Corp.; Commonwealth Edison Co.; Tennessee Valley Authority; Energy Research and Development Administration; Breeder Reactor Corp.
Congressional Relevance: *Joint* Committee on Atomic Energy.

The Energy Research and Development Administration's (ERDA's) proposed modified contract with Project Management Corp., Commonwealth Edison, and the Tennessee Valley Authority would change the present arrangement for designing, constructing, and operating the Clinch River Breeder Reactor demonstration plant by giving ERDA, rather than the corporation, overall management responsibility. Despite some confusion in language, it appears that ERDA will have ultimate management responsibility for the project. Any design change required for licensing could be a basis for project termination because of the delay such a change might entail. The proposed management arrangement, in light of the obvious interrelationships between ERDA and non-Government personnel which will exist, will require close attention to be applied to the administrative arrangements, procedures, and policies governing all personnel engaged in the project. ERDA should establish appropriate criteria governing the approval and retention on the project of private participant employees and precise administrative controls over the manner in which Government and private employees relate to each other. (QM)

059

This Country's Most Expensive Light Water Reactor Safety Test Facility. RED-76-68; B-164105. May 26, 1976. 54 pp. + appendices (22 pp.) and enclosures (185 pp.).
Report to Sen. Abraham A. Ribicoff, Chairman, Senate Committee on Government Operations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Atomic Energy Commission; Nuclear Regulatory Commission.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438).

The Loss-of-Fluid-Test (LOFT) facility, this country's most expensive light water reactor safety test facility, was authorized in 1963. Located at the Energy Research and Development Administration's (ERDA's) Idaho National Engineering Laboratory, it will produce one-sixtieth the heat output of a commercial reactor. The facility will study the adequacy of analytical techniques used to evaluate emergency core cooling systems. These systems are intended to prevent nuclear fuel from melting should a reactor lose its normal coolant. *Findings/Conclusions:* The Nuclear Regulatory Commission (NRC) estimates that the total project costs will be $350 million. The project redirection (dropping the nuclear fuel meltdown test) and the many design changes to the facility while it was being built were major contributors to the cost overrun and schedule slippage. Most safety research and development responsibilities have been given to NRC. The LOFT facility tests should indicate the applicability of small-scale experiments and complex computer analytical techniques in calculating the events during a loss-of-coolant accident, but will not by themselves prove or disprove the actual effectiveness of emergency systems in a commercial reactor. Nuclear consultants did not see any benefits in using the facility to conduct meltdown experiments. Four of the five experts believed NRC should increase its research on meltdowns and three believed that the commercial nuclear powerplant licensing process should not be changed pending the facility's test results. *Recommendations:* The Administrator of ERDA should include, as part of the semiannual report to the Congress on the status of construction projects, total project design and construction costs including that portion funded from the operating appropriation. (Author/QM)

060

[*The Safeguards and Security of the Energy Research and Development Administration's Rocky Flats Plutonium Facility*]. B-183920. June 4, 1976. 4 pp.
Report to Robert C. Seamans, Jr., Administrator, Energy Research and Development Administration; by Monte Canfield, Jr., Director, Energy and Minerals Div.

The status of safeguards and security at the Energy Research and Development Administration's (ERDA's) Rocky Flats Plutonium Facility warrant immediate attention. *Findings/Conclusions:* ERDA does not require its contractors to make current analyses and prepare Safety Analysis Reports (SARs) for existing facilities handling special nuclear materials to determine whether all safety risks have been identified and reduced to an acceptably low level. No SARs have been completed at Rocky Flats. An ERDA headquarters requirement for safety evaluations in a uniform manner with headquarters overview responsibilities will better assure that its workers and the public are adequately protected from unsafe conditions. *Recommendations:* ERDA should develop a uniform and documented system to assure safe operations, identify unacceptable risks, and, where necessary, implement corrective action for all nuclear facilities under its control. (Author/QM)

061

Certain Actions That Can Be Taken to Help Improve This Nation's Uranium Picture. EMD-76-1; B-178205. July 2, 1976. 31 pp. + 6 appendices (11 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: Congress.
Authority: Atomic Energy Act of 1954 (42 U.S.C. 2153). Federal Energy Administration Act of 1974 (15 U.S.C. 761-786). Foreign Investment Study Act of 1974 (P.L. 93-479). 10 C.F.R. 40.

Nuclear power now accounts for about 8% of the total U.S. electrical generating capacity. Uranium to fuel nuclear power may soon be in short supply and actions must be taken to improve its continued production. ***Findings/Conclusions:*** More reliable data could help in formulating sound uranium export policies, particularly the amount exported, and the extent and effect of foreign investment in our domestic supply. The Energy Research and Development Administration (ERDA) has already begun action to improve reporting into its management information system, in order to control the original sources and ultimate destination of uranium. It may become necessary to mine lower quality ore, recovery of which could be enhanced by the research and development of new, lower cost technology. Research and development funding is very inadequate. ***Recommendations:*** ERDA must collect adequate information from the uranium industry, supplied on a voluntary or mandatory basis, on foreign investment in the U.S. industry and the amount controlled by foreign investors. Congress should require reporting of ERDA's efforts. ERDA should also increase funding for uranium mining and milling research and development. (DJM)

062

Shortcomings in the Systems Used to Control and Protect Highly Dangerous Nuclear Material. EMD-76-3a. July 22, 1976. 5 pp.
Report to the Congress; by Elmer B. Staats, Comptroller General.
This is an unclassified digest furnished in lieu of a report containing classified security information.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: Congress.

The basic systems used by the Energy Research and Development Administration (ERDA) to control and protect nuclear material are: accountability and material control systems for detecting thefts, and physical security systems to prevent or respond to thefts or unauthorized uses. The interaction of these two systems is relied upon at nuclear facilities to preclude the loss or theft of special nuclear material. ***Findings/Conclusions:*** Accurate measurements of materials cannot be obtained because of uncertainties in measurement instruments and difficulties in measuring nuclear materials held up in pipes, machinery and filters. As a result, discrepancies normally occur between physical and book inventories. ERDA's accountability and material control system contains vague and outdated requirements which have resulted in inconsistent inspection practices and lack of specific numerical criteria when responding to missing special nuclear material. ERDA needs to strengthen and clarify its existing security requirements regarding the placement of nuclear material detectors and the protection of windows to buildings housing this special material. The agency has not communicated effectively to its operations offices and contractors the nature and dimensions of the threat of theft. Physical security requirements have not been established for unclassified special nuclear materials in quantities smaller than 5 kilograms of enriched uranium and 2 kilograms of plutonium.
Recommendations: ERDA's Administrator should: immediately update accountability and material control system requirements to reflect current needs and capabilities and specify the minimum acceptable levels of measurement precision; develop and implement inspection practices that eliminate existing inconsistencies and provide inspectors with uniform, well-defined guidelines explicitly distinguishing between the various special nuclear material environments; develop specific numerical criteria for determining when a "material unaccounted for" becomes significant; strengthen and clarify security requirements concerning the placement of special nuclear material detectors and the protection of windows; improve inspection practices by incorporating specific threat criteria in the physical security manual; and expedite the study of the protection needs for small quantities of plutonium and issue protection requirements to the extent necessary. (Author/QM)

063

Poor Management of a Nuclear Light Water Reactor Safety Project. EMD-76-4; B-164105. August 25, 1976. 26 pp. + appendices (8 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Nuclear Regulatory Commission.
Congressional Relevance: Congress.

The Plenum Fill Experiment was a Nuclear Regulatory Commission (NRC) reactor safety test project designed to tell NRC whether its licensing regulations for emergency core cooling systems and reactor power outputs were too stringent. When the project was cancelled in 1976, it had wasted about $5 million. ***Findings/Conclusions:*** The Plenum Fill Experiment was plagued by management deficiencies. All parties involved failed to agree upon firm program requirements. This resulted in a detailed design which did not meet NRC requirements. NRC and the Energy Research and Development Administration (ERDA) also failed to establish firm baseline designs and to control design changes. The two agencies did not adequately define their respective management roles and responsibilities so the project was poorly managed by both. There are some indications that the two agencies are having problems developing suitable arrangements to jointly manage research facilities. GAO is not convinced that NRC's present approach to building another such facility is sound. In fact, NRC is in the act of repeating some of the same mistakes that led to the cancellation of the original project.
Recommendations: The Chairman of NRC should: postpone all decisions on the new project until a conceptual design is completed which provides a rea istic scope, schedule, and total estimated cost, and until an agreement is reached with ERDA for managing the project as well as future reactor safety projects; institute measures to hold to a minimum the use of operating appropriations for construction activities; and alert the Congress to any construction activities for which more than $1 million of operating appropriations is obligated. The Administrator of ERDA should: reach an agreement with NRC for managing the new Plenum Fill Experiment as well as the future reactor safety projects; begin steps to minimize the use of operating appropriations for construction activities; and alert the Congress to similar appropriations obligations. The Joint Committee on Atomic Energy should make sure that NRC and ERDA carry out the above recommendations. (Author/QM)

064

Evaluation of the Publication and Distribution of "Shedding Light on Facts about Nuclear Energy". EMD-76-12; B-130961. September 30, 1976. 37 pp. + appendices (14 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: Congress.
Authority: Price-Anderson Act of 1957 (P.L. 94-197; 42 U.S.C. 2210). Energy Reorganization Act of 1974 (P.L. 93-438; 42 U.S.C. 5801). Independent Offices Appropriations Act of 1952 (31 U.S.C. 483a). Federal Regulation of Lobbying Act (2 U.S.C. 261-270). Treasury, Postal Service, and General Government Appropriation Act of 1976. P.L. 94-91. 18 U.S.C. 1913.

"Shedding Light on Facts about Nuclear Energy," an Energy Research and Development Administration (ERDA) publication, was distributed to ERDA offices and contractors in California prior to a public referendum on the construction of new nuclear powerplants in that State. Questions have been raised regarding the objectivity of certain statements made in the pamphlet, and the distribution, utilization, and legality of the publication. ***Findings/Conclusions:*** The pamphlet was not objective, is propaganda, and was not a proper document for release to the public or to employees within the Liquid Metal Fast Breeder Reactor program. The pamphlet was distributed beyond the scope of ERDA's Performance Awareness Program and was used by some recipients to influence California voters in the public referendum on new nuclear power-

plant construction. ERDA did not violate any applicable laws or regulations, with the exception of the Government Printing and Binding Regulations, in publishing and distributing the pamphlet. *Recommendations:* The ERDA Administrator should: avoid publishing, or assisting others in publishing, additional copies of "Shedding Light on Facts about Nuclear Energy" without significant revision; recover and destroy undistributed copies at various ERDA offices and participating contractors to assure that the pamphlet is not misused again; and prohibit the use of educational materials which have not been subjected to established internal review procedures in any program such as the Awareness Program. (Author/QM)

065

Evaluation of the Status of the Fast Flux Test Facility Program. EMD-76-13; B-164105. November 15, 1976. 35 pp. + 2 appendices (3 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: Congress.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438).

The Fast Flux Test Facility (FFTF) was authorized by Congress in 1967. The FFTF is intended to test nuclear fuels and materials most apt to work safely and economically in future breeder reactors. *Findings/Conclusions:* The Energy Research and Development Administration believes that 37- and 19-pin tests will be adequate for closed loop test purposes; and 37-pin tests will provide valid and useful data for establishing design and operating limits. The construction project is now estimated to cost $540 million instead of the $87.5 million originally projected, and supporting costs are estimated at an additional $613 million. More than $200 million in breeder reactor program costs should also be recognized as FFTF costs. Since authorization, the project's completion date has been extended by more than 5 years to August 1978. Technical problems with major components of the heat transport system remain. *Recommendations:* All large construction projects must be closely monitored to determine that sufficient design, development, and component testing has been completed. Congress should be provided with a current estimate and breakdown of all costs associated with the FFTF, including the cost of facilities being built or planned that directly support the test program. (RRS)

066

Considerations for Commercializing the Liquid Metal Fast Breeder Reactor. EMD-77-5; B-164105. November 29, 1976. 61 pp.
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Senate* Committee on Public Works; Congress.

The liquid metal fast breeder reactor (LMFBR) is regarded as an essentially inexhaustible source of energy. A July 1975 Report by GAO and a subsequent statement by the Administrator of the Energy Research and Development Administration (ERDA) concurred in the opinion that the LMFBR program is still in a research stage, and that in the mid-1980's, a determination could be made about the acceptability of widespread commercial deployment of LMFBRs. The current status of the LMFBR program is reported, along with a discussion of the technical, financial, scheduling, and institutional factors which must be adequately resolved for successful commercialization. *Findings/Conclusions:* Successful commercialization of the LMFBR will require not only the development of reactor technology but the supporting technologies of fuel fabrication, plutonium reprocessing, and radioactive waste disposal. The year 1990 may be the earliest by which licensibility and routine performance can be demonstrated for all four required technologies. GAO, in a conservative estimate, feels it is most likely that four to six commercial-size LMFBRs could be in operation by the year 2000 if a decision is made in the mid- to late-1980s to commercialize the LMFBR. Estimated total capital costs would be about $150 billion, measured in 1974 dollars. *Recommendations:* The Administrator of ERDA should: fully develop a management and planning framework which integrates the research, development, and demonstration approach for the four key technologies; review and report annually to Congress the status of the development of all technologies needed for an LMFBR industry; and include in the annual report to Congress the relationship of these technologies to other energy programs in terms of the budgetary cost and other priorities. (SW)

067

An Unclassified Digest of a Classified Report Entitled "Safety and Transportation Safeguards at Rocky Flats Nuclear Weapons Plant". EMD-77-9a. January 11, 1977.
Report to Rep. Timothy E. Wirth; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Interior and Insular Affairs. *Rep.* Timothy E. Wirth.

Offsite releases of radioactive materials at the Energy Research and Development Administration's (ERDA) Rocky Flats Nuclear Weapons Plant in Colorado have aroused public concern. *Findings/Conclusions:* Plutonium and enriched uranium shipments are made in approved containers and are relatively free of radiation. The agency continuously reviews its safeguards system, including provisions for additional security and the use of more escort vehicles and couriers. The Albuquerque Operations Office, however, is not reviewing shipments in accordance with agency requirements. The 22 buildings where plutonium is handled either do not meet design criteria to withstand disasters or their capability has not been determined. Although radiation releases from normal operations have declined and have not exceeded established exposure standards, public confidence can be increased. Recent accidents can be partly attributed to a lack of adequate or complete operating procedures. *Recommendations:* ERDA's management should improve safeguards to prevent loss of control of radioactive material during transportation. Independent organizations should continuously monitor the plant's release of radiation. (RRS)

068

[*Issues of Nuclear Fuel Reprocessing and Disposal of High Level Nuclear Waste*]. January 31, 1977. 13 pp.
Speech before California: Energy Resources, Conservation, and Development Commission; by J. Dexter Peach, Deputy Director, Energy and Minerals Div.

Organization Concerned: Energy Research and Development Administration; Nuclear Regulatory Commission.

As part of its responsibility for reviewing Federal programs, GAO has been analyzing the Nation's nuclear research and development programs. Major issues facing nuclear fuel reprocessing include: (1) the ability to protect and account for special nuclear material; (2) concern over proliferation of a nuclear technology which could produce weapons-grade material; (3) the ultimate impact of still evolving regulatory requirements; and (4) the absence of a commercial-sized reprocessing demonstration plant. The Nuclear Regulatory Commission has yet to reach a final conclusion on the environmental acceptability of nuclear fuel reprocessing. GAO has continually monitored Federal radioactive waste management programs. A recent public survey concluded that the general public views radioactive waste disposal as the most serious problem connected with nuclear power. The Energy Research and Development Administration has taken action to overcome adverse public reaction by developing a public affairs plan and making plans for earlier involvement of State and local officials in the site selection process. (RRS)

069

Reducing Nuclear Powerplant Leadtimes: Many Obstacles Remain. EMD-77-15; B-127945. March 2, 1977. 14 pp. + 2 appendices (4 pp.).
Report to the Congress; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Nuclear Regulatory Commission.
Congressional Relevance: *House* Committee on Science and Technology; *Senate* Committee on Energy and Natural Resources; Congress.
Authority: Energy Reorganization Act of 1974 (42 U.S.C. 5876; 42 U.S.C. 5801). National Environmental Policy Act of 1969 (42 U.S.C. 4321). Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1151).

A review of the Nuclear Regulatory Commission's (NRC) program for licensing the construction and operation of nuclear powerplants revealed many unsolved problems. Utilities need 10 or more years for the completion of the plants, from the planning phase, through licensing procedures, to construction. This long leadtime contributes greatly to the high costs of building nuclear powerplants.
Findings/Conclusions: NRC has changed some administrative practices and proposed legislation to reduce leadtimes. One change allows construction following completion of a portion of the permit application review. NRC is also encouraging the development of standard powerplant designs, and is proposing review of sites before receiving permit applications. State and local requirements are incompatible with some of these efforts and limit their effectiveness. Other factors contributing to long leadtimes are: (1) problems in assuring compatibility of parts of plants; (2) public opposition; (3) new safety technology; and (4) court decisions. *Recommendations:* The chairman of NRC should work jointly with the states to identify requirements in order to develop some commonality in the licensing process. (HTW)

070

Issues Related to the Closing of the Nuclear Fuel Services, Incorporated, Reprocessing Plant at West Valley, New York. EMD-77-27; B-151475. March 8, 1977. 15 pp. + enclosures (34 pp.).
Report to Rep. Leo J. Ryan, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Nuclear Regulatory Commission; Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Energy Reorganization Act of 1974 (42 U.S.C. 5841).

The Nuclear Fuel Services, Inc. (NFS) plant at West Valley, NY, the only commercial nuclear reprocessing facility operated in the United States, was closed in 1972 for modifications aimed at limiting effluent releases, reducing personnel exposures to radiation, and increasing plant capacity. *Recommendations:* To help in formulating an appropriate waste disposal technology for this waste, the Nuclear Regulatory Commission (NRC) should: develop waste performance criteria; develop criteria for decommissioning waste storage facilities; identify alternative processes for waste management and determine their technical and economic feasibility; characterize the physical and chemical properties of this waste sludge; proceed on a priority basis in the current analyses to assess the seismic integrity of the waste tanks; include a review of the stress relieving data in determining tank life to assure that the proper techniques were used; and assess the condition of the vault system and the surrounding soil character. In addition, NRC should: require New York State to report its plans on the future use of the West Valley site; prepare for NFS and State guidelines for decommissioning the plant and site and require a plan from them for decommission and correcting problems at the low-level waste burial site; and require the State to set up long term care requirements for the site. (Author/QM)

071

Issues Related to the Closing of the Nuclear Fuel Services, Inc., Reprocessing Plant at West Valley, New York. March 8, 1977. 15 pp.
Testimony before the House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Energy Research and Development Administration; Nuclear Regulatory Commission; Nuclear Fuel Services, Inc.; New York: Energy Research and Development Authority.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.

The West Valley, New York, nuclear reprocessing plant operated by Nuclear Fuel Services, Inc., was the only commercial reprocessing facility operating in the United States. The plant was closed in 1972. While the Nuclear Regulatory Commission (NRC) believes that the waste tanks at West Valley are in good condition, estimating tank life is unpredictable. The waste tanks may not meet current NRC seismic criteria. Physical and chemical characteristics of the high-level waste sludge contained in the tanks are not completely known, and removal of the sludge presents a large problem. Technology is being developed for solidifying and disposing of nuclear waste, but such information will not be available for several years. It is unlikely that the West Valley plant will ever operate again because of: (1) substantial costs ($615 million) needed to expand plant capacity and to meet NRC standards; and (2) the plant design may not be susceptible to modifications to lower radiation exposure to workers. No plans have been developed to decommission the West Valley Site; the State of New York is ultimately responsible for managing and disposing of radioactive waste. (RRS)

WHAT WILL BE THE ROLE OF FOSSIL FUELS IN MEETING FUTURE ENERGY NEEDS?

072

Capability of the Naval Petroleum and Oil Shale Reserves to Meet Emergency Oil Needs. B-66927. October 5, 1972. 44 pp. + enclosures (14 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Department of the Navy.
Congressional Relevance: Congress.
Authority: 10 U.S.C. 7421-38.

The Naval Petroleum and Oil Shale Reserves were established to provide sources of oil for Navy ships in the event of a crisis in which oil imports would be cut off. Their usefulness depends on the Navy's ability to produce significant quantities of oil on short notice and to preserve the oil in the ground until needed by restricting production to a minimum. *Findings/Conclusions:* The Naval Petroleum Reserves capability for producing oil for emergency needs has not been fully developed. Without additional development which would take time and cost more than $2 billion, the Reserves could supply only a very small portion of the oil that might be needed in an emergency. Excess production has been necessary at most of the Reserves to prevent drainage of oil by adjacent commercial wells. The Oil Shale Reserves were totally undeveloped and their ability to supplement existing oil supplies significantly in the near future was thought questionable. Proposed legislation, calling for production from a Reserve to cover costs of terminating offshore oil leases in the Santa Barbara Channel, would reduce resources in a major oil deposit. *Recommendations:* The Secretary of the Navy, with the approval of the President, should determine how much oil the Reserves should be able to produce and how soon it should be available for defense needs and then submit to Congress a plan for adequate development and conservation of the Reserves. Congress should: (1) evaluate requests that the Navy submits in response to GAO's recommendations; and (2) deliberate on proposed legislation affecting the Reserves. (Author/HTW)

073

Capability of the Naval Petroleum and Oil Shale Reserves to Meet Emergency Oil Needs. May 30, 1973. 12 pp.
Testimony before the Senate Committee on Interior and Insular Affairs; by J. K. Fasick, Director, Logistics and Communications Div.

Organization Concerned: Department of the Navy.
Congressional Relevance: *Senate* Committee on Interior and Insular Affairs.
Authority: 10 U.S.C. 7421-38. B-66927 (1972).

Executive orders have established four naval petroleum reserves and three naval oil shale reserves to provide sources of oil for naval ships. Proven recoverable oil in the reserve is about 1.2 billion barrels, whereas all domestic reserves, including the Navy's and Alaska's, total about 49-72 billion barrels. Without additional development, the naval reserves could contribute only a small amount of oil needed in an emergency. The reserves could not currently substitute for oil embargo or military needs in a national emergency, or even do so if fully developed by the mid-1980s. The Navy has had to produce oil in excess of what it considers the minimum necessary to maintain the readiness of the reserves. Offset production is carried out at three of the reserves, with leasing and drainage problems to be resolved at the fourth. Environmental, economic, and technical factors constrain production of oil shale reserves. The Navy should determine how much oil the reserves should be able to produce, and how soon the oil should be available to meet national defense needs, and then submit to Congress a plan for the development and conservation of the reserves. (DJM)

074

Information on the Proposed Alaska Oil Pipeline. B-174944. June 27, 1973. 24 pp. + appendices (2 pp.).
Report to Sen. William Proxmire: Rep. Les Aspin; by Elmer B. Staats, Comptroller General.

Organization Concerned: Alyeska Pipeline Service Co.; Department of the Interior; Office of Emergency Preparedness; Federal Power Commission.
Congressional Relevance: *Sen.* William Proxmire; *Rep.* Les Aspin.

Various sources contributed information on the proposed Alaska pipeline, but the information has not been verified. *Findings/Conclusions:* The delivered prices of 26.0-26.9 degree API sweet crude oil as of November 15, 1972 in New York, Chicago, and Los Angeles were $3.99, $3.79, and $3.20 per barrel, respectively. For medium sulphur crude oil, they were $2.805 and $3.12 per barrel in New York and Los Angeles, respectively. Percentages of crude oil from foreign and domestic sources used by New York, Chicago, and Los Angeles refineries, respectively, were: 22.0% domestic at $0.40 per barrel transportation cost (tc) and 78.0% foreign at $0.23 to $1.09 per barrel tc; 91.5% domestic at $0.125 to $0.24 per barrel tc and 8.5% foreign at $0.46 per barrel tc for Canadian oil (other prices not available); and 77.0% domestic at $0.10 to $0.60 per barrel tc and 23.0% foreign at $0.44 to $1.07 per barrel tc. The projected average cost per barrel for Persian Gulf oil delivered to Los Angeles after conversion to 26.0 degree crude was $2.12. The capital cost for a reinjection plant would be $175 million with an operating cost of about $6 million a year. Production at the Cook Inlet/South Alaska oil fields will be 100,000 barrels per day in 1980 and 50,000 per day in 1985. (Author/QM)

075

[*Problems Caused by Coal Mining Near Federal Reservoir Projects*]. B-177092. October 2, 1973. 48 pp. + 2 appendices (5 pp.).
Report to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Army; Department of the Army: Corps of Engineers.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816). Refuse Act of 1899 (33 U.S.C. 407).

Eight extensive coal mining operations impinge on the drainage basins of resevoir projects in Kentucky and West Virginia. *Findings/Conclusions:* Both the reservoirs' purposes and their environments were adversely affected by the coal mining operations. Major problems seen were: sedimentation buildup, water quality deterioration from acid mine drainage, and esthetic and environmental degradation. At one project, Fishtrap, Kentucky, extensive mining had negated its primary purpose–flood control–and cast doubts on its planned benefits. The types of estate deeds used to subordinate minerals directly affected the extent to which mining can be regulated on Corps of Engineers-owned land. The general-form estate deed used at Fishtrap did not adequately protect the environment. Pending legislation would control surface mining or surface disturbance from deep mining. *Recommendations:* The Corps should: revise its regulations for the types of estate deeds to be used to subordinate mineral rights and for factors to be considered when minerals are developed; monitor miners' compliance with restrictions; correct the problem of mining being conducted without Corps approval at Fishtrap; and protect Fishtrap from further deterioration of its drainage basin. (DJM)

076

Problems Caused by Coal Mining Near Federal Reservoir Projects. October 25, 1973. 6 pp.
Testimony before the House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Henry Eschwege, Director, Resources and Economic Development Div.

Organization Concerned: Department of the Army: Corps of Engineers; Bureau of Reclamation.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee
Authority: Refuse Act of 1899.

Extensive coal mining within drainage basins of water resource projects can adversely affect the projects' purposes and their environments. The major problems noted at eight projects in the Army Corps of Engineers' (Corps) Ohio River Division were: sediment in streams and other bodies of water; deterioration of water quality by acid mine drainage; and the degradation of the projects' esthetic aspects and their environments. At one project excessive sediment has hindered the objective of flood control as a result of the Corps' method of acquiring land and subordinating mineral rights which did not adequately protect the project from the adverse effects of mineral development. The Corps' ability to regulate mining on lands not acquired for project purposes but within the drainage basins was hampered by deficiencies in relevant legislation and Federal-State coordination. The Corps should: revise its regulations to give adequate guidance in subordinating mineral rights; establish a system for monitoring compliance; take action against mining operations being conducted without the Corps' approval; and promptly develop and implement a plan to correct the sediment problem at the aforementioned project. The Congress should consider legislation protecting the Federal investment in reservoir projects, particularly regarding the effects of deep mining. (QM)

077

Progress and Problems in Developing Nuclear and Other Experimental Techniques for Recovering Natural Gas in the Rocky Mountain Area. B-164105. April 2, 1974. 80 pp. + 2 appendices (3 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission; Atomic Energy Commission; Department of the Interior.
Congressional Relevance: Congress.
Authority: Atomic Energy Act of 1954 (P.L. 83-703; 42 U.S.C. 2051).

The amount of natural gas available and expected to be available is not sufficient to meet current and anticipated demands within the United States through 1990. Large amounts of gas are located in low-permeability or tight geological formations in the Rocky Moun-

tain area in three basins: Green River Basin, Wyoming; Piceance Basin, Colorado; and Uinta Basin, Utah. ***Findings/Conclusions:*** This gas in not considered part of the U.S. reserves because it cannot be recovered economically with conventional techniques. Either nuclear stimulation or massive hydraulic fracturing could be used to recover this gas. Both processes are currently under investigation. A third method currently under study is chemical explosive fracturing. Nuclear stimulation field experiments indicate that, in similar geological formations, several times more gas can be recovered over a well's life using nuclear stimulation than can be recovered using conventional techniques. Experiments using the massive hydraulic fracturing technique have not been conducted in the Rocky Mountain formations, and Federal and industry officials are not sure whether this technique can be applied there successfully. Field experiments with chemical explosive fracturing have not been successful. Before nuclear stimulation could be used for commercial development of natural gas, Congress would have to enact legislation to allow the Atomic Energy Commission to provide nuclear detonation services to private firms. (SC)

078

Receipt and Coordination of Natural Gas Reserve Data. B-178912. April 30, 1974. 17 pp. + appendices (46 pp.).
Report to Rep. Henry B. Gonzalez; by Elmer B. Staats, Comptroller General.

Organization Concerned: Securities and Exchange Commission; Federal Power Commission; Coastal States Gas Producing Co.
Congressional Relevance: *Rep.* Henry B. Gonzalez.
Authority: Natural Gas Act (15 U.S.C. 717g (b)). Securities Act of 1933 (15 U.S.C. 77a). Securities and Exchange Act of 1934 (15 U.S.C. 78a).

A review of gas reserve data handled by the Securities and Exchange Commission (SEC) and the Federal Power Commission (FPC) was directed towards determining what information the agencies receive, whether gas supplies are verified by FPC when gas sales are approved, and whether efforts of agencies are coordinated. ***Findings/Conclusions:*** Information on gas reserves is required by SEC with registration statements and by FPC in accordance with its information gathering powers. The FPC's Bureau of Natural Gas is responsible for determining the accuracy of gas reserve estimates presented for certification of interstate gas sales. No estimate was made by the FPC staff of the proportion of approved sales reviewed, but it was believed to be a majority. Coordination between SEC and FPC with respect to gas reserve data was very limited. Most interagency requests involved transmittal of prospectuses by SEC to FPC for review. When discrepancies that could not be resolved were revealed, they were merely brought to the attention of SEC. One such case involved differing estimates of gas reserves claimed by South Texas Natural Gas Gathering Company, an affiliate of Coastal States Gas Producing Company. ***Recommendations:*** To assist FPC in review of prospectuses, the Chairman of SEC should direct that FPC be provided with supplementary gas reserve data pertaining to interstate operations. The Chairmen of FPC and SEC should jointly evaluate results achieved from this practice to determine if it should be continued or eliminated. (HTW)

079

Statistical Data on Petroleum and Petroleum Products. B-178205. May 24, 1974. 2 pp. + appendices (38 pp.).
Report to Rep. Lester L. Wolff; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Department of the Interior; Department of Commerce; United States Tariff Commission.
Congressional Relevance: *Rep.* Lester L. Wolff.

In response to a request for information on petroleum products, import and export data, production and demand data, and reserve and stock data on petroleum and petroleum products were reviewed. The following information was compiled: (1) schedules of domestic production, domestic demand, imports and exports for crude petroleum, selected petroleum products, natural gas, and natural gas liquids (1969-1973); (2) domestic productive capacity of crude petroleum, natural gas, and natural gas liquids compared to actual production attained on March 31, 1973; (3) operable refinery capacity and crude petroleum processed by month in 1972 and 1973; (4) estimate of domestic crude oil resources as of December 31, 1972; (5) end of year primary stocks of selected petroleum products and natural gas liquids products (1969-1973); (6) Department of Commerce regulations for exports of petroleum and its products; and (7) schedules of production and exports of selected petrochemicals, plastic resins, and plastic materials by month in 1972 and 1973. (Author/QM)

080

Federal Coal Research–Status and Problems to Be Resolved. RED-75-322; B-182859. February 18, 1975. 82 pp. + appendix (1 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: Congress.
Authority: Energy Reorganization Act of 1974 (42 U.S.C. 5801).

The potential for increased development and use of U.S. coal resources in meeting increased energy demands is great. ***Findings/Conclusions:*** In order for coal to play an important role in meeting future U.S. energy needs, 1) research must demonstrate the commercial feasibility of converting coal to other sources of energy; 2) the coal industry must be willing to finance and be capable of supplying increasing quantities of coal; and 3) environmental problems associated with coal supply and use must be resolved rationally. ***Recommendations:*** The Administrator of the Energy Research and Development Administration (ERDA), in cooperation with the Department of the Interior, the Federal Energy Administration, and other agencies involved in coal research, should determine whether formal procedures for exchanging research and development information can be developed. Because of potential problem areas which inhibit the transition from the research phase to the commercial production phase for various coal conversion processes and problems presently inhibiting the increase in the U.S. coal supply, particularly the need for improved mining technology, the Administrator of ERDA should give these problems early consideration in the planning for future coal research and developing efforts. (SC)

081

Financing Infrastructure in Energy Development Areas of the Western States. August 22, 1975. 13 pp.
Speech before Seminar on Financing Infrastructure in Energy Development Areas of the Western States, Snowbird, UT; by J. Dexter Peach, Deputy Director, Energy and Minerals Div.

Authority: Federal Coal Leasing Amendments Act of 1975; S. 391. The Outer Continental Shelf Lands Management Act of 1975; S. 521 (94th Cong.). The Coastal Zone Management Act Amendments of 1975; S. 586 (94th Cong.). Mineral Leasing Act of 1920. Coastal Zone Management Act of 1972. H.R. 7680.

Assuring adequate visibility at the national level to the problems attendant to Rocky Mountain energy resource development is a key to the political, administrative, and economic feasibility of significant Federal involvement in solution of the problems. The Federal Government must understand that State and local interests desire early, substantive, and real involvement in both the planning and decision-making processes of energy resource development. The very specific problem of obtaining adequate funding to offset front-end impacts of development at the local level is a matter of concern. The current legislative picture indicates that the Federal Government very likely will assist State and local governments in planning for the impacts of energy resource development. The ways to offset the impacts of such development are much less clear except for a possible increase in the share of revenues produced from Federal leases distributed to states under the Mineral Leasing Act of 1920. Even the fate of that legislation may be suspect, since the Office of Management and

Budget has traditionally taken strong positions arbitrarily earmarking revenues and could recommend a veto. A better process for involving State and local government and private interests in energy resource development planning and decisionmaking would: commit the Federal Government to a specific timetable regarding development of energy resources in an area; provide for State and local involvement at key points in the planning and decisionmaking processes; and provide explicit mechanisms for arriving at mutually agreeable and timely resolution of the concerns of all parties involved. (Author/QM).

082

The Economic and Environmental Impact of Natural Gas Curtailments during the Winter of 1975-76. RED-76-39; B-181503. October 31, 1975. 43 pp. + appendix (3 pp.).
Report to Rep. Jack Brooks, Chairman, House Committee on Government Operations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission; Federal Energy Administration.
Congressional Relevance: *House* Committee on Government Operations.
Authority: F.P.C. Order 467-A. F.P.C. Order 467-B. F.P.C. Order 533.

Because of shortages of natural gas, the Federal Power Commission is projecting major curtailments by interstate pipeline companies during the 1975-76 winter season. The total amount to be curtailed for the period April 1975 through March 1976 is expected to be about 45% more than the amount curtailed during the same months in 1974-1975. The States expected to be the most severely affected by this winter's gas shortages are Ohio, Pennsylvania, New York, New Jersey, Maryland, Virginia, North Carolina, and South Carolina. *Findings/Conclusions:* These eight States receive about 68% of their total interstate supply from four interstate pipelines that were projecting major curtailment increases in 1975-1976 over amounts curtailed in previous years. These States have many industrialized areas which consume large amounts of gas and which employ a large percentage of the States' total labor force. Localized areas are expected to be severely impacted economically by the projected curtailments, particularly in those areas with industries that are dependent on gaseous fuels for processing or as feedstock. Alternative fuels can cost three to four times more than natural gas. Although GAO did not identify any broad areas of projected unemployement or widespread shutdowns of industrial operations due to the curtailments, unseasonably cold weather early in the winter and/or a shortage of alternative fuels could result in these conditions. (Author/SC)

083

The Economic and Environmental Impact of Natural Gas Curtailments During the Winter of 1975-76. PSAD-76-51; B-178205. November 11, 1975. 9 pp.
Testimony before the House Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; by Henry Eschwege, Director, Resources and Economic Development Div.

Organization Concerned: Federal Energy Administration; Federal Power Commission.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee.

The Federal Power Commission (FPC) projected a total natural gas curtailment of 3.2 trillion cubic feet for the period April 1975 through March 1976, representing, for the winter heating season, a 0.3 trillion cubic feet increase in curtailments over the 1974-75 season. Apart from localized unemployment, assuming normal weather conditions and the availability of alternative fuels, without which the impact would be more severe, the most important impact of the gas curtailments will be in terms of higher industry operating costs caused by increased fuel costs. The industries plan to pass on these increases to the consumer whenever possible. Ohio, New Jersey, and North Carolina are States that will be seriously affected by curtailments. North Carolina is the most critical area; the number of industries without an alternative fuel capability is relatively high. The Federal Energy Administration, in charge of allocating fuels other than natural gas and electricity, projects adequate supplies of fuel oil nationwide but the availability of propane is uncertain. FPC natural gas reports do not show the economic impact of the curtailments on the areas involved. It appears that FPC requirements data may be overstated and since natural gas curtailments generally are computed as requirements less deliveries, the reported curtailment quantities could also be overstated. (Author/QM)

084

Trans-Alaska Oil Pipeline–Progress of Construction through November 1975. RED-76-69; B-180224. February 17, 1976. 45 pp. + appendices (7 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Alyeska Pipeline Service Co.
Congressional Relevance: Congress.
Authority: Trans-Alaska Pipeline Authorization Act of 1973 (P.L. 93-153). Defense Production Act.

The Alyeska Pipeline Co. completed construction of the Alaska oil pipeline in the fall of 1976, but the oil is not planned to be transported until July 1, 1977, because pump stations and the terminal are not expected to be completed before that date. ***Findings/Conclusions:*** The planned pipeline system is to have a capability to transport 600,000 barrels of oil a day by July 1, 1977, and 1.2 million barrels a day by November 1977. A decision had not been made by November 1975 with regard to increasing the capacity in excess of 1.2 million barrels a day. The quality assurance program for pipeline construction did not function properly during the early part of the 1975 construction season because Alyeska had not given its quality control organization authority to halt construction which did not conform to environmental or technical regulations. Federal and State monitors had to carry out the quality control functions by requiring correction of some work. Construction of the pipeline will affect the Alaskan landscape permanently. It will cross 801 miles of previously undeveloped land. The effectiveness of the technical requirements of the pipeline system will not be known until the system becomes operational. Some environmental damage has already resulted from the lack of erosion control, construction related oilspills, and failure to meet sewage treatment standards at construction camps. (Author/QM)

085

Status and Obstacles to Commercialization of Coal Liquefaction and Gasification. RED-76-81; B-151071. May 5, 1976. 38 pp. + appendices (26 pp.).
Report to Sen. Jennings Randolph, Chairman, Senate Committee on Public Works; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Senate* Committee on Public Works.
Authority: Natural Gas Act of 1938 (15 U.S.C. 717). Synthetic Liquid Fuels Act of 1944 (30 U.S.C. 321).

The Energy Research and Development Administration (ERDA) is funding development work on a number of new or second-generation liquefaction and gasification processes. ERDA expects these processes, when developed successfully, would reduce the cost of synthetic oil and gas by 15% or more. ***Findings/Conclusions:*** ERDA spent about $205 million in fiscal year 1975 on this development work and is authorized to spend about $250 million in fiscal year 1976 and the 3-month transitional quarter. ERDA's efforts on coal liquefaction and gasification have not yet progressed to the point where a plant has been built that can process more than 100 tons of coal a day. Once a successful demonstration-scale operation is achieved, ERDA expects little technical risk in scaling up to com-

mercial size. It appears highly unlikely, though, that any commercial-sized coal liquefaction plant will be operating in the United States by 1985. A principal obstacle has been the availability of less expensive natural oil and gas. In the gasification area, at least 16 projects have been announced, but only three have progressed to the point of applying for the required Federal Power Commission approval. Economic constraints to building such commercial plants include: large capital requirements; the ability to obtain private sector financing; cost escalation; and competition from other fuel sources. Even the ERDA revised gasification estimate of 250,000 to 500,000 barrels of oil a day by 1985 could be difficult to achieve. *Recommendations:* Regulatory changes or Federal subsidies might be needed in addition to loan guarantees for initial high British thermal unit coal gasification projects. Environmental uncertainties and the necessity for large amounts of water to process the coal need to receive further study. (Author/QM)

086

Plans for Construction of a Magnetohydrodynamics Test Facility in Montana. EMD-76-8; B-178205. September 1, 1976. 1 pp. + appendices (11 pp.).
Report to Rep. Marilyn Lloyd; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Rep.* Marilyn Lloyd.
Authority: Department of the Interior and Related Agencies Appropriation Act of 1975 (P.L. 93-404; 88 Stat. 803). Special Energy Research and Development Appropriation Act of 1975 (P.L. 93-322; 88 Stat. 276). S. Rept. 93-1069. S. Rept. 93-903. H. Rept. 93-1123. H. Rept. 94-696.

For a number of years the Federal Government, anticipating an increased use of coal, has been funding programs to make coal a cleaner source of energy. It has expanded its efforts to include technologies designed to convert coal energy to electricity more efficiently than conventional powerplants do. In this way, the same amount of electricity could be generated using less of the polluting fuel. An electrical generator operating on the principle of magnetohydrodynamics (MHD) is one such technology. The goal of the Energy Research and Development Administration's (ERDA) MHD program is to design, construct, and operate a combined MHD and steam commercial demonstration plant by 1989. *Findings/Conclusions:* Analysis of matters concerning the construction and operation of the MHD test facility in Montana discloses that the Congress did intend for ERDA to build two such facilities there, the component development and integration facility and later the engineering test facility. Because of this congressional mandate, no analysis was made to determine whether it would be more advantageous to build either of these facilities in another State. (Author/QM)

087

[***The Legality of the Reported Use by the Energy Research and Development Administration of Certain Fossil Energy Funds***]. B-178205.80. September 7, 1976. 9 pp.
Letter to Rep. Ken Hechler, Chairman, House Committee on Science and Technology: Energy Research, Development and Demonstration (Fossil Fuels) Subcommittee; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Science and Technology: Energy Research, Development and Demonstration (Fossil Fuels) Subcommittee.
Authority: (P.L. 94-187; 89 Stat. 1063). Energy Reorganization Act of 1974 (P.L. 94-438; 88 Stat. 1233; 42 U.S.C. 5801 et seq.). Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577; 88 Stat. 1878; 42 U.S.C. 5901 et seq.). 89 Stat. 1073. H.R. 12113 (94th Cong.). H. Rept. 94-294.

088

[***Contracting Out Basic Planning and Management Program Functions***]. EMD-76-11; B-186105. September 21, 1976. 2 pp. + enclosures (13 pp.).
Report to Rep. Ken Hechler, Chairman, House Committee on Science and Technology: Energy Research, Development and Demonstration (Fossil Fuels) Subcommittee; Rep. William S. Moorhead, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; TRW, Inc.
Congressional Relevance: *House* Committee on Science and Technology: Energy Research, Development and Demonstration (Fossil Fuels) Subcommittee; *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438).

The Energy Research and Development Administration's (ERDA's) Fossil Energy Organization awarded a contract for various energy-related planning and analysis services to TRW, Inc. *Findings/Conclusions:* The effect of an agency contracting out basic functions for planning and management of its programs is to dilute the agency's ability to retain essential control over the conduct of its programs and to assure the Congress that its programs are being carried out in an efficient and economical manner. The heavy workload and the time pressures involved in putting together a national energy research and development plan may have justified the need for the services TRW, Inc., provided. Nevertheless, ERDA needs to reduce its dependence on management and technical support contracts. Fossil Energy Organization officials are reducing dependence by increasing their staffing. *Recommendations:* The Administrator of ERDA should: establish within the Fossil Energy Organization a system for screening information sent to support service contractors to prevent possible conflicts of interest; show as a line item in Fossil Energy's budget to the Congress the funds needed for support service contracts to keep the Congress better informed; and require that all future service contracts contain a provision requiring the inclusion of a conflict-of-interest clause in all subcontracts and provisions restricting contractors' supplying consulting services on other contractors' competitive and noncompetitive proposals for rendering services in various areas where a conflict could arise. (Author/QM)

089

Review of FPC and FEA Actions in Assessing the Impact of Natural Gas Curtailments during the Winter of 1976-77. EMD-77-12; B-180228. January 13, 1977. *Released* April 15, 1977. 12 pp.
Letter to Rep. John D. Dingell, Chairman, House Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission; Federal Energy Administration.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee.

GAO was asked to examine whether there would be shortages of natural gas in the winter of 1976-77 and the need for gas curtailments, their effects, and what could be done to reduce their impact. *Findings/Conclusions:* As the Federal Power Commission (FPC) and the Federal Energy Administration (FEA) were working on this question, GAO did not think its independent assessment was necessary. Questions remain concerning Federal agencies' ability to respond to emergency fuel shortages. The probability of problems arising could be minimized if the two agencies worked more closely in planning the work to be done and the data to be obtained. Such planning would assure that the needed data would be available at the critical decisionmaking points. The effectiveness of the FPC hearings

with gas pipeline companies on gas curtailment issues would be enhanced if FEA staff personnel would participate. *Recommendations:* The chairmen of the two agencies should issue a joint memo that delineates their respective tasks, particularly in formulating contingency plans arising from shortages, and cooperate in data collection and dissemination. Their personnel should have unrestricted access to this data. FEA should participate in FPC hearings on gas curtailments. (DJM)

090

Issues Needing Attention in Developing the Strategic Petroleum Reserve. EMD-77-20; B-178205. February 16, 1977. 19 pp. + 2 appendices (3 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration; Department of the Interior; Department of State; Department of Defense; Department of the Navy.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Interior and Insular Affairs Congress.
Authority: Energy Policy and Conservation Act (P.L. 94-163).

The concept of the Strategic Petroleum Reserve is to provide protection against future oil embargoes by creation of a reserve equal to approximately 500 barrels of crude oil. As part of the reserve, an Early Storage Reserve is to be established to contain at least 150 million barrels by December 1978. The proposed reserve will contain only crude oil which will be stored underground in salt dome caverns or in mines, primarily along the Gulf Coast. Issues which require further analysis by Congress relate to three questions: (1) Is there a need for the type of Strategic Petroleum Reserve? (2) How should the strategic Petroleum Reserve be filled? and (3) How should the Strategic Petroleum Reserve be financed? *Findings/Conclusions:* GAO continues to support the concept of a system of national emergency energy reserves. It believes, however, that the use of industry crude oil and product stocks may be an alternative to the creation of a Strategic Petroleum Reserve. The Federal Energy Administration plans to purchase oil for the reserve at near the national average composite price. As long as price controls remain on domestic oil, royalty oil could be acquired to fill the reserve, resulting in significant dollar savings with little or no adverse financial impact on small refiners. (RRS)

091

[*Procurement of Foreign and Domestic Petroleum by Department of Defense*]. PSAD-76-51; B-178205. December 29, 1977. 18 pp. + enclosure (2 pp.).
Report to Sen. William Proxmire, Chairman, Joint Economic Committee: Priorities and Economy in Government Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Defense.
Congressional Relevance: *Joint* Economic Committee: Priorities and Economy in Government Subcommittee.
Authority: Truth-in-Negotiations Act of 1962 (P.L. 87-653). Defense Production Act of 1950. Emergency Petroleum Allocation Act. B-168450 (1974).

Although the Defense Fuel Supply Center has made a genuine effort to procure petroleum for the Department of Defense (DOD) at the best available prices, the procedures followed at the Center have not provided assurances that prices paid for petroleum were fair and reasonable. *Findings/Conclusions:* Suppliers were allowed to bid on part of the total quantity required and by lots (block bidding) of various sizes at succeedingly higher prices, which might have limited the effectiveness of competition in getting reasonable prices. Because sufficient bids were not received to provide fuel in early 1973, the Center was forced to negotiate contracts with suppliers. There was not enough data available to contract officials to ensure that prices negotiated in 1973 and 1974 were fair. Economic price adjustment clauses in 65 of 68 contracts in the first quarter of 1975 could have resulted in questionable price adjustments. Public Law 93-653 remains a sound basis for negotiating fair prices when competition is lacking. *Recommendations:* Where companies are exempt from furnishing cost data on the basis of substantial sales to the public, the Secretary of Defense should obtain enough data to establish that prices are based on prices paid by comparable customers on recent purchases. Audits of companies' sales and market price data should be obtained before conducting contract negotiations. DOD should also explore the feasibility of basing escalation payments on changes in price index designed to measure movement in petroleum prices, and provide additional training to personnel, particularly for contract pricing techniques and the petroleum industry. (DJM)

HOW DO FINANCIAL INCENTIVES, TAX POLICIES, AND REGULATORY POLICIES AFFECT ENERGY SUPPLY ACTIONS?

092

Opportunities for Improvements in Reclaiming Strip-Mined Lands under Coal Purchase Contracts. B-114850. August 9, 1972. 33 pp. + appendices (20 pp.).
Report to Rep. Ken Hechler; by Elmer B. Staats, Comptroller General.

Organization Concerned: Tennessee Valley Authority.
Congressional Relevance: *Rep.* Ken Hechler.

About 1960 the Tennessee Valley Authority (TVA) began to encourage adoption of strip-mining legislation in the States from which it buys coal. Because not all of these had adopted strip-mining environmental protection legislation by 1965, TVA decided to include reclamation requirements in its strip-mined-coal purchase contracts. These requirements provided that the contractor: bury all toxic materials, keep the drainage free of spoil and control water runoff, grade the soil banks to provide for revegetation, revegetate stripped areas, and complete the required reclamation work within 24 months after the delivery of all coal supplied under the contract.

Findings/Conclusions: TVA's latest requirements are more specific than any of its earlier versions and are a significant improvement in TVA's approach to the reclamation of strip-mined lands. TVA needs to consider further limiting mining on steep slopes. The final bench sloping requirement tends to result in depressions which entrap water and leave the unsightly highwall exposed to view. Eight of the 25 mining sites GAO visited had revegetation problems because of acid-bearing soil, loss of topsoil, or improper planting techniques. Despite remedial actions which will affect future contracts, TVA is still faced with the problem of effective reclamation for earlier contracts where deliveries have been completed but the contractors have not met the reclamation requirements. TVA did not have adequate procedures for conducting and reporting on inspections of reclamation activities.

Recommendations: TVA should: give careful attention to the problem of excess soil acidity before including an area in an approved mining plan; establish guidelines on enforcement actions for improper reclamations; and establish procedures for use in performing and reporting on inspections. (QM)

093

Administration of Regulations for Surface Exploration, Mining, and Reclamation of Public and Indian Coal Lands. B-148623. August 10, 1972. 31 pp. + appendix (5 pp.).
Report to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; Rep. Guy Vander Jagt, Ranking Minority Member; by Elmer B. Staats, Comptroller General.

Organization Concerned: Bureau of Indian Affairs; Bureau of Land Management; Department of the Interior; Geological Survey.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee. *Rep.* Guy Vander Jagt.
Authority: Mineral Lands Act of 1920, as amended (P.L. 86-705; 30 U.S.C. 181). Mineral Leasing Act for Acquired Lands (P.L. 80-382; 30 U.S.C. 351). National Environmental Policy Act of 1969 (P.L. 91-190; 83 Stat. 852). 52 Stat. 347. 35 Stat. 781. 43 C.F.R. 23. 25 C.F.R. 177.

The Department of the Interior's regulations concerning surface exploration, mining, and reclamation of public lands and Indian lands do not provide specific technical requirements for such activities. Such requirements are based on examinations of the effects that the proposed mining operations will have upon the environment and are included as special stipulations in permits or leases granted by the Department to the mining operators. During the period January 18, 1969, to November 1, 1971, the Department issued 258 permits and 38 leases for coal exploration and mining on public and Indian lands. The Bureau of Land Management (BLM) had 529 permit and 115 lease applications pending at November 1, 1971; the Bureau of Indian Affairs (BIA) had none. *Findings/Conclusions:* For the 65 permits and leases reviewed (53 for BLM and 12 for BIA), it was found that: the required technical examinations had not been conducted for 35 of the permits and leases; some permittees were operating without approved exploration plans and some plans had been approved without technical examinations; some compliance and performance bonds covering the requirements, including reclamation, of leases or permits had not been obtained from the operators; and some of the reports required to be submitted by the operators to the Department at various stages of the operations on such matters as grading and backfilling, planting, and abandoning operations had not been submitted. Documentation of the results of technical examinations, on-site visits, and other activities required by the regulations was not always prepared. BLM's procedures for the preparation of environmental impact statements do not outline the criteria to determine when and under what circumstances statements should be prepared. BIA has not developed any procedures for the preparation of such statements. *Recommendations:* The Secretary of the Interior should clarify the requirements of the Department's regulations by providing guidance as to: the timing and scope of technical examinations and the submission and approval of exploration and mining plans; the required amount of performance bonds; the need for adequate documentation of the results of the activities conducted under the regulations; and the need for documented periodic reviews of the administration of the regulations. The Secretary should appraise the adequacy of the fee associated with processing an application for a coal permit or lease; require BLM to revise its procedures for the preparation of environmental impact statements to comply with the guidelines of the Council on Environmental Quality, and require BIA to adopt such procedures. (Author/QM)

094

Procedures for Evaluating Reasonableness of Petroleum Pipeline Rates Need Improving. B-153389. September 20, 1972. 16 pp. + appendices (4 pp.).
Report to the Congress; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Department of Defense; Department of the Air Force; Interstate Commerce Commission.
Congressional Relevance: Congress.
Authority: Truth in Negotiations Act of 1962. Interstate Commerce Act.

The Department of Defense (DOD) spends an estimated $17 million annually transporting petroleum fuels by pipelines within the continental United States. A major portion of this cost is associated with fuel shipments to Air Force bases. *Findings/Conclusions:* DOD paid excessive rates to transport fuel by pipeline to three Air Force bases which accounted for $3.3 of the $17 million. In determining the reasonableness of special pipeline rates offered to the Government, DOD compared its rates with those of higher cost modes of transportation rather than with commercial pipeline rates. Commercial pipeline rates of one carrier had been reduced, but no adjustments had been made in the rates charged to the Government for the same service. As a result of GAO's review, DOD negotiated retroactive rate reductions and obtained refunds from the carriers.

Recommendations: DOD should: negotiate rates for new pipeline service and review the reasonableness of present rates by requiring carriers to limit quotations for pipeline service to that portion of the pipeline used in common carriage; accept rates no higher than those charged commercial customers; negotiate separate contracts for the extra services provided exclusively to the military; and, if the carriers refuse to negotiate separate contracts, solicit the assistance of the Interstate Commerce Commission in establishing reasonable rates. (QM)

095

[*Department of the Interior's Views of Comments on Administration of Regulations for Surface Exploration, Mining, and Reclamation of Public and Indian Coal Lands*]. B-148623. January 31, 1973. 7 pp.
Report to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Bureau of Land Management; Council on Environmental Quality; Bureau of Indian Affairs; Geological Survey.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Mineral Leasing Act (30 U.S.C. 181). National Environmental Policy Act. 25 C.F.R. 177. 43 C.F.R. 23.5(a). 43 C.F.R. 23.7, 23.8. Bureau of Land Management Manual, § 3509.

The Department of the Interior believes that: (1) the Bureau of Land Management's (BLM's) procedures for preparing environmental impact statements were developed through formal and informal consultation with the Council on Environmental Quality (CEQ) and fully comply with CEQ guidelines; (2) GAO's report on the administration of regulations for surface exploration, mining, and reclamation of public and Indian coal lands by the Department was not in all cases factual and accurate; and (3) reclamation regulations were fully implemented, and further clarification of BLM's regulations or the manual instructions and other implementing guidelines of the Geological Survey is unnecessary. *Findings/Conclusions:* BLM's procedures do not provide adequate criteria to determine when and under what circumstances BLM should prepare individual environmental impact statements. After BLM has issued a statement on its coal-leasing program, criteria will be necessary to identify those actions which qualify as exceptions to the program and which justify individual statements. Department officials do not have the evidence to back up their claim that 10 leases and permits, rather than the 23 cited by GAO, did not have technical examinations before issuance, extension, or adjustment. *Recommendations:* Further clarification and guidance regarding the Department of the Interior's reclamation regulations is needed, particularly concerning circumstances ir which site examinations are not required. (QM)

096

Revenues and Costs Allocated to Power Operations at Multiple-Purpose Projects in the Southwestern Federal Power System. B-125031. February 20, 1973. 36 pp. + appendices (12 pp.).
Report to Rep. Carl Albert, House of Representatives: Speaker of the House; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Army; Department of the Interior; Southwestern Power Administration; Department of the Army: Corps of Engineers; Federal Power Commission.
Congressional Relevance: *House* of Representatives: Speaker of the *House. Rep.* Carl Albert.
Authority: Flood Control Act of 1944 (16 U.S.C. 825s). S. Rept. 1764 (84th Cong.). S. 3338 (84th Cong.). H.R. 2788 (84th Cong.) B-163798 (1970).

The Speaker of the House was concerned over recent rate increases for electric power sold to consumers throughout the Southwest and the propriety of costs and other charges assessed against the power operations of these projects. *Findings/Conclusions:* Revenues for the Southwestern Power System (SPS) totaled about $273 million for fiscal years 1960 through 1970, and expenses, excluding depreciation expenses, totaled about $273 million, resulting in a deficit of $10 million. The Federal investment allocated to power facilities for SPS's 16 Army Corps of Engineers' (Corps) construction projects in operation at June 30, 1970, totaled $437,940,455. SPS's operation and maintenance expenses totaled about $48.8 million for the 11 fiscal years ended June 30, 1970; $20.5 million for the activities of the Southwestern Power Administration (SPA) and $28.3 million for the Corps' generating projects. Although the percentage

of total joint-use project expenses allocated to power has tended to decrease for projects constructed in recent years, the total joint-use costs allocated to power have increased. (Author/QM)

097

Proposed Revisions to the Criteria and Contracts for Uranium Enrichment Services. B-159687. March 15, 1973. 30 pp. + 3 appendices (13 pp.).
Report to Rep. Melvin Price, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Atomic Energy Act of 1954, as amended (42 U.S.C. 2011). Private Ownership of Special Nuclear Materials Act (P.L. 88-489).

The Atomic Energy Commission (AEC) has proposed revisions to the Uranium Enrichment Services Criteria. These revisions would change the terms and conditions under which AEC currently offers to provide enrichment services by requiring its customers to assume a greater share of the financial risks in supplying such services. The proposed changes would provide AEC with the flexibility to initiate operating practices which should be helpful in accomplishing AEC's objectives. ***Findings/Conclusions:*** There are no legal objections to the proposed criteria changes and the corresponding changes AEC is contemplating in its contractual relationship with its customers. AEC's objectives in changing the criteria seem reasonable because of the uncertainties as to the level of future customer demand for enrichment services and the substantial commitments necessary to provide additional enrichment capability. Because of the possibility that AEC may reach its enrichment capability limit by the end of calendar year 1974, the Joint Committee on Atomic Energy may wish to consider requiring that AEC report on its total outstanding commitments, estimated additional commitments, and maximum enrichment capability more frequently than the present annual report period. The Committee may also wish to require AEC to include information on industry's advancement toward assuming responsibility for providing any additional enrichment capability needed beyond AEC's capability in its report. The Committee may wish to discuss with AEC its contingency plans as to what it would do if industry can not assume responsibility for new enrichment capability by the end of 1974. (SC)

098

How the Federal Government Participates in Activities Affecting the Energy Resources of the United States. B-178205. April 6, 1973. 34 pp. + 4 appendices (8 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission; National Science Foundation; Bureau of Mines; Department of the Interior; Geological Survey; Bureau of Reclamation; Rural Electrification Administration; Federal Power Commission; Tennessee Valley Authority; Environmental Protection Agency; Department of the Army: Corps of Engineers; Department of Commerce; Coast Guard.
Congressional Relevance: Congress.
Authority: Geothermal Steam Act of 1970 (P.L. 91-581). Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 801). Water Quality Improvement Act of 1970 (P.L. 91-224).

Virtually all energy demands in the United States are presently satisfied by the primary energy sources–oil, natural gas, coal, water, and nuclear energy–and by electricity, which is considered to be a secondary form of energy because it is produced through conversion of a primary source. Advanced energy sources–geothermal, oil shale, solar, thermonuclear fusion, and others–are looked to with hopeful anticipation for serving future needs. ***Findings/Conclusions:*** The Federal effort in the energy field has evolved over the years without the benefit of a formal national energy policy and without centralized direction or coordination. Efforts during fiscal years 1972 and 1973 pertained to the: enhancement of existing energy sources and supplies; research and development of potentially new energy sources; determination of new and better ways to protect against effects on the environment caused by development and use of certain sources of energy; production and sale of electricity; and regulation of energy-producing facilities. In fiscal year 1972, 23 Federal departments and independent agencies, comprising 64 offices, bureaus, commissions, and administrations, incurred obligations amounting to $3.9 billion and utilized 44,000 man-years of effort for energy-related programs and activities. For fiscal year 1973, these agencies estimated obligations of $5.4 billion and about 45,000 man-years of efforts. The 1973 estimate includes about $660 million in retroactive payments of black-lung-disease benefits to disabled coal miners and their widows and dependents. About 95% of the amounts obligated during fiscal years 1972 and 1973 were related to primary and secondary sources of energy. (Author/QM)

099

[***Repayment Requirements of the Federal Investment in the Tennessee Valley Authority's Electric Power System***]. B-114850. April 27, 1973. 6 pp.
Report to Rep. Joe L. Evins, Chairman, House Committee on Appropriations: Public Works Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Tennessee Valley Authority.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee.
Authority: Tennessee Valley Authority Act, § 15d (P.L. 86-137; 16 U.S.C. 12A). S. Rept. 86-470.

The legal requirements for repayment of the Federal appropriation investment in the Tennessee Valley Authority (TVA) and the return on that investment treat a large part of the investment as if it were equity capital. Although TVA is required to repay $1 billion of the appropriation investment, it is not required to repay about $201 million of the investment which was outstanding at June 30, 1960, or any of the appropriation investment made after that date. ***Findings/Conclusions:*** If the appropriation investment outstanding at June 30, 1973, were considered as equity capital, the $20 million annual repayment of the appropriation investment presently required would be available instead to reduce the amount of bonds TVA would otherwise issue to finance its power program. This procedure would result in net savings in interest costs because funds which TVA would use to repay the appropriation investment with an estimated interest rate of 5.75% would be used, instead, to reduce the amount of bonds which TVA would otherwise issue at an estimated interest rate of 7.5%. The resulting savings in interest costs would be available to reduce or postpone power rate increases. From fiscal year 1974 through fiscal year 2014, the use of the alternative repayment method could result in TVA power customers realizing savings totaling about $287 million. (Author/QM)

100

Improved Inspection and Regulation Could Reduce the Possibility of Oilspills on the Outer Continental Shelf. B-146333. June 29, 1973. 36 pp. + appendices (8 pp.).
Report to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Geological Survey; Coast Guard; Environmental Protection Agency.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Federal Water Pollution Control Act (33 U.S.C. 1161). Outer Continental Shelf Lands Act (43 U.S.C. 1332). 30 C.F.R. 250.

The Department of the Interior is authorized to lease lands and to regulate oil and gas operations on the Outer Continental Shelf (OCS) to conserve natural resources. The Geological Survey is responsible for inspecting and regulating oil and gas operations on OCS. ***Findings/Conclusions:*** From March 1971 through February 1972, spills totaling about 9,600 barrels were reported by offshore oil operators in the Gulf of Mexico area, and there were more than 60

natural oil seeps in the Pacific area. Geological Survey inspectors in the Gulf Coast region did not always follow prescribed regional enforcement actions, and written warnings in the Pacific region were sometimes ineffective in obtaining prompt correction of deficient equipment. Except for producing wells, the Survey had not issued written policies on the frequency of inspections, especially for drilling of new wells, remedial work on producing wells, and abandonment of nonproductive wells. The Survey did not inspect structures in the Gulf Coast area as frequently as required by standards set by the region or by official Survey policy. The Survey had no formal inspector training program. ***Recommendations:*** The Secretary of the Interior should require the Geological Survey to: emphasize the need for inspection personnel in the Gulf Coast region to apply prescribed enforcement actions for violations of OCS orders; reexamine the Pacific region's policy of not halting operations for violations of OCS orders; and establish a realistic policy on how frequently each type of OCS operation must be inspected.

101

Proposed Power Rate Increase of the Bureau of Reclamation's Central Valley Project. January 22, 1974. 8 pp. + attachments (5 pp.).
Testimony before the House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Baltas E. Birkle, Deputy Director, Resources and Economic Development Div.

Organization Concerned: Bureau of Reclamation; Pacific Gas and Electric Co.; Federal Power Commission.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: H. Rept. 89-1409.

Preparing rate and repayment studies for the Central Valley Project based on predicting changes in the operating methods that are subject to the outcome of future agreements between the Bureau of Reclamation and Pacific Gas and Electric is a questionable method. The no-deficit-year concept used in the rate and repayment study is not consistent with the criterion used by other Federal power marketing agencies or with congressional statements as to the concepts which would be used in preparing a rate and repayment study. On the basis of the Bureau of Reclamation's study using updated hydrology data, the effective rate for both capacity and energy would be about 5.97 mills per kilowatt-hour instead of the proposed 6.15 mills per kilowatt-hour, an overall rate increase of about 46% compared with the proposed increase of 51.6%. Except for providing $78.4 million for those items referred to as deferred costs, power rates should not be increased to provide a surplus. Replacement costs should be capitalized rather than expensed in the year in which they occur. (Author/QM)

102

Review of Complaints Concerning the Mandatory Petroleum Allocation Program and the Regulation of Petroleum Pricing. B-178205. May 3, 1974. 6 pp. + 6 appendices (13 pp.).
Report to Sen. Robert Dole; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Office.
Congressional Relevance: *Sen.* Robert Dole.
Authority: Economic Stabilization Act of 1970 (P.L. 91-379; 84 Stat. 799). Emergency Petroleum Allocation Act of 1973 (P.L. 93-159; 87 Stat. 627). Defense Production Act of 1950 (50 U.S.C. App. 2061). S. 3151 (93rd Cong.).

Several persons complained to Senator Dole regarding the petroleum allocation program. ***Findings/Conclusions:*** Most of the complaints investigated were written within a month of the beginning of the Federal petroleum allocation program in October 1973. Most of the petroleum allocation regulations in force at the time of the complaints have been revised and many changes have occurred in the program's organization, staffing, policies, and procedures. Data systems designed to provide the Federal Energy Office (FEO) with data on where and when different petroleum products are needed are now operating or are expected to be operating in the near future. Under the present program, available supplies are allocated in accordance with priorities established by FEO. The lack of authority to require oil companies to respond to allocation directives within a specified time caused some problems for the Kansas City FEO Regional Office in carrying out its responsibilities. The complainants interviewed could not provide documentation to substantiate charges that the mandatory propane allocation program was being blatantly abused or ignored. (SC)

103

[*Legality of Printing Gasoline Rationing Coupons by Federal Energy Administration*]. B-178205(2). June 13, 1974. 3 pp.
Letter to Rep. Harold V. Froehlich; by Robert F. Keller, Deputy Comptroller General.

Congressional Relevance: *Rep.* Harold V. Froehlich.
Authority: Defense Production Act of 1950, as amended (50 U.S.C. App. 2071(b)). Supplemental Appropriations Act (of) 1974 (P.L. 93-245). Emergency Energy Act; S. 2589 (93rd Cong.).

104

[*Legality of Administration Actions in Printing and Storing Gas Coupons*]. B-178205(1). June 13, 1974. 3 pp.
Letter to Rep. Paul Findley; by Robert F. Keller, Deputy Comptroller General.

Congressional Relevance: *Rep.* Paul Findley.
Authority: Supplemental Appropriations Act [of] 1974 (P.L. 93-245).

105

Information on Certain Oil and Gas Industry Oversight Responsibilities. B-146333. June 17, 1974. 10 pp. + appendices (2 pp.).
Report to Rep. John E. Moss; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Bureau of Mines; Bureau of Land Management; Geological Survey.
Congressional Relevance: *Rep.* John E. Moss.
Authority: Outer Continental Shelf Lands Act (P.L. 83-212; 43 U.S.C. 1332). Administrative Procedure Act (5 U.S.C. 552). 30 C.F.R. 250.97.

The Department of the Interior has data oversight responsibilities regarding the oil and gas industries involved in offshore drilling activities, release of offshore geologic and seismic data to the public, capped wells on Federal lands, and prior employment by the oil industry of certain Federal officials. ***Findings/Conclusions:*** The Geological Survey (Survey) generally obtains its oil and gas reserve statistics from the Bureau of Mines (BOM) which obtains its information from the American Petroleum Institute and the American Gas Association. These organizations' statistics are used because they are prepared on a basis consistent with prior years and it would be a duplication of the industries' effort for the Department to also prepare statistics. BOM does not verify the organizations' statistics because their policies prohibit verification. Written agreements between Survey and Bureau of Land Management (BLM) provide for exchange of the data needed by both agencies and the procedures to be followed in tract selection, presale evaluation of the tracts, and postsale evaluation of the bids received on the tracts. According to Survey, official public disclosure of offshore geological and geophysical data is prohibited by law and by the terms of the contract for purchasing the data. Shut-in wells on Federal and Indian lands could supply about 12,000 barrels of oil and 185,000,000 cubic feet of gas a day. Of 36 top-level Department employees reviewed, 15 had recorded previous oil and gas industry employment. (Author/QM)

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[*The Cost of Living Council's Actions to Assure That Cost Increases for Petroleum Products Were Made in Accordance with Petroleum Pricing Regulations*]. B-178205. June 24, 1974. 2 pp.
Report to Rep. William J. Randall, Chairman, House Committee on Government Operations: Commerce, Consumer and Monetary Affairs Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Cost of Living Council; Federal Energy Office.
Congressional Relevance: *House* Committee on Government Operations: Commerce, Consumer and Monetary Affairs Subcommittee.

Prior to December 26, 1973, the Cost of Living Council (COLC) was responsible for administration of petroleum pricing regulations. *Findings/Conclusions:* COLC regulations did not require refiners to provide cost information justifying price increases; however, from October to December 1973, COLC sent out requests to refiners for just such information. A maximum of four people, who had other responsibilities as well, verified the refiners' cost information. They did not develop an audit program for detailed verification of data. COLC did not issue any remedial orders to refiners or undertake any other enforcement action. Frequent changes to the regulations made enforcement action difficult. COLC's surveillance was not sufficient to insure that refiners were complying with regulatory pricing requirements. (Author/QM)

107

[*Recovery of Expenses from Cleanup and Investigation of Oil Spills*]. B-146333. June 28, 1974. 12 pp.
Letter to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Robert F. Keller, Deputy Comptroller General.

Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Outer Continental Shelf Lands Act (43 U.S.C. 1332 et seq.). Federal Water Pollution Control Act, as amended (P.L. 92-500; 33 U.S.C. 1321 (Supp. II); 33 U.S.C. 1161).

108

Problems in the Federal Energy Office's Implementation of Emergency Petroleum Allocation Programs at Regional and State Levels. B-178205. July 23, 1974. 13 pp. + 3 appendices (3 pp.).
Report to Sen. Abraham A. Ribicoff, Chairman; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Emergency Petroleum Allocation Act of 1973 (87 Stat. 627). Executive Order 11748.

Problems identified in the regional offices of the Federal Energy Administration (FEA) included: failure to promptly or correctly process applications for petroleum allocations; an ineffective management information system designed to keep track of allocation cases; and a limited enforcement and compliance effort which may have been misdirected. States appeared to be using the State set-aside for hardship allocations of fuel. *Findings/Conclusions:* Many priority users, such as agricultural producers, were found to be requesting and receiving State set-aside fuels, even though such priority users should have been receiving 100% of their current requirements from regular supplies. Delays in processing applications at FEA regional offices were one apparent cause of priority users requesting hardship allocations. A lack of documentation concerning the factors considered in arriving at decisions on applications for allocations made it difficult to evaluate the propriety of decisions and may have contributed to inconsistent decisions at each region since no basis for developing precedents was available. A number of deviations from regulations were noted. There were inconsistencies in the manner in which the region entered information into the nationwide computerized case tracking and reporting system, and the system was not used to identify duplicate adjustments or to provide feedback to State energy offices on the status of requests for permanent adjustments made by applicants requesting hardship relief. (SC)

109

[*Suppliers' Compliance with Allocation and Price Regulations*]. July 30, 1974. 3 pp. + enclosure (2 pp.).
Report to Hugh Saussy, Jr., Federal Energy Administration: Region I Office, Boston, MA; by Joseph Eder, Regional Manager, Field Operations Div.: Regional Office (Boston).

Organization Concerned: Sun Oil Co.
Authority: 10 C.F.R., ch. II. Petroleum Allocation and Price Regulations, § 211.102. Petroleum Allocation and Price Regulations, § 211.-13.

As part of a review of the Federal Energy Administration's (FEA) motor gasoline allocation program, an investigation was conducted to determine whether gas deliveries and adjustments by suppliers were in accord with the established Petroleum Allocation and Price Regulations. *Findings/Conclusions:* Three of the four major suppliers reviewed were generally complying with the regulations relating to both deliveries and adjustments. Sunoco, however, was delivering more gasoline to stations than regulations permitted. A review of deliveries to 22 randomly selected stations showed that 18 had received over one-half million gallons or more than one-third more than allowed during the period January through April 1974. Sunoco's deliveries were made at 1974 projected levels and not based on historical sales. *Recommendations:* FEA should periodically review suppliers' delivery records to assure that regulations are being followed. Delivery records for retail outlets which have not requested an adjustment should be periodically examined to assure that they are receiving the proper quantities of gasoline. (DJM)

110

[*Alleged Waste of Money in Printing Costs on Gas Rationing Coupons*]. B-178205. August 5, 1974. 3 pp.
Letter to Rep. Elizabeth Holtzman; by Robert F. Keller, Deputy Comptroller General.

Organization Concerned: Bureau of Engraving and Printing; Federal Energy Administration.
Congressional Relevance: *Rep.* Elizabeth Holtzman.

111

[*Improving the Operations of the Federal Energy Administration Region X Office*]. August 15, 1974. 3 pp.
Report to Jack Robertson, Administrator, Federal Energy Administration: Region X Office, Seattle, WA; by Philip A. Bernstein, Manager, Field Operations Div.: Regional Office (Seattle).

The Federal Energy Administration (FEA) Region X Administrator agreed to take certain actions to improve the operations of the FEA Region X Office. *Findings/Conclusions:* Most fuel suppliers had not been forwarding allocation requests to FEA within 20 calendar days after receipt as required. In response to the problem, FEA will monitor the time it takes for the allocation requests to be forwarded to the region by the suppliers and notify noncomplying companies of the required FEA time frame. There was little documentation in some of the case files to support FEA case determinations; case documentation procedures are being developed. The region had not been using its computer system for recording and retrieving information on allocation cases. The region is now redesigning the entire case tracking and control system around the computer so duplication between the two systems will be eliminated and will start using the computer system to summarize data on the disposition of cases. A request return rate of 18% to the States, indicating processing problems, was actually caused by misrouting of the requests. (Author/QM)

112

Domestic Crude Oil Pricing Policy and Related Production. B-178205. August 19, 1974. 2 pp. + appendix (17 pp.).
Report to Rep. Donald M. Fraser; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Cost of Living Council; Federal Energy Administration.
Congressional Relevance: *Rep.* Donald M. Fraser.

Currently, responsibility for the administration of petroleum pricing policy rests with Federal Energy Administration. Before the creation of FEA, the Federal Energy Office was responsible for these policies, this responsibility having been transferred from the Cost of Living Council on December 26, 1973. ***Findings/Conclusions:*** New oil production costs are not separately maintained by the major oil companies so they could not supply this information. Rapid changes in petroleum pricing policies have made it difficult to single out the effects of the policies on oil production. There were no indications that oil companies were witholding production of oil. The December 1973 dollar increase in the price of old oil was not tied to increased costs of production and no detailed studies or analyses were made to justify the increase. Primary reasons for the increase were to reduce the gap between domestic and higher world oil prices and stimulate increased production through secondary and tertiary recovery methods. (Author/QM)

113

Need for Improving the Regulation of the Natural Gas Industry and Management of Internal Operations. B-180228. September 13, 1974.- 63 pp. + 4 appendices (52 pp.).
Report to Rep. John E. Moss; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission.
Congressional Relevance: *Rep.* John E. Moss.
Authority: Federal Water Power Act (16 U.S.C. 791). Public Utility Act of 1935 (16 U.S.C. 971). Natural Gas Act (15 U.S.C. 717). F.P.C. Order 402-402-A. F.P.C. Order 418. F.P.C. Order 431-431-A. F.P.C. Order 491. F.P.C. Opinion 699.

Extensions which the Federal Power Commission (FPC) granted to producers making 60-day emergency gas sales were improper because they were not authorized by FPC regulations and because they were contrary to FPC's stated intention to limit producer emergency sales to a single 60-day period. ***Findings/Conclusions:*** Extensions granted by FPC during the Federal court's stay of the FPC's order implementing 180-day emergency sales negated the effect of the court stay and raised serious questions as to the propriety of the FPC's actions. Because orders implementing emergency gas sales either were not enforced or required only submission of estimates on the volume and price of natural gas brought to the interstate market when the sale began, the FPC relied on incomplete and inaccurate data in its decisionmaking processes. Because the FPC failed to take final action on applications made under FPC's optional certificate procedure within 6 months, customers paid higher prices for natural gas than may be just and reasonable. ***Recommendations:*** The Chairman of the FPC should: improve monitoring of interstate gas sales by imposing reporting requirements on regulated entities, establishing an adequate data and recordkeeping system, and requiring timely and complete reporting of gas sales data; improve the processing of applications under the optional certificate procedure to insure that gas consumers are not charged rates which are higher than justified; and improve FPC's procedures to insure that upper level officials do not own financial securities which could result in a conflict of interest. (Author/SC)

114

[*Need for the Federal Power Commission to Improve the Regulation of the Natural Gas Industry and Management of Its Internal Operations*]. September 25, 1974. 13 pp.
Testimony before the House Committee on Interstate and Foreign Commerce: Oversight and Investigations Subcommittee; by Victor L. Lowe, Director, General Government Div.

Organization Concerned: Federal Power Commission.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Oversight and Investigations Subcommittee.
Authority: Natural Gas Act. F.P.C. Order 402, 402A. F.P.C. Order 418. F.P.C. Order 491, 491A.

A study of the Federal Power Commission (FPC) showed that the Commission needs to improve both its regulation of the natural gas industry and its management of internal operations. ***Findings/Conclusions:*** In 1970, FPC issued a number of emergency orders designed to deal with perceived gas shortages. Under some of these orders, independent natural gas producers were authorized to make emergency sales to interstate pipelines for 60 days without prior FPC approval. Extensions were later granted to producers making emergency sales under these orders, although such extensions were not authorized by FPC regulations and ran counter to FPC's stated intentions and commitments. The question as to whether the FPC has the authority to waive these regulations imposed by the Natural Gas Act remains. There is a need for FPC to obtain more complete and accurate data on the volume and price of gas brought into the interstate market by its emergency sales programs. FPC's optional certificate procedures need to be improved to insure that gas customers are charged prices that are just and reasonable. There has been widespread noncompliance by FPC officials with the agency's standards of conduct regulations resulting from a breakdown in the reporting system intended to disclose financial holdings of officials that were actual or potential conflicts of interest. (SC)

115

[*Review of the Operations Division of the Federal Energy Administration*]. October 24, 1974. 4 pp. + attachments (3 pp.).
Report to Robert Mitchell, Regional Administrator, Federal Energy Administration: Region I Office, Boston, MA; by Joseph Eder, Manager, Field Operations Div.: Regional Office (Boston).

Organization Concerned: Environmental Protection Agency.
Authority: Mandatory Petroleum Allocation Regulations, § 211. 13(c).

The Operations Division of the Federal Energy Administration (FEA) consists of the Case Resolution Branch and the Energy Assistance Center. These sections process requests for additional petroleum products. ***Findings/Conclusions:*** There was a 65% decline in the number of petroleum product request applications processed by the Case Resolution Branch after June 1974. Reasons cited by the Operations Division for the decline, such as the complexity of cases, are questionable. There was also a substantial decrease in applications reviewed by the Energy Assistance Center staff while the staff itself increased in average size. The man-days expended at the Center are not reported by its Weekly Regional Status Report; productivity cannot be assessed. Even though $5,000 in overtime was paid to the Case Resolution staff in June, July, and August 1974, the case backlog increased and the weekly average cases closed did not increase. About one-third of the overtime was paid to the Chief of the Case Resolution Branch even though his duties do not involve directly resolving cases. Also, overtime was not being approved in advance according to policy. This same Chief received a raise in pay status to which he was not entitled and for a time worked on a detailee status with another agency that was not documented. ***Recommendations:*** The level of manpower required by the Case Resolution Branch should be reevaluated in view of the reduced caseload. The Weekly Regional Status Report should be modified to show the output of the Energy Assistance Center in relation to man-days expended. Also, management should be aware of the need and reason

for paying overtime before the fact, and the failure to provide documentation for personnel actions indicates a need to improve FEA's administrative practices. (Author/QM)

116

[*Federal Energy Administration's Actions on Allocation and Pricing of Fuel*]. October 29, 1974. 2 pp. + enclosure (4 pp.).
Report to William C. Arntz, Regional Administrator, Federal Energy Administration: Region IX Office, San Francisco, CA; by A. M. Clavelli, Regional Manager, Field Operations Div.: Regional Office (San Francisco).

Organization Concerned: Consumer Oil Operations, Sacramento, CA; E. S. Addison, Inc.; Fredericksen Tank Lines; Petroleum Tank Lines.

Two companies, E. S. Addison, Inc. and Consumer Oil Operations (COO), may have violated the provisions of the Fuel Allocation Program. *Findings/Conclusions:* From January 15 to May 30, 1974, 350,000 gallons of gasoline were diverted from service stations which were apparently leased by Consumer Oil Operations solely to obtain allocated fuel. The supplier, Addison, leases out and supplies a number of its service stations, three of which were leased to COO in the Sacramento area. COO used these stations only as a front from which to resell the gas to other service stations. In addition, 176,684 gallons of fuel were moved or transferred by Fredericksen Tank Lines and Petroleum Tank Lines for COO. These transfers seemed to be manipulations of fuel among COO customers, some of which were also Addison customers. GAO was unable to locate COO or its operator, K. Gary, who has a criminal record and is currently wanted by law enforcement agencies. (DJM)

117

[*Curtailment of Electric Power Service by the Tennessee Valley Authority*]. B-114850. November 4, 1974. 4 pp. + enclosure (17 pp.).
Report to Sen. Bill Brock; by Elmer B. Staats, Comptroller General.

Organization Concerned: Tennessee Valley Authority.
Congressional Relevance: *Sen.* Bill Brock.
Authority: Federal Power Act, § 202(c) (16 U.S.C. 824a(c)). Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 801).

The Tennessee Valley Authority (TVA) has taken actions to obtain additional coal supplies and to conserve its existing supplies. TVA has estimated that, providing there is not a lengthy coal miners' strike, it can get through the winter of 1974-1975 without a cutback in power service if it obtains reasonable success from its request for consumers to voluntarily reduce their use of electricity by 20%. *Findings/Conclusions:* Although coal production was up about 7% in the first half of 1974 compared with a similar period of the previous year, some of the increased production appeared to be available at prices and with contract terms which TVA generally has been unwilling to accept. TVA adopted an approach of paying some of the higher prices, but not the highest prices, being requested for coal; refusing to change its coal quality guarantee and mining reclamation requirements; and taking alternative actions designed to reduce its coal consumption. TVA has a task force working on a contingency plan which will be implemented if a mandatory cutback in power is necessary. This contingency plan could include the elimination of all nonessential uses of electricity, certain mandatory reductions in use by all customers, and scheduled short-time interruptions of power on a rotational basis. The chances of success for TVA's program to obtain a voluntary reduction in the use of electricity probably will be improved if State and local government leaders in the areas served by TVA support the program and set an example by implementing the program in all State and local government facilities. (SC)

118

Problems in the Federal Energy Administration's Compliance and Enforcement Effort. B-178205. December 6, 1974. 15 pp. + 3 appendices (7 pp.).
Report to Sen. Abraham A. Ribicoff, Chairman, Senate Committee on Government Operations; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Federal Energy Administration; Internal Revenue Service.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Federal Energy Administration Act of 1974 (88 Stat. 96). Emergency Petroleum Allocation Act of 1973 (88 Stat. 627). 18 U.S.C. 1905.

The future of petroleum product price controls is uncertain. Various Executive Branch officials have commented on the need to relax such controls. Existing legislative authority for petroleum product price controls is scheduled to expire on February 28, 1975, although bills are currently pending in the Congress to extend the authority through August 1975. *Findings/Conclusions:* There are significant problems in compliance with price controls among crude oil producers, refiners of petroleum products, wholesalers, and retailers. There was almost no direct audit of operations of crude oil producers; Federal Energy Administration (FEA) audits at the retail level showed numerous violations and there was evidence of large violations at the wholesale level; audits of refiner operations were not completed; substantive issues relating to the adequacy of regulations remained unsolved; and organizational disputes within FEA hindered its refinery audit work. FEA officials estimated that the magnitude of refineries' potential violations could be between $1 and $2 billion. FEA will have to strengthen its compliance and enforcement program at all levels if there is to be adequate assurance that firms are complying substantially with price regulations. *Recommendations:* FEA should consider the following alternatives for improving the effectiveness of its audits: increase the size of assigned staff; and/or use a "strike force" approach where a team of auditors would visit selected firms and review key facets of the operations. If FEA wished to maintain a continuous presence at each refinery operation, one auditor could be permanently assigned for the purpose of identifying problem areas which may necessitate more detailed attention by a "strike force." FEA should also centralize the control and direction of the auditors assigned to review refineries. (Author/QM)

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The Federal Energy Administration's Compliance and Enforcement Activities. December 11, 1974. 11 pp.
Testimony before the Senate Committee on Government Operations; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Federal Energy Administration Act of 1974, § 12.

There are significant problems in the Federal Energy Administration's (FEA's) compliance and enforcement program at all levels of petroleum industry operations. Review of the program showed: there was almost no direct audit of crude oil producer operations; FEA concentrated its audits at the retail level and found numerous violations, although there was evidence of large violations at the wholesale level where little audit effort was made; audits of refinery operations were not completed; substantive issues relating to the adequacy of regulations remained unresolved; and organizational disputes within FEA hindered audit work at refinery operations. FEA officials advised GAO that a revised staffing plan had been approved which would permit audits of crude oil producers to begin, increase the audit attention at the wholesale and refinery level, and decrease the audit attention at the retail level. GAO's evaluation of FEA's compliance and enforcement program was impeded by FEA's reluctance to allow full access to such information as records relating to active compliance investigations or audits which had not been

completed. A framework to insure that such problems do not occur in the future has been proposed and is expected to be instituted. GAO concluded that if petroleum price controls are to be continued, FEA must strengthen its compliance and enforcement program at all levels if it is to have adequate assurance that firms are complying substantially with pricing regulations. (SC)

120

[*The Federal Energy Administration's Progress in Redirecting Its Compliance and Enforcement Program*]. B-178205. March 31, 1975. 3 pp.
Report to Sen. Abraham A. Ribicoff, Chairman, Senate Committee on Government Operations; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Senate* Committee on Government Operations.

A 1974 report identified major problems in the Federal Energy Administration's (FEA's) compliance and enforcement activities particularly a need for FEA to audit producers of crude oil and to improve audits at the refinery level. ***Findings/Conclusions:*** FEA's planned staffing allocation change for the compliance and enforcement program was 784 additional employees by December 31, 1974. The actual change was 746 additional employees by March 14, 1975. Completion of the planned staffing changes had been delayed, primarily because of problems in redeploying staff among FEA regions. As of March 21, 1975, 40 crude oil producer audits had been completed and 87 additional audits of a planned 197 audits were in process. FEA uncovered 27 possible violations. As a result, the producers made two voluntary rollbacks and signed nine consent agreements and FEA issued two Notices of Probable Violations and drafted 14 additional notices. The two voluntary rollbacks resulted in refunds of $158,698, and the nine consent agreements resulted in refunds of $634,903 and penalties of $46,658. The majority of the violations uncovered resulted from producers claiming more new and released oil production than their wells actually produced. After FEA completes the initial 197 audits, it plans to audit the next 1,000 companies that show the largest percentage in new oil. (Author/QM)

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Problems of Independent Refiners and Gasoline Retailers. OSP-75-11; B-178205. April 4, 1975. 16 pp.
Report to Sen. Abraham A. Ribicoff, Chairman, Senate Committee on Government Operations; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Emergency Petroleum Allocation Act of 1973 (87 Stat. 627). Federal Energy Administration Act of 1974 (15 U.S.C. 761).

A number of independent retail gasoline operators have been forced to close. The Federal Energy Administration (FEA) has made efforts to protect independent refiners and retail gasoline dealers.
Findings/Conclusions: Under FEA's revised crude oil allocation regulations, small refiners, on the average, operated above 1972 levels, but the four large independent refiners operated below 1972 levels. Under the "two tier" pricing system used for crude oil, small refiners and large independent refiners generally paid higher prices for crude oil than the major oil companies. This occurred because small and independent refiners did not have access to that part of domestically produced crude oil under price controls. FEA recognized this problem and adopted new regulations aimed at equalizing crude oil costs. At the retail level, FEA was not prompt in developing and reporting data on the market share of independents. The number of independent retail dealers appears to have decreased, although the proportion of refiner-owned-and-operated stations has increased. (Author/QM)

122

[*The Administration of the Petroleum Set-Aside Program by State Energy Offices*]. B-178205. May 8, 1975. 8 pp.
Report to Frank Zarb, Administrator, Federal Energy Administration; by Monte E. Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Arkansas: Office of Petroleum Allocation; Federal Energy Administration; Florida: Office of Petroleum Allocation; New Mexico: Office of Petroleum Allocation; New York: Office of Petroleum Allocation; Oklahoma: Office of Petroleum Allocation; Virginia: Office of Petroleum Allocation.
Authority: Emergency Petroleum Allocation Act of 1973 (P.L. 93-159). Special Energy Research and Development Appropriation Act of 1975 (P.L. 93-322). Federal Energy Administration Act of 1974 (P.L. 93-275).

At the height of the Arab oil embargo, the State Offices of Petroleum Allocation played an important role in alleviating temporary shortages of petroleum products through allocations from the State set-asides to users who could not obtain fuel from their traditional suppliers and/or who had not been assigned new suppliers by the Federal Energy Administration (FEA). When the embargo ended and supplies of petroleum products became more plentiful, the State set-asides in Arkansas, Florida, New Mexico, New York, Oklahoma, and Virginia were no longer being used strictly for emergency and hardship cases. ***Findings/Conclusions:*** State set-aside fuel was allocated in many instances with no documentation or inadequate documentation that a hardship or emergency requirement existed. Because individuals were allocated State set-aside fuel without adequate justification that a hardship or emergency existed, these individuals may have exceeded the allocations to which they were entitled under the regulations. In this respect, some individuals may have avoided filing with FEA for an adjusted allocation by repeatedly applying for and receiving State set-aside allocations. FEA has had a hands-off approach concerning the set-aside program. The lax manner in which the State set-aside program apparently was administered may have stemmed from the increased supplies of petroleum products available compared with the supply situation when the allocation program was imposed. ***Recommendations:*** FEA should: reevaluate its set-aside regulations to determine whether the set-aside program should be continued in its present form; and consider reducing the amount of fuel allocated to the program, restricting the program to those petroleum products for which hardship or emergency requirements exist, or stopping the program until such time as a shortage may again develop. If the program is continued, FEA should: review pertinent legislation to determine whether FEA has the authority to administer, evaluate, or investigate the use of State set-aside fuel and change the regulations or seek changes in the law to obtain that authority; determine whether State offices have established and are following consistent and concise criteria for evaluating hardships and emergencies; and determine whether State offices are allocating set-aside fuels for reasons other than those of hardship and emergency and take appropriate action to correct any deficiencies in the program. (Author/QM)

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[*The Effects of Oil Price Increases on Small Business Contracts*]. PSAD-75-72; B-178205. May 22, 1975. 3 pp.
Report to Rep. Mike McCormack; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Defense; General Services Administration.
Congressional Relevance: *Rep.* Mike McCormack.
Authority: Defense Procurement Circular 120. GSA Procurement Letter 105.

Oil price increases in fiscal years 1973 and 1974 may have had some effects on small business contracts made by the Department of Defense. ***Findings/Conclusions:*** The inflation experienced during fiscal years 1973 and 1974 had an impact on profit, and the rate of inflation was affected by the increase in the price of oil and oil-related products. However, isolation of oil-related increases from other price

increases that contributed to the inflation rate was difficult to achieve. Contractors involved in six Department of Defense small business, firm fixed-price contracts studied did not incur any economic setbacks due to oil price increases because the unit prices for the contract items increased as the price of fuel products increased. There was no instance where these contractors were unable to provide the services called for in the contracts because of the fuel product prices. From July to December 1974, there were 24,123 active fixed-price, small business defense contracts with a total dollar value of approximately $1.8 billion. Of these contracts, 9.29% contained economic price adjustment clauses. The total dollar value of these contracts was $494 million. (QM)

124

[*Funds Credited to the Account of the Virgin Islands for Refunds from Import License Fees*]. OSP-75-14; B-183222. June 13, 1975. 3 pp.
Report to Rep. Ron deLugo; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Department of the Interior; Federal Energy Administration; Virgin Islands.
Congressional Relevance: *Rep.* Ron deLugo.
Authority: Presidential Proclamation 4227. Presidential Proclamation 3279. Presidential Proclamation 4210.

Before May 1973, the amounts of crude oil and petroleum products which could be imported into the United States were limited by a system of quotas, and tariffs were assessed against each shipment of such goods. Under Presidential Proclamation 4227, license fees collected on imports into the customs territory of the United States of crude oil and petroleum products manufactured in the Virgin Islands are to be held in a separate Department of the Treasury account and then refunded to the Virgin Islands. The Department of Justice stated that the provision of Proclamation 4227 regarding refunds to the Virgin Islands is without legal foundation. A separate appropriation is required to pay the refunds, according to the Department of Justice. Legislation has been drafted requiring that refunds be paid to the Virgin Islands. The Congress has not acted on the proposed legislation. *Findings/Conclusions:* From May 1, 1973, through December 31, 1974, a total of $2,945,569 was to be credited to the Virgin Islands account in the Treasury. The amount of refunds accrued in the account after December 1974 could not be determined because the Oil Imports Office had not yet received pertinent information. The Oil Imports Office could not recall being the source of the varying estimates of the amount credited to the Virgin Islands account. (Author/QM)

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The Federal Energy Administration's Compliance and Enforcement Processes. June 19, 1975. 12 pp.
Testimony before the Senate Committee on the Judiciary: Administrative Practice and Procedure Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Senate* Committee on the Judiciary: Administrative Practice and Procedure Subcommittee.
Authority: Federal Energy Administration Act of 1974, § 12.

A prior review of Federal Energy Administration (FEA) compliance and enforcement efforts recommended initiation of a program of direct audits of crude oil producers and increasing emphasis on audits of major oil refineries. FEA has experienced delays in redirecting efforts from the retail level to other areas because of the problems in redeploying staff among regional offices and in recruiting additional technically qualified investigators for the more complex producer and refiner audits. As of June 13, 1975, investigations of 267 crude oil producers had been begun. Basic regulatory questions will have to be resolved before the producer audit program can be conducted in an efficient and effective manner. FEA currently has about 162 auditors assigned to the audits of refineries. As of May 30, 1975, FEA had made investigations of about 92,000 firms, both wholesale and retail, resulting in refunds to the public totaling $87 million. The total amount amount of violations found under propane wholesaler investigations may amount to about $30 million. FEA's audit of suppliers of fuel oil to utilities, Project Utility, has several implementation problems including: inadequate criteria for selecting suppliers for audit; substanial delays in collateral investigations; and several unresolved regulatory questions. There are also serious problems in the processing of Notices of Probable Violation and remedial orders. (QM)

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[*Federal Energy Administration Efforts to Audit Fuel Oil Supplies of Major Utility Companies (Project Utility)*]. OSP-76-2; B-178205. July 15, 1975. 7 pp. + enclosure (1 pp.).
Report to Frank Zarb, Administrator, Federal Energy Administration; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Authority: Emergency Petroleum Allocation Act of 1973 (87 Stat. 627). Federal Energy Administration Act of 1974 (88 Stat. 96).

Project Utility was an effort by the Federal Energy Administration (FEA) to audit the fuel oil supplies of major utility companies.
Findings/Conclusions: The effective manpower assigned to the project has been far less than the level reported to FEA headquarters. Inconsistent auditing among FEA regions resulted in substantial audit effort in areas unlikely to yield evidence of violations. Investigations were delayed because of complex supplier relationships, inadequate supplier records, and poor coordination among FEA regional offices. Regulatory questions have impeded completion of a number of investigations. Since FEA has no authority over public utilities, there is no assurance that refunds made to them will be returned to consumers. Despite the considerable publicity given Project Utility, the amount of violations detected has not justified the emphasis placed on the project. Project Utility had hindered other compliance activities, such as the producer and refiner audits.
Recommendations: FEA should: phase out Project Utility as a special effort, but complete promising investigations and initiate compliance actions within a specified time; return to balanced compliance operations covering producers, refiners, wholesalers, and retailers; use more consistent criteria to select suppliers and identify suspicious transactions in wholesale investigations, and set priorities in this area; use utilities and other major fuel users to identify suppliers for audit; and promptly inform field auditors of the brokers' proper status under FEA regulations. (Author/DJM)

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[*Requested Utility Rate Increase by the Potomac Electric Power Company*]. LCD-76-303; B-178205. August 11, 1975. 3 pp.
Report to Rep. John E. Moss; by Robert G. Rothwell (for Fred J. Shafer, Director, Logistics and Communications Div.

Organization Concerned: Department of the Treasury; General Services Administration; Potomac Electric Power Co.
Congressional Relevance: *Rep.* John E. Moss.
Authority: Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. 481; 40 U.S.C. 486). 41 C.F.R. 101-36.202.

The Department of the Treasury suggested that the General Services Administration (GSA) refrain from intervening in forthcoming utility rate cases involving price increases for the Potomac Electric Power Co. (PEPCO), because PEPCO urgently needed the increases due to increased costs of fuel, construction, and financing. *Findings/Conclusions:* The suggestion was fully within the authority of the Department of the Treasury and did not constitute interference with GSA's role in protecting the Government against higher utility rates. It is not possible to determine what the specific effect of GSA's participation in rate hearings will be. Other intervenors participating in the rate hearings may succeed in making an effective case against a proposed rate increase, even without GSA's intervention. GSA did participate in the PEPCO rate hearings before the Public Service Commission of the District of Columbia, and cross-examined

PEPCO witnesses on testimony they filed with the Commission. (Author/QM)

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[*Violation of Ceiling Prices in a Defense Fuel Supply Center Sale*]. August 12, 1975. 3 pp.
Report to Gorman C. Smith, Assistant Administrator for Regulatory Programs, Federal Energy Administration; by Monte E. Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Department of Defense: Defense Fuel Supply Center, Alexandria, VA; Texaco, Inc.
Authority: Defense Production Act of 1950. 38 F.R. 1052.

A possible violation of ceiling prices was found in a sale by Texaco, Inc., under a fuel contract with the Defense Fuel Supply Center. Texaco, Inc., exercised a contract option by delivering 235, 137 barrels of Navy distillate fuel to Port Arthur, Texas, at the contract price of $.37 per gallon. The fuel was for shipment by the Government to U.S. military installations overseas. According to the Federal Energy Administration, this price was significantly higher than Texaco, Inc., could have charged for the fuel for use domestically at that time under guidelines of the Cost of Living Council. (Council) ***Findings/Conclusions:*** Although the fuel was purchased for use overseas, the shipment to Port Arthur was subject to Council price regulations. There was no indication that the price rulings were intended to be limited in application to the industry involved in the ruling, but rather the principles discussed in the rulings appear to have been intended to apply to any situation where products destined for consumption at a foreign location would not produce revenue from a foreign source. (Author/QM)

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Analysis of the Energy, Economic, and Budgetary Impacts of H.R. 6860. OSP(OPA)-76-3. September 1975. 26 pp. + appendix (6 pp.).
Staff study.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Senate* Committee on Finance.
Authority: H.R. 6860 (94th Cong.).

H.R. 6860 would impose quotas on imported petroleum products and take a number of actions designed to decrease domestic energy consumption. The bill would: (1) establish an import quota schedule, an import licensing system, and rates of duty on imported petroleum; (2) set automobile standards; (3) provide for tax incentives for energy-related improvements of buildings and for purchase of electric motor vehicles; (4) establish an energy conservation fund; and (5) provide for business conversion for greater energy saving. ***Findings/Conclusions:*** To provide a basis for analyzing impacts of the bill, the domestic demand and supply of crude oil was projected at current world prices, assuming no restrictions on imports. GAO concluded that reductions in oil imports mandated by the bill exceed all projections for oil consumption that would result from the bill's conservation provisions. The system for auctioning oil import licenses, taken together with expected shortfalls in oil supply would trigger price increases of $4 to $6 a barrel for imported oil. Treasury receipts under the auction system were estimated to increase in the range of $12 to $18 billion each year through 1980. Increased prices of imported oil would trigger increases in the price of domestic uncontrolled oil and result in windfall profits for oil producers. Price increases would be inflationary and lead to increased unemployment. Only automobile efficiency standards and tax credit for insulation of residences were thought likely to achieve measurable reductions in energy consumption. (HTW)

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Need for the Federal Power Commission to Evaluate the Effectiveness of the Natural Gas Curtailment Policy. RED-76-18; B-181503. September 19, 1975. 17 pp. + 2 appendices (20 pp.).
Report to Rep. Pierre S. du Pont; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission.
Congressional Relevance: *Rep.* Pierre S. du Pont.
Authority: Federal Power Act (16 U.S.C. 792). Natural Gas Act (15 U.S.C. 717). Federal Energy Administration Act of 1974 (88 Stat. 96). F.P.C. Order 431.

The Federal Power Commission (FPC) lacks authority to obtain the necessary information to evaluate the effectiveness of its natural gas curtailment policy because its jurisdiction does not extend to intrastate pipeline and distributing companies. The Commission is attempting a coordinated effort with the Federal Energy Administration (FEA) to obtain the needed information, but the effort has not been underway long enough to determine its value. ***Findings/Conclusions:*** To evaluate the effectiveness of its curtailment policy, the FPC needs information on the end use of gas supplies and on the economic impact of the shortages on the areas affected. Without such information, the FPC cannot determine whether pipeline companies are distributing available natural gas as specified in approved curtailment plans or whether modifications are needed to achieve curtailment policy objectives. ***Recommendations:*** The FPC should report to the Congress on the results of the attempted coordinated effort with FEA. If the desired results are not obtained from this effort or if the Commission finds the mechanism too cumbersome, the Commission should seek legislative revisions to the Natural Gas Act to extend the Commission's authority to obtain information on natural gas sales by intrastate pipeline and distributing companies, and on the end use of the gas by ultimate consumers who purchase the gas from interstate and intrastate pipeline and distributing companies. (SC)

131

Comments on Proposed Legislation to Change Basis for Government Charge for Uranium Enrichment Services. RED-76-30; B-159687. September 22, 1975. 12 pp.
Report to Sen. John O. Pastore, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Private Ownership of Special Nuclear Materials Act of 1964 (P.L. 88-489). Atomic Energy Act, as amended (P.L. 91-560). OMB Circular A-94, Revised.

The Energy Research and Development Administration (ERDA) proposed legislation which would change the basis of the Government's charge for uranium enrichment services from the current cost recovery method. ***Findings/Conclusions:*** The proposed changes would allow the Government to obtain fair value for its enrichment services and would eliminate or reduce the difference between the Government's charge and that of potential private enrichers. The assumptions made by ERDA in developing its proposed prices are within a reasonable range; however, they are judgmental and it is difficult to conclude that they are the most reasonable assumptions. If the proposed legislation were enacted, ERDA would initially implement the law by increasing its enrichment services charge to $76 for each separate work unit to include amounts representing costs which would normally be incurred and considered in a commercial firm's charge. ***Recommendations:*** The Joint Committee on Atomic Energy should consider revising the proposed legislation so that any changes in the basic approach used in arriving at the fair value charge for the Government's uranium enrichment services and any additions to this charge necessary for not discouraging the development of private supply sources would be included in the uranium enrichment criteria and should be submitted to the Joint Committee with them. (Author/SC)

132

Problems in Licensing Hydroelectric Projects. RED-76-13; B-115398. September 23, 1975. 20 pp. + 3 appendices (12 pp.).
Report to the Congress: by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission.
Congressional Relevance: Congress.
Authority: Federal Power Act of 1935 (16 U.S.C. 791 et seq.). Federal Water Power Act of 1920.

Large delays exist in the licensing of hydroelectric projects by the Federal Power Commission. *Findings/Conclusions:* The backlog of applications has been growing steadily for years, and the number and slow rate they are acted upon are cause for concern. As of December 31, 1974, there were 502 backlog applications, which have been pending an average of 60 months. Most of the time needed to license a project is outside the control of the Federal Power Commission (FPC), but, to the extent practicable, delays should be eliminated because licensing projects offer considerable public benefits as increased electric power and recreational facilities. The Commission contributes to delay by extending reporting deadlines after giving applicants 30 to 90 days to comply with requests for needed information. The FPC never prosecuted those who failed to provide needed information. The required process of obtaining comments from other Federal agencies is often lengthy and time consuming. *Recommendations:* The FPC should: establish followup procedures and standards ensuring that information needed to process applications is pursued aggressively; prosecute those delaying the licensing process; enter into interagency agreements to formalize the role of other Federal agencies in the licensing process; require applicants to pay reasonable annual charges for administering the licensing program, or retroactively charge for previously constructed projects when applications are filed; systematically evaluate constructed projects to ensure that all projects under FPC jurisdiction are licensed; not automatically extend reporting deadlines; and use its enforcement powers to meet its statutory responsibilities. (Author/DJM)

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Federal Energy Administration's Efforts to Audit Domestic Crude Oil Producers. OSP-76-4; B-178205. October 2, 1975. 12 pp. + enclosure (1 pp.).
Report to Sen. Abraham A. Ribicoff, Chairman, Senate Committee on Government Operations; by Monte Canfield, Jr. (for Phillip S. Hughes, Assistant Comptroller General).

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Emergency Petroleum Allocation Act of 1973 (87 Stat. 627). Federal Energy Administration Act of 1974 (88 Stat. 96).

The Federal Energy Administration's (FEA's) audits of independent crude oil producers have disclosed substantial violations of crude oil pricing regulations: however, FEA has done limited audit work at the major oil companies that produce the majority of the domestic crude oil and thus has been unable to determine their compliance with the regulations. *Findings/Conclusions:* As of August 22, 1975, FEA audits of independent producers' operations resulted in: consent agreements with 35 producers under which the producers agreed to refund a total of $3.2 million to customers and to pay penalties of about $115,000; notices of probable violation issued or being prepared for 52 other producers involving about $11 million in potential violations; and investigations of 163 producers completed without any violation being detected. Since FEA regions did not follow a uniform policy for compromising civil penalties, producers that were determined to be in violation of price regulations were treated inequitably. *Recommendations:* FEA should: intensify the coverage afforded production operations of major oil companies; expedite efforts to identify and disseminate to the regional offices the names of independent producers that are, according to reports submitted to FEA, most likely to be in violation of pricing regulations; and insure implementation of a uniform policy regarding penalties which should be sought and collected from producers that are determined to be in violation of FEA pricing regulations. (Author/QM)

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Evaluation of the Administration's Proposal for Government Assistance to Private Uranium Enrichment Groups. RED-76-36; B-159687. October 31, 1975. 47 pp. + 3 appendices (17 pp.).
Report to Sen. John O. Pastore, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Uranium Enrichment Associates.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Nuclear Fuel Assurance Act of 1975; S. 2035 (94th Cong.). Atomic Energy Act of 1954, as amended (P.L. 83-703). Private Ownership of Special Nuclear Materials Act of 1964, as amended (P.L. 88-489).

Legislation has been proposed to encourage "privatization" of the uranium enrichment process. The legislation would: authorize the Energy Research and Development Administration (ERDA) to enter into cooperative arrangements with private firms; authorize ERDA to provide assistance and assurance under such arrangements; limit the U.S. Government's total potential liability to $8 billion; authorize ERDA to start construction planning and design activities for expanding one of the Government's existing enrichment facilities as a contingency measure; and provide for congressional review of the basis for the cooperative arrangements by the Joint Committee on Atomic Energy. *Findings/Conclusions:* The next increment of uranium enrichment capacity should be achieved by adding on to the existing Government gaseous diffusion plants because: Uranium Enrichment Associates' proposal is not acceptable chiefly because it shifts most of the construction and plant-proving risks to the Government; a decision is needed now; there is a greater potential for slippage in the private group's schedule for bringing additional capacity on-line; additions to existing plants can be done at an estimated construction cost of $2.1 billion as compared to the estimated cost of the private group constructing a plant of $2.7 billion; an add-on can be phased in increments thereby keeping additional gaseous diffusion capacity at the minimum consistent with the development of centrifuge technology, and maximizing flexibility to deal with problems of changing demands or poor projections; and management of the Government facilities could be accomplished more effectively by a corporation having a self-financing authority.
Recommendations: The Joint Committee on Atomic Energy should consider: authorizing ERDA to construct the next increment of the enrichment capacity using the proven enrichment process; establishing a Government corporation with self-financing authority to manage enrichment facilities; and developing legislation with provisions similar to those in the legislation authorizing ERDA to enter into cooperative agreements with private enrichers using advanced technologies. (Author/QM)

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Implications of Deregulating the Price of Natural Gas. OSP-76-11; B-181503. January 14, 1976. 59 pp. + appendix (2 pp.).
Report to Rep. Jack Brooks, Chairman, House Committee on Government Operations; by Elmer B. Staats.
Report on first part of study issued as GAO RED-76-39, October 31, 1975.

Congressional Relevance: *House* Committee on Government Operations.

Deregulation of natural gas sold in interstate commerce is under consideration as one way to reverse a national trend toward declining production of natural gas. *Findings/Conclusions:* Even with deregulation, natural gas production is likely to continue its decline. Higher prices would bring some additional supplies on natural gas over what would otherwise occur. However, supplies are constrained by factors in addition to price, such as the ability to discover new reserves at a sustained, high rate. These factors indicate that the United States will probably never again attain recent production levels. Deregulation, however, could slow the rate of decline. The

price of natural gas will continue to rise, either under regulation or deregulation. With deregulation, however, price rises would be more rapid, except in the unlikely event that regulated prices were deliberately raised to intrastate levels and held there. Therefore, while additional gas supplies are likely from higher deregulated prices, this advantage must be weighed against higher prices to consumers. Deregulation will increase costs to residential customers nationwide by 40% in 1980 and 10% in 1985. Because natural gas is a clean-burning fuel, deregulation would seem to have an overall beneficial effect on the environment. On the whole, deregulation is not likely to have discernible effects on the gross national product, but could have various regional and sectoral effects. (DJM)

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The Implications of Deregulating the Price of Natural Gas. January 15, 1976. 11 pp.
Testimony before the House Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee.

A study of the energy supply, economic, social, and environmental implications of deregulating the price of natural gas from 1975 to 1985 showed that, even with deregulation, natural gas supplies are likely to decline during this period. With continued low prices, natural gas supplies should decline about 20% by 1985. With deregulation, this decline would be slower, about 13% by 1985. However, in either case the United States is unlikely to ever again achieve the production levels of the recent past. The Nation's natural gas bill will increase even with regulation. With deregulation the increase would be more rapid, but by 1985 the differences would be quite small. Continued regulation at low prices will put a disproportionate share of the natural gas shortfall on the interstate market. Reaching a decision regarding deregulation requires weighing a set of interrelated trade-offs, which should include: the additional supplies of gas likely to result from deregulation; the additional costs to consumers; the economic and social costs of continuing a regulatory framework, including the fostering of separate interstate and intrastate markets; and alternatives such as regulation at higher prices and bringing intrastate supplies under Federal regulations. (SC)

137

Amount of Natural Gas that Could Be Released from Federal Price Regulations upon Expiration of Contracts from 1975 through 1985. January 26, 1976. 6 pp.
Testimony before the House Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; by Henry Eschwege, Director, Resources and Economic Development Div.

Organization Concerned: Federal Power Commission.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee.
Authority: 18 C.F.R. 154.93.

If the law were to remove the price regulation over natural gas, the volume of gas released from regulation upon the expiration of sales contracts between producers and interstate pipeline companies could amount to about 29 trillion cubic feet (TCF) during the period 1975 through 1985, assuming that the production from existing wells continues at a constant rate. This estimate is based on contract data which received limited verification by the Federal Power Commission (FPC) and which was somewhat incomplete. Three methods were used to determine at what rate productivity from existing reservoirs will decline in order to develop estimates on the cumulative volume of gas that would be released from regulation: assuming the Davis Decline Curve, the total volume released would be 9.1 TCF; assuming the National Availability Curve, the volume would be 12.7 TCF; and assuming the Total Energy Resources Analysis (TERA) Curve, the volume would be 7.7 TCF. The amount of gas currently under contract which would be deregulated could also be affected by indefinite pricing clauses in existing contracts which provide for future changes in the price of gas sold. Provisions of the deregulating statute and/or FPC rulemaking actions would affect the impact of these clauses on the volume released from price controls. Many of these indefinite pricing clauses are impermissible under FPC regulations. GAO recommended that FPC should maintain current information on producers so that needed data are readily available for use in future Congressional and FPC decisionmaking. (SC)

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[*Gulf Oil Corporation's "Double Dipping" on Crude Oil Product Costs*]. OSP-76-13; B-178205. February 9, 1976. 4 pp.
Report to Rep. Les Aspin; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Gulf Oil Corp.; Federal Energy Administration.
Congressional Relevance: *Rep.* Les Aspin.
Authority: Emergency Petroleum Allocation Act of 1973 (87 Stat. 627). Federal Energy Administration Act of 1974 (88 Stat. 96). Energy Policy and Conservation Act.

The term "double dip" means the recovery of certain increased product costs twice by the oil companies, as interpreted from Federal Energy Administration (FEA) regulations. ***Findings/Conclusions:*** Gulf Oil Corporation overbanked $119.7 million in increased crude oil costs from February to September 1974. Most of these costs in question were not actually double dipped because they were not passed on to the consumer in increased prices, but were "banked" for a potential second recovery of increased consumer prices later. The regulations provided for a mandatory crude oil allocation program, which 13 refiners interpreted to permit double dipping in crude oil sales and in increased cost passthrough. These 13 refiners overbanked increased crude oil costs of $309.1 million. When, in May 1974, the FEA revised its regulations, all except Gulf discontinued overbanking. After clarification, Gulf agreed with FEA to decrease its bank $119.7 million. (DJM)

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[*Problems in Regulating Natural Gas Prices by the Federal Energy Administration*]. OSP-76-15; B-178205. February 25, 1976. 9 pp. + appendix (1 pp.).
Report to Sen. Edward M. Kennedy, Chairman, Senate Committee on the Judiciary: Administrative Practice and Procedure Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Congressional Relevance: *Senate* Committee on the Judiciary: Administrative Practice and Procedure Subcommittee.
Authority: Emergency Petroleum Allocation Act of 1973 (P.L. 93-159). Federal Energy Administration Act of 1974, § 5(b)(11) (P.L. 93-275). 10 C.F.R. 212.

The major problems in developing, implementing, and enforcing the Federal Energy Administration's (FEA) regulation of the price of natural gas liquids (NGL) were examined. ***Findings/Conclusions:*** Federal laws direct the FEA to regulate the price of at least two NGLs, butane and propane. However, the legislation was not specific, and FEA price regulations were poorly suited for application to NGL plants, resulting in considerable industry confusion. FEA did not implement a meaningful compliance and enforcement program; however, many companies did not know that the price regulations pertained to them. In January 1975 the FEA implemented specific regulations for NGL plants and in August 1975 applied them retrospectively. Because of numerous requests for clarification, FEA proposed amendments to include provisions inadvertently omitted and to adapt them more specifically to gas plant operations. FEA recently started some limited compliance audits of gas processors. FEA officials acknowledged that the solution of the pricing of NGL took unduly long. Several producers/refiners are currently challenging FEA's legislative authority in court. (Author/DJM)

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Comments on the Administration's Proposed Synthetic Fuels Commercialization Program. RED-76-82; B-178205. March 19, 1976. 19 pp. + 2 appendices (10 pp.).
Report to Rep. Ken Hechler, Chairman, House Committee on Science and Technology: Energy Research, Development and Demonstration (Fossil Fuels) Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Science and Technology: Energy Research, Development and Demonstration (Fossil Fuels) Subcommittee.
Authority: Federal Nonnuclear Energy Research and Development Act (42 U.S.C. 5901). Energy Reorganization Act of 1974 (42 U.S.C. 5801). S. 2532 (94th Cong.). H.R. 3474 (94th Cong.).

Proposals providing for Federal assistance to aid industry in building a limited number of commercial-scale synthetic fuel plants, using technologies which have advanced to the point where large-scale plants can be built to help demonstrate their economic and environmental viability, have been or are being considered by Congress. ***Findings/Conclusions:*** The Energy Research and Development Administration (ERDA) believes that the major contribution from these plants will be the environmental and economic information that will be generated in locating and operating them. This information could pave the way for industry and governmental regulatory bodies' involvement in the commercialization of a large number of coal gasification and oil shale plants. In anticipation of legislation authorizing this activity, ERDA plans to make various studies aimed at: undertaking strategy and policy analyses necessary for program implementation; initiating long lead-time activities related to program implementation, such as environmental impact statement finalization and program regulations; and informing the public, Congress, States, and other groups about the proposed program. ***Recommendations:*** Congress should consider awaiting the completion of these studies before considering legislation authorizing a commercial demonstration program. Congress should consider specifically requiring ERDA to delineate and justify the scope and magnitude of Federal assistance it feels will be needed to implement the program and to justify the type and number of plants needed to accomplish the program's objectives. (Author/SC)

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Financing for Commercial-Sized Demonstrations of Energy Technologies. April 1, 1976. 10 pp.
Testimony before the House Committee on Science and Technology; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Science and Technology.
Authority: Energy Policy and Conservation Act of 1975. H.R. 3474 (95th Cong.). H.R. 12112 (95th Cong.).

Legislation regarding financial support for synthetic fuels and other energy development should be coordinated in a comprehensive framework including all likely development costs and details. Such legislation authorizing financing by means other than the appropriation process should include provisions for annual review by the Congress coupled with such limitations and allowances for flexibility as deemed appropriate. Close scrutiny should be given to the number and size of nonsynthetic fuel commercial demonstration facilities proposed by the Energy Research and Development Administration (ERDA) and to any information obtained under this program before authorizing the planned research and development on synthetic fuel plants. The question of Government assistance for encouraging the commercialization of synthetic and nonsynthetic fuel technologies might be better resolved within the broader scope of the proposed Energy Independence Authority with financial assistance authority covering all forms of energy supply, rather than a select few. Questions could be raised regarding: the desirability of subsidizing high cost synthetic fuel output when the price of domestic oil is regulated at an average price; and the incremental versus average pricing of synthetics. (Author/QM)

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Developing and Commercializing Energy Technology. April 13, 1976.- 16 pp. + appendices (11 pp.).
Testimony before the Senate Committee on Banking, Housing and Urban Affairs; by Monte Canfield, Jr., Director, Office of Special Programs.

Congressional Relevance: *Senate* Committee on Banking, Housing and Urban Affairs.
Authority: Federal Energy Development Impact Assistance Act of 1976; S. 3007 (94th Cong.); H.R. 11792 (94th Cong.). Energy Independence Authority Act of 1975; S. 2532 (94th Cong.); H.R. 10267 (94th Cong.). Permanent Tax Reduction Act of 1975; H.R. 10108 (94th Cong.). S. 973 (94th Cong.). H.R. 8524 (94th Cong.).

Proposed legislation being considered by the Congress would provide various combinations of Federal financial support for developing and commercializing energy technologies. There are three main types of legislative proposals to financially assist the development of new energy technologies: 1)subsidies to States and local governments in regions which are largely rural and unindustrialized to help them plan for development and to provide the public facilities necessary as a result of the development; 2)incentives to build and operate new risky commercial or near-commercial facilities in the form of loan guarantees, interest subsidies and tax write-offs; and 3)subsidies to the producers of synthetic fuels in the form of price supports or to users in the form of tax incentives or low interest loans. The Administration's most comprehensive energy development proposal would establish an Energy Independence Authority (EIA) and encourage the development and commercial operation of domestic energy sources. This bill (S. 2532) exhibits a clear preference for initiatives of the supply-increasing type and would hamper conservation efforts. GAO has conducted and is conducting studies on the question of Federal financial assistance for developing and commercializing energy technologies. (SC)

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[*Federal Assistance to State and Local Governments in Developing and Administering Energy Programs*]. OSP-76-20; B-178205. April 23, 1976. 8 pp.
Report to Frank G. Zarb, Administrator, Federal Energy Administration; by Monte Canfield, Jr., Director, Office of Special Programs.

Authority: Federal Energy Administration Act of 1974. Energy Policy and Conservation Act.

The Federal Energy Administration's (FEA) assistance to State and local governments in developing and administering energy programs was surveyed. ***Findings/Conclusions:*** Several weaknesses were found in program planning and direction which have inhibited FEA's ability to significantly affect State and local activities in dealing with energy problems. Little coordination and communication were found between FEA headquarters, FEA regional offices, and State energy offices on energy conservation, and ineffective use of manpower was found in dealing with other significant energy problems and issues. Studies of the growing natural gas shortage, for instance, were independently made by all three entities, and often amounted to duplication of effort. The use of coal and alternate energy resources (solar, geothermal, solid waste) was given minimal attention. ***Recommendations:*** FEA should establish a plan setting forth FEA programs which should involve State and local governments, and the manner of their involvement with FEA headquarters and regional offices. The plan should provide for more effective communication and coordination between regional offices to insure a single purpose in carrying out such programs and the maximum flow of information along organizational elements. (DJM)

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Importance of Financial Data in Evaluating Federal Energy Programs. April 28, 1976. 19 pp.
Speech before American Gas Association-Edison Electric Inst. Accounting Conference, Houston, TX; by Elmer B. Staats, Comptroller General.

Organization Concerned: Cost Accounting Standards Board; Federal Energy Administration; Financial Accounting Standards Board; Securities and Exchange Commission.
Authority: Energy Policy and Conservation Act; S. 2872 (94th Cong.).

Congress is interested in using accounting in carrying out national policies. The Cost Accounting Board seeks to achieve consistency in cost accounting under covered Government contracts. Disclosure Statements are used to provide for knowledge, in advance of contracting, of the cost accounting practices which the contractor will actually use. The Energy Policy and Conservation Act will establish a strategic petroleum reserve, set a ceiling price for domestic crude oil, and mandate auto efficiency standards. The act will increase the Federal Energy Administration's (FEA's) responsibilities and give GAO new authorities including the right to inspect the books and records of private persons and companies under certain conditions. GAO has about 90 energy studies underway or planned. One study of natural gas deregulation concluded that, even with deregulation, natural gas production is likely to continue its decline. Without it, though, production would decline even more steeply. The economic tradeoffs involved in alternative courses of action must be carefully weighed. The best long-term organizational approach to the solution of energy problems would be to establish a Department of Energy and Natural Resources. Energy conservation should be given higher priority in national policy. (QM)

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Comments on Selected Aspects of the Administration's Proposal for Government Assistance to Private Uranium Enrichment Groups. RED-76-110; B-159687. May 10, 1976. 2 pp. + 3 appendices (33 pp.).
Report to Rep. Melvin Price, Vice Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Uranium Enrichment Associates.
Congressional Relevance: *Joint* Committee on Atomic Energy.
Authority: Nuclear Fuel Assurance Act of 1975; H.R. 8401 (94th Cong.); S. 2035 (94th Cong.). Atomic Energy Act of 1954, as amended (42 U.S.C. 2051(a)(4); 42 U.S.C. 2133(d)). Congressional Budget Act of 1974 (P.L. 93-344).

The Nuclear Fuel Assurance Act proposes Government assistance to private uranium enrichment groups. Of specific concern is a proposal from Uranium Enrichment Associates to provide the next increment of enrichment capacity. ***Findings/Conclusions:*** Management of the Government enrichment facilities could be accomplished more effectively by a corporation having a self-financing authority to borrow funds from the Treasury or the public. A self-financing proposal would free the corporation from the budgetary requirement of seeking congressional approval of appropriations, thereby achieving a major goal sought by the present legislative proposal. The Joint Committee on Atomic Energy should approve legislation authorizing the Energy Research and Development Administration (ERDA) to construct the next increment of enrichment capacity using the proven enrichment process. ERDA should seek and encourage private industry to continue efforts in advanced technologies through explicit programs. Government assistance and assurances will be required. The Government should seek an equitable sharing of risk with the private enrichers. (Author/QM)

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Developing and Commercializing Energy Technology. May 24, 1976. 9 pp.
Testimony before the House Committee on Banking, Currency and Housing: Economic Stabilization Subcommittee; the House Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Banking, Currency and Housing: Economic Stabilization Subcommittee; *House* Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee.
Authority: S. 2532 (94th Cong.). H.R. 12112 (94th Cong.).

There are three main types of legislative proposals to financially assist the development of new energy technologies: "front-end" assistance or subsidies to states and local governments in regions which are largely rural and unindustrialized; incentives in the form of loan guarantees, interest subsidies and tax writeoffs for reluctant private investors; and subsidies to producers in the form of tax incentives or low interest loans to enable higher cost technologies to compete in the marketplace. A bill is being considered which would establish an Energy Independence Authority (EIA) to encourage energy development and conservation. The proposed bill shows a preference for initiatives of the supply-increasing variety. It would actually hamper conservation efforts because it would result primarily in the allocation, not the creation, of capital. The bill is underlaid by some assumptions regarding national policy which are by no means settled, notably its predilection toward nuclear power generation. The Congress should consider awaiting further Energy Research and Development Administration (ERDA) studies before approving any legislation. Information which should be available from ERDA and GAO in the summer of 1976 should be helpful to the Congress as it proceeds toward final legislative action on bills dealing with the Federal financial support for construction costs, price supports, and initial costs to State and local governments for energy programs. (Author/QM)

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Actions Taken by the Federal Power Commission on Prior Recommendations Concerning Regulation of the Natural Gas Industry and Management of Internal Operations. RED-76-108; B-180228. May 24, 1976. 13 pp. + appendices (4 pp.).
Report to Rep. John E. Moss, Chairman, House Committee on Interstate and Foreign Commerce: Oversight and Investigations Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Oversight and Investigations Subcommittee.
Authority: Natural Gas Act. F.P.C. Order 402. F.P.C. Order 402-A. F.P.C. Order 491. F.P.C. Order 418. F.P.C. Order 455. F.P.C. Order 455-B. F.P.C. Opinion 699. F.P.C. Opinion 699-B. 18 C.F.R. 3.735. Executive Order 11222.

The Federal Power Commission (FPC) has implemented most of GAO's prior recommendations concerning the natural gas industry, and the actions taken have enhanced FPC's ability to effectively regulate the natural gas industry ***Findings/Conclusions:*** FPC is having some difficulty, however, in obtaining volume and price data on emergency sales promptly because it lacks an adequate followup system and because interstate pipeline companies are not required to file sales data within a specified period. FPC's system of following up on volume and price data not reported involves merely writing or phoning the companies at the discretion of the FPC staff member keeping the records. Usually 4 months elapse before any followup is made. ***Recommendations:*** For FPC to adequately monitor the effectiveness of the 60-day emergency sales, the Chairman of FPC should: establish a specific reporting time frame for interstate pipeline companies required to file volume and price data on 60-day emergency

sales; require that formal followup procedures be established to obtain 60-day emergency sales data when the data are not promptly reported, including specifics on when the penalty provisions of the Natural Gas Act should be invoked; and keep data about emergency sales that continue beyond 60 days separate from other emergency sales data. (Author/QM)

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[*Requests to Regulatory Agencies by Oil Companies for Deviations from Standard Procedures*]. OSP-76-25; B-156603. June 15, 1976. 7 pp. + enclosure (2 pp.).
Report to Rep. George Miller, House Committee on Interstate and Foreign Commerce; Rep. John E. Moss; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Environmental Protection Agency; Federal Energy Administration; Federal Maritime Commission; Federal Power Commission; Federal Trade Commission; Department of the Interior; Interstate Commerce Commission; Department of Transportation; Securities and Exchange Commission.
Congressional Relevance: *Rep.* George Miller; *Rep.* John E. Moss.

A number of deviations from standard operating procedures were requested from Federal regulatory agencies from September 1973 through October 1975. *Findings/Conclusions:* The Environmental Protection Agency received requests from the Offshore Operators Committee, Shell, Sun Oil, Texaco, Gulf Oil, and Atlantic Richfield for changes or relaxation of requirements related to discharges, effluents, or sulfur content. Federal Energy Administration information revealed 181 requests, none involving procedures which would distort financial reporting, of which 33 were granted and 2 partially granted. No requests were received by the Federal Maritime Commission. Requests received by the Federal Power Commission related to extensions for filing forms and reconsideration of termination of procedures for emergency sale of natural gas. The Federal Trade Commission reported motions by companies to quash orders for filing special reports. Department of the Interior received requests dealing with testing requirements of equipment. The Interstate Commerce Commission reported 12 requests for deviations pertaining to onshore operations. Only the Coast Guard and Materials Transportation Bureau of the Department of Transportation received requests for modification. The Securities and Exchange Commission did not exempt oil companies from information disclosure requirements, except for five waivers which were considered reasonable. (HTW)

149

[*Effects of a Change in Size Standard for Small Business Petroleum Refiners*]. June 18, 1976. 3 pp. + enclosure (9 pp.).
Report to Rep. John E. Moss; Rep. John D. Dingell; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Small Business Administration; Defense Supply Agency; Geological Survey.
Congressional Relevance: *Rep.* John E. Moss; *Rep.* John D. Dingell.
Authority: 13 C.F.R. ch. 1, part 121.

The October 1975 change in the size standard for petroleum refiners, one of seven made in the last 3 years by the Small Business Administration (SBA), was made to allow small refiners to expand without losing benefits and to compensate for a decrease in the percentage of refiners considered "small". Eligibility for set-aside contracts and SBA loans was increased to 50,000 barrels per day (BPD) crude oil capacity and 1,500 employees or less; for sales of royalty oil, it was increased to 45,000 BPD and the same number of employees. *Findings/Conclusions:* Based on examination of industry lists and contacts with Federal agencies, eight refiners were identified that may have become eligible for small business benefits as a result of the change. The eligibility of three of these was being reviewed by SBA. According to an official of the U.S. Geological Survey, an increase in the number of eligible refiners will cause refiners eligible under the old standard to receive less royalty oil reserved for sale to small refiners. Three agency officials who had earlier recommended a more limited increase now stated that the new standard was justified. An examination of the former Administrator's appointment book did not show that he was contacted by refiners directly affected by the change. (HTW)

150

Budgeting of Federal Financial Incentives for Energy Development. July 27, 1976. 3 pp.
Testimony before the Senate Committee on Budget; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Senate* Committee on Budget.
Authority: Nuclear Fuel Assurance Act; S. 2035 (94th Cong.). Synthetic Fuels Demonstration Plants Bill; H.R. 12112 (94th Cong.). S. 2532 (94th Cong.).

Legislative proposals before Congress aimed at fostering the development of new energy supply technologies include S. 2532 to establish the Energy Independence Authority; S. 2035, the Nuclear Assurance Act; and H.R. 12112, to amend the Federal Non-Nuclear Energy Research and Development Act of 1974. S.2035 would authorize the Energy Research and Development Administration (ERDA) to enter into contracts with firms for building privately-owned uranium enrichment plants with total authority of $8 billion. H.R. 12112 would authorize ERDA to provide private firms up to $4 billion in support for synthetic fuel, renewable resources, and industrial conservation projects. GAO advocated full disclosure of the budget impact of Federal credit programs and expressed support for recommendations of the 1967 President's Commission on Budget Concepts which urged a unified budget. Off-budget programs have departed from this concept and would be substantially increased by enactment of the financial incentives under consideration. The loan guarantee technique may not be the most effective way to achieve the objectives of the bills and the proposed loan guarantees should be carefully weighed against other options. (HTW)

151

An Evaluation of Proposed Federal Assistance for Financing Commercialization of Emerging Energy Technologies. EMD-76-10; B-178205. August 24, 1976. 56 pp. + appendices (9 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Federal Energy Administration.
Congressional Relevance: Congress.
Authority: Energy Policy and Conservation Act (P.L. 94-163). Congressional Budget Act of 1974, titles I-IX (P.L. 93-344). P.L. 94-385. S. 2532 (94th Cong.). H.R. 12112 (94th Cong.).

Proposed legislation before Congress would provide Federal assistance to encourage private use of a variety of energy technologies.
Findings/Conclusions: Three factors to be considered in the selection of technologies are: contributions to meeting the Nation's energy needs, costs, and eventual selling price. In choosing financing mechanisms, factors to be considered are the technology's state of development, its economic feasibility, and groups whose actions would be influenced. Based on its analysis of energy options, GAO concluded that conservation should have top priority. Among technologies to increase energy supply, hydrothermal energy, municipal waste combustion, solar heating, and tertiary oil recovery were considered most cost effective and, thus, to be given priority. Synthetic fuel would not be competitive with foreign oil, and new technological advances may make early plants obsolete before they operate. Therefore, financial assistance for commercial development in this field was not favored. *Recommendations:* Congress should place priority on energy conservation, encourage solar heating, maintain oversight of tertiary oil recovery, and consider action to encourage municipal waste combustion. It should also consider the advisability of legislation authorizing Federal loan guarantees to builders of synthetic fuel

plants, and consider directing the Energy Research and Development Administration to continue research and development and to construct smaller plants which could supply necessary information. (HTW)

152

An Evaluation of Proposed Federal Assistance for Financing Commercialization of Emerging Energy Technologies. August 30, 1976. 11 pp.
Testimony before the House Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; the House Committee on Science and Technology; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; *House* Committee on Science and Technology.
Authority: Synthetic Fuels Demonstration Plants Bill; H.R. 12112 (94th Cong.).

Several bills introduced in Congress would provide Federal assistance to encourage private use of a variety of energy technologies. H.R. 12112 would provide Federal loan guarantees for commercialization of synthetic fuels. Factors to be considered in selection of energy technologies are: contributions to meeting the Nation's energy needs, costs, and selling price. The choice of financing mechanisms depends on the technology's state of development, its economic feasibility, and groups whose actions would be influenced. Based on its analysis of energy options, GAO concluded that conservation should have top priority. Among technologies to increase energy supply, hydrothermal energy, municipal waste combustion, solar heating, and tertiary oil recovery were considered most cost effective. Large investments required to build synthetic fuel plants would direct Federal incentives primarily to large industries. GAO did not favor Government assistance for commercial development of synthetic fuels, but felt that emphasis should be placed on research, development, and demonstration. Congress should continue to place priority on energy conservation, encourage solar heating, maintain oversight of tertiary oil recovery, and consider action to encourage municipal waste combustion. It should also consider the advisability of legislation authorizing Federal loan guarantees to builders of synthetic fuel plants and consider directing the Energy Research and Development Administration to expand research, development, and small plants. (HTW)

153

Management Improvements Needed in the Federal Power Commission's Processing of Electric-Rate-Increase Cases. EMD-76-9; B-180228. September 7, 1976. 22 pp. + 3 appendices (7 pp.).
Report to Rep. John J. Moakley; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Boston Edison Co.; Federal Power Commission; Massachusetts: Dept. of Public Utilities.
Congressional Relevance: *Rep.* John J. Moakley.
Authority: Federal Power Act, as amended (16 U.S.C. 792-825r). F.P.C. Order 513. F.P.C. Order 157.

Since 1970 the Boston Edison Company has filed with the Federal Power Commission (FPC) four wholesale electric-rate-increase cases, identified as Rate S-1 through Rate S-4. FPC is authorized to suspend proposed rate increases for up to 5 months pending its hearing and final action. If a proceeding is not concluded at the end of the suspension period, the utility can put a requested rate into effect. *Findings/Conclusions:* Boston Edison's municipal customers do not appear to have lost retail customers or experienced a decrease in sales volume as a result of potential overcharges. Municipal utilities generally passed wholesale-rate increases, including potential overcharges, on to their retail customers, but refunds of such overcharges may or may not be returned because the Massachusetts Department of Public Utilities does not require it and the FPC has no authority in such matters. The fixed-interest rates on overcharges are not fair for either buyers or sellers because cases often take years to process and interest rates can fluctuate considerably during such a period. Present delays in processing electric-rate-increase cases are attributable primarily to: the inability of the Bureau of Power to keep pace with the increased number of electric rate cases; the inability of the Office of Administrative Law Judges and Office of Special Assistants to keep pace with the increased number of electric, hydroelectric, and natural gas cases; higher priority natural gas cases; and numerous extensions of time granted to the parties involved.
Recommendations: FPC should: advise the applicable State public commissions when overcharges are refunded to wholesale customers; confer with State commissions or their associations on what actions are necessary to assure that overcharge refunds are passed on to retail customers wherever possible; and revise its regulations to provide that interest rates on overcharges be set in accordance with each utility's effective interest rate for short-term capital during the period the overcharge is held. The Chairman of the FPC should instruct the Office of the Secretary and the Office of Administrative Law Judges to evaluate more critically requests for time extensions and to grant them only in exceptional cases. (Author/QM)

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Alternative Fuels for Aviation (H.R. 12112). September 28, 1976. 11 pp.
Testimony before the Senate Committee on Aeronautical and Space Sciences: Ad Hoc Aerospace Technology and National Needs Subcommittee; by Monte Canfield, Jr., Director, Energy and Mineral Div.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Senate* Committee on Aeronautical and Space Sciences: Ad Hoc Aerospace Technology and National Needs Subcommittee.
Authority: Synthetic Fuels Demonstration Plants Bill; H.R. 12112 (94th Cong.).

H.R. 12112 is primarily designed to promote the commercialization of synthetic gas; it also contains a provision for a small program to increase liquid fuels through oil shale plants. Factors to be considered in choosing energy technologies are: contributions to meeting the Nation's energy needs, costs, and selling price. Based on its analysis of energy options, GAO concluded that conservation should have top priority. Among technologies to increase energy supply, hydrothermal energy, municipal waste combustion, solar heating, and tertiary oil recovery were considered more cost effective than synthetic fuels and thus to be given priority. Estimates of future needs for synthetic fuels vary but EDRA estimated that the equivalent of 10 million barrels of oil from synthetic fuels will be needed in the year 2000. Synthetic fuel production does not warrant Government financial support at this time, but Government research, development, and demonstration in this field should be continued. Congress should continue to place priority on energy conservation, encourage solar heating, maintain oversight of tertiary oil recovery, and consider action to encourage municipal waste combustion. It should also consider the advisability of legislation authorizing Federal loan guarantees to builders of synthetic fuel plants, and consider instead directing the Energy Research and Development Administration to expand research, development, and small plants. (HTW)

155

Improvements Needed in the Federal Enhanced Oil and Gas Recovery Research, Development, and Demonstration Program. EMD-77-3; B-178205. January 28, 1977. 26 pp. + appendices (27 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Federal Energy Administration.
Congressional Relevance: *House* Committee on Science and Technology; *Senate* Committee on Interior and Insular Affairs; Congress.

Authority: Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577).

Improvements are needed in the Federal enhanced oil and gas recovery research, development, and demonstration program. ***Findings/Conclusions:*** Advanced methods to recover currently nonrecoverable oil and gas could contribute to reducing United States dependence on imported energy resources. Commercialization of many of these techniques will require more technology development. Other obstacles, primarily economic, also stand in the way of commercialization. The Energy Research and Development Administration has a risk-sharing cooperative demonstration program to stimulate industry commercialization of advanced recovery technologies. However, the program has not been based on adequate planning and has been moving along at a slow pace. Although the agency is attempting to improve the program, it is unlikely to have a major effect on increasing domestic oil and gas supplies before the late 1980s or early 1990s. ***Recommendations:*** The Administrator of the Energy Research and Development Administration should give continued and increased emphasis to developing and putting into operation a management plan for enhanced gas recovery. The plan should focus on developing a balanced research program to include laboratory research, demonstration tests, and the gathering of geological data on the types of deposits the agency plans to test. The Administrator should also reassess annually the Federal role and level of effort in enhanced oil and gas recovery research and development in the light of increased oil and gas prices and industry's willingness to promote new technology. (Author/SC)

HOW CAN THE EXECUTIVE BRANCH ORGANIZATION AND PROCESSES FOR DEALING WITH ENERGY PROBLEMS BE IMPROVED?

156

California's Central Valley Project–Proposed Power Rate Increase. B-125042. November 19, 1973. 34 pp. + appendix (3 pp.).
Report to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Bureau of Reclamation.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: H. Rept. 89-1409.

The Department of the Interior proposed a substantial (51.6%) increase in the power rate to be charged customers of the Bureau of Reclamation's Central Valley Project (CVP) in California. Project costs allocated to power, and part of the costs allocated to irrigation, are required to be recovered in rates charged power customers and to be repaid to the U.S. Treasury. To determine whether power rates are adequate to recover the Federal investment within the required repayment period, CVP periodically makes and publishes rate and repayment studies. ***Findings/Conclusions:*** The rate and repayment studies upon which the proposal raise is based have inherent weaknesses which cause them to give speculative results. These weaknesses result from uncertainties from projecting revenues, costs, and changes in operating methods for extended periods. Several contentions made by the opponents of the proposed rate increase involved suggestions which would require agreement with a contractor, and GAO cannot predict what the terms of the agreement would be. Four of the contentions had merit: three involved separate rate and repayment study procedures which the Bureau of Reclamation could change unilaterally and one involved using updated hydrology studies. Two CVP procedures were not consistent with established criteria: planning to avoid a deficit in any year of the repayment period and planning for an operational surplus at the end of the repayment period. If these two procedures were to be changed, the power rate would have to be increased only 36%. The proposed rate probably could be further reduced if water availability data from updated hydrology studies were used in the rate and repayment study for CVP. (Author/QM)

157

Energy Data Collection in the Federal Government. January 17, 1974. 6 pp.
Testimony before the House Committee on Small Business: Activities of Regulatory Agencies Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Atomic Energy Commission; Bureau of Mines; Department of the Interior; Department of Commerce; Geological Survey; Federal Energy Administration; Federal Power Commission.
Congressional Relevance: *House* Committee on Small Business: Activities of Regulatory Agencies Subcommittee.
Authority: Economic Stabilization Act of 1970, as amended. Emergency Petroleum Allocation Act of 1973. Defense Production Act of 1950. H.R. 11793 (94th Cong.). H.R. 11903 (94th Cong.). S. 2776 (94th Cong.). S. 2782 (94th Cong.).

There is substantial concern in and out of the Government about the data on which energy decisions are based and about the system under which such data are collected. Seventeen Federal agencies, comprising 48 bureaus, offices, divisions, and administrations which were collectors or users of energy data were identified and visited. As of March 1973, 15 major Federal agencies were circulating 145 questionnaires and forms to private industries and States requesting energy-related data. There is an acute need for improvements in both organization and process to assure systematic collection and analysis of energy data. There is also a need for specific statutory authority for energy data collection and specific statutory support for systematic data verification. Verification provisions in the legislation should provide for access to records and other documentation which private firms have in support of data reported to the Government. GAO should be given access to the same records and documentation to which any agency given responsibility for energy data collection is provided access. (Author/QM)

158

A Bill to Establish a National Energy Information System. February 6, 1974. 16 pp.
Testimony before the Senate Committee on Interior and Insular Affairs; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Atomic Energy Commission; Bureau of Mines; Department of the Interior; Department of Commerce; Geological Survey; Federal Energy Administration; Federal Power Commission.
Congressional Relevance: *Senate* Committee on Interior and Insular Affairs.
Authority: Energy Policy Act of 1973. S. 2776 (94th Cong.). H.R. 11793 (94th Cong.). S. 2782 (94th Cong.). S. 2176 (94th Cong.).

Legislation is required to establish a comprehensive energy data system. Such legislation should: (1) require reporting of needed energy-related information; (2) provide for certification of the accuracy of reported data and establish sanctions for nonreporting or incorrect reporting; (3) provide for access to records and other supporting documentation by those collecting data so that programs of data verification can be established; (4) provide for standardization of terms and definitions to insure reporting on a consistent basis; (5) assure that needed data are available to Government agencies; (6) provide for prompt and complete public disclosure, limiting "confidential" data to the minimum; and (7) provide assurance of independent reviews of energy data collection by giving GAO access to all reported data and to the records and supporting documentation of those reporting data. The best long-term organizational approach to the solution of energy data problems is to establish a Department of Energy and Natural Resources which would have the scope and stability to deal with complex and long-term issues. A single reference source or directory should be developed. A comprehensive

inventory of existing collection efforts, preiodically updated, should identify the data and its source, frequency, timeliness, and qualitatively describe its reliability. (Author/QM)

159

Actions Needed to Improve Federal Efforts in Collecting, Analyzing, and Reporting Energy Data. B-178205. February 6, 1974. 35 pp. + 3 appendices (30 pp.).
Report to Sen. Henry M. Jackson, Chairman, Senate Committee on Interior and Insular Affairs; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Atomic Energy Commission; Department of the Interior; Federal Energy Office; Federal Power Commission; Interstate Commerce Commission.
Congressional Relevance: *Senate* Committee on Interior and Insular Affairs.
Authority: Energy Policy Act of 1973; S. 70 (93rd Cong.). S. 2776 (93rd Cong.). S. 2782 (93rd Cong.). S. 2176 (93rd Cong.). H.R. 11793 (93rd Cong.). H.R. 11903 (93rd Cong.).

Major improvements are essential in both the collection and the analysis of energy data. *Findings/Conclusions:* Many Federal agencies have been collecting a large volume of energy-related data which comprises a wide range of information which can be utilized in developing a comprehensive Federal energy information system. However, there are gaps in the data being collected; time lags are not consistent with current national requirements; the data are unverified for the most part; and the individual data collection efforts need to be coordinated and integrated into a comprehensive system. Data collection should be based on a careful review of the needs of data users, giving priority to the data needs of Government users responsible for energy-related policy decisions. General responsibility for developing the comprehensive system should be placed within the executive branch which has the opportunity to establish a professional, objective organization to gather energy information. *Recommendations:* Legislation required to establish a comprehensive energy data system should: require reporting of needed energy-related information; provide for certification of the accuracy of reported data; provide for access to records; assure that the needed data are available to Government agencies; provide for prompt and complete public disclosure; and provide assurance of independent reviews of the energy data collection. (SC)

160

[*Proposed Energy Inventory Act of 1974*]. B-178205. April 12, 1974. 2 pp.
Letter to Rep. Harley O. Staggers, Chairman, House Committee on Interstate and Foreign Commerce; by Robert F. Keller, Deputy Comptroller General.

Congressional Relevance: *House* Committee on Interstate and Foreign Commerce.
Authority: Energy Inventory Act of 1974; H.R. 12534 (93rd Cong.).

161

Pacific Northwest Hydro-Thermal Power Program–A Regional Approach to Meeting Electric Power Requirements. B-114858. June 5, 1974. 22 pp. + 4 appendices (16 pp.).
Report to the Congress; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Bonneville Power Administration; Bureau of Reclamation; Department of the Army: Corps of Engineers; Department of the Army; Department of the Interior.
Congressional Relevance: Congress.
Authority: Public Works Appropriation Act of 1970 (P.L. 91-144). Bonneville Project Act (16 U.S.C. 832c). Government Corporation Control Act. P.L. 91-439. H.R. 14168 (93rd Cong.) S. 3362 (93rd Cong.). H. Rept. 91-1219.

The Hydro-Thermal Power Program was developed in 1969 to meet the growing electrical needs of the Pacific Northwest through the integration of regional power resources. *Findings/Conclusions:* As a result of delays in providing generating capacity under phase I of the program, power shortages in increasing amounts have occurred and are expected to continue to occur. The delays resulted from problems in: obtaining funds for constructing the Federal hydroelectric projects to be provided under the program plan; planning, designing, and constructing both Federal and non-Federal facilities; obtaining public acceptance of a Federal hydroelectric project; and meeting State air pollution control requirements for a thermal plant. Actions have been taken by both the Federal Government and the utilities to reduce the impact of the program delays. Additional Federal funds totaling about $2 billion will be required for other hydroelectric projects and transmission facilities in order to complete phase I of the program. Pacific Northwest utilities and the Bonneville Power Administration (BPA) have agreed upon a plan for implementing the program through 1986. BPA has developed a legislative proposal to authorize it to sell revenue bonds to the Secretary of the Treasury to finance its expenses. (QM)

162

Survey of Federal and Electric Utility Procurements of Power Equipment. B-174317. August 1, 1974. 23 pp. + appendices (11 pp.).
Report to Sen. Lee Metcalf, Chairman, Senate Committee on Government Operations: Reports, Accounting and Management Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Atomic Energy Commission; Bonneville Power Administration; Federal Power Commission; Rural Electrification Administration; Tennessee Valley Authority.
Congressional Relevance: *Senate* Committee on Government Operations: Reports, Accounting and Management Subcommittee.

Making meaningful comparisons of power equipment prices is a complex task involving many technical matters and subjective decisions. Costs of somewhat comparable power equipment sometimes varied greatly in Federal procurements, in electric utility procurements, and between Federal and electric utility procurements. *Findings/Conclusions:* There was no pattern to indicate that electric utilities generally paid more or less than the Federal Government for comparable equipment. A number of problems precluded determination of the reasonableness and comparability of prices paid by the Federal Government and the electric utilities for nuclear and nonnuclear power equipment. These problems involve: the general lack of Federal authority to examine suppliers' and manufacturers' records relating to such sales; the many complex and technical equipment specifications involved; the lack of criteria on how to measure in dollars certain necessary economic considerations; and the fact that nuclear equipment is purchased on a total system basis and costs are not available on an individual component basis. No determination concerning the reasonableness of equipment costs to the Federal Government and the electric utilities can be made without extensive access to the records of equipment suppliers and manufacturers. Few regulatory commissions have authority to review or audit records of equipment suppliers and manufacturers. Little attention is given to individual procurements of power equipment. Increasing foreign competition in procurements of power equipment and increasing standardization of equipment and plant siting and design hold promise for reducing costs. (QM)

163

[*Access of the Federal Power Commission to Bureau of Reclamation Records to Insure Compliance with the Federal Power Act*]. B-125042. August 22, 1974. 4 pp.
Letter to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Bureau of Reclamation; Federal Power Commission.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Federal Power Act § 303 (16 U.S.C. 825). 79 Cong. Rec. 10379.

164

[*Staffing of Federal Energy Administration's Office of Communications and Public Affairs*]. B-181254. February 28, 1975. 3 pp. + 5 appendices (14 pp.).
Report to Rep. John E. Moss; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Rep.* John E. Moss.
Authority: 5 U.S.C. 3107.

A number of Federal Energy Administration (FEA) employees, including those temporarily detailed from other agencies, deal with public relations and information and the media. *Findings/Conclusions:* The FEA's Office of Communications and Public Affairs is its only office for this task. It has a ceiling of 129 people, and as of February 1975 had 127 employees, including 12 nonpermanent employees. The 65 employees of the Public Inquiries and Correspondence Division respond to inquiries from the Government and the public, and processed about 2,000 responses a month as of January 1975, down from a monthly high in 1974 of 8,500. These employees worked considerable overtime in April and May 1974, but much of the overtime is being phased out. As of February 1975, 21 employees were classified as Public Information Officers. The Office averaged 130 employees and did a commendable job during the energy crisis, handling thousands of written and telephoned requests, and worked considerable overtime. Further study will involve the question of whether there is a violation of statutes which forbid the use of appropriated funds to pay such public relations employees. (DJM)

165

Alternative Energy Proposals. March 10, 1975. 6 pp.
Testimony before the House Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Energy and Power Subcommittee.

The General Accounting Office has developed a package of energy proposals which are mutually supportive and reasonably comprehensive. Items which would be worthwhile additions to any package of energy proposals include: legislation requiring that Federal regulatory agencies give energy conservation the highest possible priority in all regulatory action; modification of the oil price control program to create sufficient incentives for all oil that can be recovered economically through secondary and tertiary recovery; and a legislative mandate requiring that the Federal Government set an energy conservation example for the Nation in all of its activities which involve the direct consumption of energy. The energy proposal package developed by GAO includes: a number of energy conservation measures directed at the transportation sector; programs designed to improve energy conservation in the residential, industrial, and commercial sectors of the economy; a program of oil import quotas; Federal exploratory drilling on the frontier Outer Continental Shelf areas; truth in energy provisions designed to increase consumer awareness concerning energy efficiency; and the establishment of a Department of Energy and Natural Resources. (SC)

166

Alternative Energy Proposals Developed by the General Accounting Office in Response to Congressional Inquiries: Proposals and Supporting Analyses. March 17, 1975. 13 pp. + 7 enclosures.
Testimony before the House Committee on Ways and Means; by Elmer B. Staats, Comptroller General.

Congressional Relevance: *House* Committee on Ways and Means.

The development of a number of alternative energy proposals for congressional consideration reflects the growing consensus that a disciplined and cohesive national energy policy is needed and that this policy will significantly change the patterns of energy supply and consumption prevalent in the 1960's and early 1970's. *Findings/Conclusions:* A package of energy proposals developed by GAO included: 1)a number of energy conservation measures in the field of transportation; 2)a number of programs designed to improve energy conservation in the residential, industrial, and commercial sectors of the economy; 3)a program of import quotas designed to reduce the importation of oil; 4) a series of governmental activities designed to increase energy supplies and to provide reserves of petroleum to guard against future disruption of imports; and 5)the establishment of a Department of Energy and Natural Resources. Key differences among the various alternative energy proposals before Congress include the manner of implementing and the timing of any import reduction; the extent to which oil and natural gas prices should be controlled; the amount and method of phasing in any new retail tax on gasoline; and the desirability of voluntary as opposed to mandatory actions to improve the fuel efficiency of automobiles. (SC)

167

Information on Selected Aspects of the Power Operations of Tennessee Valley Authority. RED-75-368; B-114850. April 29, 1975. 10 pp. + appendix (45 pp.).
Report to Sen. Bill Brock; by Elmer B. Staats, Comptroller General.

Organization Concerned: Tennessee Valley Authority.
Congressional Relevance: *Sen.* Bill Brock.
Authority: Tennessee Valley Authority Act of 1933 (16 U.S.C. 831 et seq.). OMB Circular A-76.

The Tennessee Valley Authority (TVA) has several resource development programs, of which its power program is the largest, accounting for about 87% of TVA's total assets in 1974. *Findings/Conclusions:* With a few minor exceptions, the Authority's power rates are lower than the rates of its neighboring utilities and the average rate of utilities throughout the United States. TVA believes that it has achieved many of the advantages associated with peakload pricing. TVA plans to meet increased demand for electricity primarily with nuclear generated power. Seventeen nuclear units are planned for operation by 1984. The Authority owns six coal reserves which it estimates contain 382 million tons of recoverable coal. Ownership of these coal reserves contributes to lower prices for coal delivered to its steam plants. TVA negotiates with the Tennessee Valley Trades and Labor Council to establish the prevailing wage rate in the area for its trades and labor employees. The Authority constructs its power plants primarily with its own work force rather than by contract, and believes that this is a more economical and efficient means of attaining its program objectives. The Authority has established 10 residential power resale rate levels, any one of which it may authorize for use by each of its 160 distributors in billing consumers. (SC)

168

Which Alternative for Energy Policy? April 30, 1975. 12 pp.
Speech before National Economists Club, Washington, D.C.; by Monte E. Canfield, Jr., Director, Office of Special Programs.

Even with the implementation of strong energy conservation measures and increased efforts to develop new domestic energy supplies, the United States could be forced to increase its reliance on oil

imports in the years ahead. Oil imports should be reduced from the level that they would have been if no action were taken, first to achieve a 2 million barrel per day reduction in roughly 30 months, and from there, to further imports commensurate with our ability to conserve and increase domestic energy production. Comparative analysis is needed in the transportation sector because the claimed savings for various alternative energy proposals are being computed under different assumptions and using different data bases. It is estimated that implementation of GAO's package of energy proposals would result in a real Gross National Product of about $822 billion in calendar year 1976 as compared to about $802 billion if the Administration's proposals were adopted. Basic economic indicators would change little as a result of this implementation. Expenditures would act as a stimulus in the current economic situation and would diminish over time as the economy is likely to expand. Three alternative energy proposals not in GAO's proposals should be considered: statutory requirement that regulatory agencies give highest priority to energy conservation; modification of the oil price control program to create production incentives; and a legislative mandate that the Federal Government set an energy conservation example. (Author/QM)

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Energy, the Economy and the Budget. May 16, 1975. 14 pp.
Speech before Federal Government Accountants Association, Philadelphia Chapter, Eighteenth Annual Symposium; by Monte Canfield, Jr., Director, Office of Special Programs.

Even with the implementation of strong energy conservation measures and increased efforts to develop new domestic energy supplies, the United States could be forced to increase its reliance on oil imports in the years ahead. A reasonable goal for import restrictions, taking into account increasing demand and decreasing domestic supply, is the reduction of imports from the level that they otherwise would be if no action were taken on energy. Comparative analysis is needed in the transportation sector because the claimed savings for the various alternative energy proposals are being computed under different assumptions and using different data bases. Basic economic indicators would change little as a result of the implementation of GAO's energy program from what they would have been if no action were taken. Expenditures would act as a stimulus in the current economic situation and would diminish over time as the economy expands. The following proposals should be considered: a statutory requirement that Federal regulatory agencies give energy conservation the highest possible priority; modification of the oil price control program to create sufficient incentives for producing all oil that can be recovered economically through secondary and tertiary recovery; and a legislative mandate requiring the Federal Government to set an energy conservation example. (Author/QM)

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[***Comments on the Energy Information Act***]. B-178205.90. July 28, 1975. 6 pp. + attachments (4 pp.).
Letter to Rep. Harley O. Staggers, Chairman, House Committee on Interstate and Foreign Commerce; by Robert F. Keller, Deputy Comptroller General.

Organization Concerned: Department of the Interior; Federal Energy Administration; Federal Power Commission; Federal Trade Commission; Geological Survey.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce.
Authority: Energy Information Act; H.R. 2385 (94th Cong.). Federal Energy Administration Act of 1974 (P.L. 93-275; 15 U.S.C. 761). S. 70 (93rd Cong.). S. 2176 (93rd Cong.). S. 2776 (93rd Cong.).

171

America's Energy Futures. August 4, 1975. 17 pp.
Speech before 1975 Engineering Foundation Conference, Henniker, New Hampshire; by Monte Canfield, Jr., Director, Office of Special Programs.

The Ford Foundation's Energy Policy Project, as part of a study of the gap between domestic energy production and domestic energy consumption, developed three alternative energy futures through the year 2000: Historical Growth, Technical Fix, and Zero Growth (ZEG). Policies which would be necessary to sustain high energy growth (the situation under the Historical Growth scenario) are: governmental efforts to promote high demand; subsidizing the energy industry to keep prices low; Federal resources available for widespread development; encouragement of rapid Gross National Product growth; capital available to finance new energy systems; and a major supply-oriented research and development program. The more flexible Technical Fixes might be applied to a few key areas: space heating; more use of waste heat from powerplants; improved auto fuel economy; use of solar energy for space conditioning and water heating where economical; and increased recycling of metals and energy intensive products and use of energy from municipal wastes. The Nation should consider moving toward ZEG because: Technical Fix only buys time; the capacity of the earth is finite; resources will be needed in the future; our societies will have serious problems in a resource-short world; and citizens may want a different kind of America. (QM)

172

Reliable Contract Sales Data Needed for Projecting Amounts of Natural Gas That Could Be Deregulated. RED-76-11; B-178205. September 8, 1975. 19 pp. + 3 appendices (10 pp.).
Report to Sen. Henry M. Jackson; Rep. John E. Moss; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission.
Authority: Natural Gas Act of 1938 (15 U.S.C. 717). F.P.C. v. Texaco, 377 U.S. 33 (1964). Phillips Petroleum Company v. Wisconsin (U.S., 1954). 18 C.F.R. 154.93.

Computed volumes of gas that will be released from expiring contracts from 1975 to 1985, and which therefore will potentially be available at deregulated prices, range from about 29 trillion cubic feet (TCF) to 7.7 TCF, depending on assumptions concerning the rate of gas flow over the periods in which it is economically recoverable. ***Findings/Conclusions:*** Many sales contracts between producers and interstate pipeline companies contain indefinite pricing clauses which may affect the amount of gas released from price controls if deregulation occurs. The reliability of the 1972 gas contract sales data used to study the deregulation effects was questionable because the Federal Power Commission (FPC) performed only limited verification to determine that the data were complete and accurate. ***Recommendations:*** The Chairman of the FPC should institute procedures aimed at keeping FPC apprised of the status of gas flowing under contracts subject to its jurisdiction. FPC should, to the extent possible, use data regularly supplied, such as gas sales volumes data, and data received pursuant to the August 1973 FPC order which required producers to provide sales data under their contracts with interstate pipelines and other contract data. If available data are inadequate, FPC should consider requesting the additional data needed to form a base which could then be periodically updated. FPC should institute procedures to independently verify, at least on a sample basis, that the data received are complete, accurate, and reliable. (Author/SC)

173

[***Amendment of the Federal Energy Administration Act of 1974 and the Extension of Its Expiration Date***]. B-181254. September 30, 1975. 2 pp.

Letter to James T. Lynn, Director, Office of Management and Budget; by Robert F. Keller, Deputy Comptroller General.

Organization Concerned: Federal Energy Administration.
Authority: Federal Energy Administration Act of 1974 (P.L. 93-275).

174

Southeastern Federal Power Program–Financial Management and Program Operations. RED-76-47; B-125032. January 2, 1976. 54 pp. + attachments (24 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission; Department of the Interior; Southeastern Power Administration; Department of the Army: Corps of Engineers; Department of the Army: Army Audit Agency.
Congressional Relevance: Congress.
Authority: Federal Power Act, § 10(f) (16 U.S.C. 803(f)). Anti-Deficiency Act (31 U.S.C. 665). Flood Control Act of 1944 (16 U.S.C. 825s).

The Southeastern Federal Power Program (SFPP) had assets of about $862 million at June 30, 1974, and power revenues of about $41 million for fiscal year 1974. Net power revenues have increased in recent years. *Findings/Conclusions:* The following problems in operating projects may have an adverse effect on future financial results: important rehabilitation requirements; delays and cost increases in constructing projects; delays in determining and collecting headwater benefits; delays in firming up cost allocations of total project costs; adverse environmental effects; and hazardous operating conditions. Before marketing arrangements can be completed for four new SFPP projects, several problems must be resolved. The Army Corps of Engineers (Corps) and the Southeastern Power Administration (SEPA) have taken actions to increase power generation from existing projects. The Corps and the Federal Energy Administration (FEA) have identified 14 hydroelectric projects which might be expanded or constructed. SEPA had repaid $155 million of the estimated $687 million Federal power investment through fiscal year 1974. The Corps Savannah District violated the Anti-Deficiency Act because it incurred obligations in excess of appropriation allotments. The Army Audit Agency has not made financial audits of the Corps accounting offices involved in SFPP since 1966. *Recommendations:* The Department of the Interior should issue uniform methods and guidelines for preparing rate and repayment studies used for determining the revenue levels needed in formulating wholesale power rates. The Army should report the violation of the Corps Savannah District and the actions taken to the President and the Congress. The Army Audit Agency should schedule periodic audits of the Corps accounting offices. (Author/QM)

175

Future Energy Demand. February 17, 1976. 11 pp.
Speech before New York Society of Security Analysis; by Monte Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Department of the Interior; Federal Energy Administration; Federal Power Commission.
Authority: Energy Policy and Conservation Act.

The Energy Policy Project projected three alternate energy futures through the year 2000: Historical Growth; Technical Fix; and Zero Growth (ZEG). With the Historical Growth scenario, total energy consumption is assumed to grow at 3.4% per year. There would be very serious environmental and supply and capital problems with this approach. Under the Technical Fix scenario, total United States energy would grow at about 1.8% per year. There would be much more emphasis on more efficient use of energy. The ZEG scenario would involve only a few substantial changes in how we live. Total energy consumption would stabilize at about 1.3 times present consumption rates. There would also be more emphasis on: mass transit; new communities having integrated utility systems; industrial parks; and encouragement of movement towards a service economy. The Nation should move toward Technical Fix or ZEG. Even with deregulation of the price of natural gas, natural gas production is likely to continue its decline. Deregulation could, however, slow and possibly arrest the rate of decline. Without it, production would decline even more steeply. The Energy Policy and Conservation Act gives GAO new responsibility in the energy data verification area and the authority to inspect the books and records of energy companies. (Author/QM)

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The Energy Information Act, S. 1864. March 9, 1976. 13 pp. + 5 enclosures.
Testimony before the Senate Committee on Interior and Insular Affairs; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Atomic Energy Commission; Department of Commerce; Department of the Interior; Energy Research and Development Administration; Federal Energy Administration; Federal Power Commission; Federal Trade Commission; Nuclear Regulatory Commission; Office of Management and Budget.
Congressional Relevance: *Senate* Committee on Interior and Insular Affairs.
Authority: Energy Information Act; S. 1864 (94th Cong.). Trans-Alaskan Pipeline Act, § 409 (P.L. 93-153). Federal Energy Administration Act of 1974 (P.L. 93-275). Energy Policy and Conservation Act (P.L. 94-163).

Eighteen energy-related bills have been enacted into law since 1974. In general, the legislation gave the Federal Energy Administration (FEA) significant data collection responsibilities and established it as a focal point for Federal energy data. The best long-term organizational approach to the solution of energy problems including energy data collection problems would be the establishment of a Department of Energy and Natural Resources. Alternatives for improving data collection which should be considered are: building on the capability already existing in FEA by expanding that agency's energy data role and assuring the independence and objectivity of its data collection activities; or creating a separate agency for energy information either within the executive branch or in the form envisioned by the Energy Information Act. The new bill would transfer responsibility for energy forms clearance to the new agency. A better alternative to this would be to transfer all forms clearance responsibility presently vested in GAO and the Office of Management and Budget with the added requirement that requests for energy data be coordinated through the Administration or FEA. Section 301 of the bill should be revised to require a one-time study by the Department of the Interior of energy resources on Federal lands and annual updating of information concerning recoverable reserves. (Author/QM)

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GAO's Energy Role. March 16, 1976. 15 pp.
Speech before Society of Petroleum Engineers of the American Institute of Mining Engineers; by Monte Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Federal Energy Administration; Department of the Interior; Federal Power Commission.
Authority: Energy Policy and Conservation Act (P.L. 94-163). Federal Energy Administration Act, § 12 (15 U.S.C. 771).

Some of GAO's projects for identifying and investigating energy problems include: (1) a review of the Federal Energy Administration's (FEA's) efforts to decrease the use of oil and gas in powerplants and fuel burning installations; (2) a survey of Federal efforts to develop and introduce emerging alternative fuel sources with emphasis on alcohol fuels; (3) a review of the effectiveness of Federal voluntary energy conservation programs; (4) reviews of the Department of the Interior's Outer Continental Shelf leasing program; and (5) a review of Interior's coal leasing program. Deregulation of natural gas prices is not likely to have discernible consequences for the

Nation's economy. Costs to consumers under continued regulation would continue to increase because of price rises within the regulatory framework and because consumers who could no longer buy natural gas would purchase substitute fuels at higher prices. Deregulation requires a political judgment based on a careful weighing of the tradeoffs involved in alternative courses of action. The Energy Policy and Conservation Act gives GAO authority to inspect the books and records of private persons and companies. As long as the Federal Government continues to control oil and gas prices and the energy industry continues to oppose the controls, the Congress will continually be raising questions concerning oil and gas prices which GAO must help answer. (QM)

178

Review of the 1974 Project Independence Evaluation System. OPA-76-20; B-178205. April 21, 1976. 49 pp. + appendices (9 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: Congress.

The 1974 Project Independence Evaluation System was a set of interrelated models developed to represent the U.S. energy system. This major effort involved many Government employees and energy experts outside the Government under the overall direction of the Federal Energy Administration (FEA) *Findings/Conclusions:* The 1974 Project Independence Evaluation System was a valuable attempt to provide an integrated framework for evaluating energy policy. FEA developed an innovative framework for analyzing the complex and interdependent sectors of the U.S. energy system. Nevertheless, it requires corrective action in order to approach its full usefulness and to assure that the results from subsequent versions will be reliable. *Recommendations:* FEA should add to its plan: an analysis of problems resulting from the static nature of the system and the procedures which can be used to alleviate them; an analysis of the limitations in the environmental impact analysis and the procedures which can be applied to correct them; and a comprehensive, well-documented verification, validation, and sensitivity testing effort. In implementing the plan, priority should be given to the following areas: the methodological approach used to estimate energy supply, in particular crude oil and natural gas; the energy demand estimation technique regarding calculating energy price elasticities; the representation of the relationship between the energy system and the economy; and a more thorough assessment of the economic, environmental, and international impacts of alternative U.S. energy policies. (Author/QM)

179

A Bill to Extend the Federal Energy Administration Act of 1974. April 26, 1976. 18 pp. + attachments (17 pp.).
Testimony before the Senate Committee on Government Operations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration; Energy Research and Development Administration; Federal Power Commission; Energy Resources Council.
Congressional Relevance: *Senate* Committee on Government Operations.
Authority: Federal Energy Administration Act of 1974; S. 2872 (94th Cong.). Energy Policy and Conservation Act.

The best long-term organizational approach to the solution of energy problems is to establish a Department of Energy and Natural Resources. For the time being, a desirable division of the Federal Energy Administration's (FEA's) responsibilities would be to separate FEA's policy, planning and program development activities from its regulatory activities, combining the two functions with related functions of other energy agencies. FEA and the Energy Research and Development Administration's policy responsibilities should be combined into a new National Energy Administration. There should also be a consolidation of Federal energy regulatory responsibilities. Many basic problems of energy data persist. New energy data collection efforts by FEA for the most part have been piled on top of old efforts and efforts for improved coordination have yet to show much success. A statutory requirement should be imposed on FEA to report annually to the Congress on current national energy conservation activities and Federal plans and needs in the conservation area for the upcoming year. FEA still needs to strengthen its compliance and enforcement program. FEA should take a leadership role in collecting coal export information and develop a plan for more effectively utilizing its regional office personnel as well as State and local energy personnel. (QM)

180

Review of the Information-Gathering Practices of the Federal Energy Administration. OSP-76-18; B-181254. May 11, 1976. 19 pp. + 3 appendices (9 pp.).
Report to Frank G. Zarb, Administrator, Federal Energy Administration; by Monte Canfield, Jr., Director, Office of Special Programs.

Authority: Trans-Alaska Authorization Act, § 409 (P.L. 93-153).

Because of the large number of new information-gathering requirements generated since its establishment, the Federal Energy Administration (FEA) was selected as one of the initial agencies to be studied in a long-term program for the evaluation of the management processes used in developing information-gathering requirements. *Findings/Conclusions:* FEA had not applied the degree of effort warranted in assessing the need and definition of data requirements. Many of FEA's collection efforts do not completely fulfill the stated need. FEA generally does not contact potential respondents during the early stages of the development cycle. Several requirements duplicate information collected by other organizations. In assessing burden, little attention is given to the impact of the proposal upon the respondents. While FEA has pretested several requirements before submitting them to GAO for clearance and subsequent full-scale implementation, it has not adopted field testing on a full-scale basis. FEA does not perform any periodic assessments; however, three ad hoc reviews have demonstrated the need for such an effort. There is an apparent lack of adequate authority in FEA's clearance review function. *Recommendations:* FEA should: more actively contact the various involved congressional organizations during the development process to insure development of requirements which will fulfill their needs; increase its efforts to contact other organizations and agencies during the development process; issue procedures requiring field testing of proposals when warranted; institute a continuous program of evaluating the information-gathering process and data usage; review and revise the procedures and placement of the clearance organization; and take steps to insure that the regional offices obtain official approval before soliciting information from 10 or more parties. Action should be taken to change the following basic beliefs: the need for information overrides the burden of the respondents in providing that information; it is better to obtain information directly from respondents than use information from existing reports; and it takes too long for Federal agencies to work and design information-gathering efforts of mutual interest. (Author/QM)

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[*Federal Energy Administration Personnel Turnover Rates*]. OSP-76-23; B-178205. May 24, 1976. 1 pp. + 3 enclosures (3 pp.).
Report to Sen. Patrick J. Leahy; by Monte Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Federal Energy Administration.
Congressional Relevance: *Sen.* Patrick J. Leahy.

Personnel payroll records for calendar year 1975 were examined and officials were interviewed at Federal Energy Administration (FEA) headquarters in Washington, D.C. *Findings/Conclusions:* Personnel turnover rates for calendar year 1975 at FEA headquarters and in its 10 regional offices were 39.4% and 37.6%, respectively. The overall agency turnover rate was 38.6%. All personnel, including 145 consultants, experts, summer aides, and student assistants, terminat-

ing FEA employment during 1975 were counted as separations. (Author/QM)

182

Improvements Still Needed in Federal Energy Data Collection, Analysis, and Reporting. OSP-76-21; B-178205. June 15, 1976. 13 pp. + 5 attachments (32 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration; Federal Power Commission; Department of Commerce; Bureau of Mines; Geological Survey; Department of the Interior; Atomic Energy Commission.
Congressional Relevance: *Senate* Committee on Interior and Insular Affairs; Congress.
Authority: Energy Information Act; S. 1864 (94th Cong.). Trans-Alaskan Pipeline Act (P.L. 93-153). Federal Energy Administration Act of 1974 (P.L. 93-275). Energy Policy and Conservation Act (P.L. 94-163). Energy Supply and Environmental Coordination Act. P.L. 93-319. 13 U.S.C. 9. 31 U.S.C. 43b. 44 U.S.C. 3512.

An earlier GAO report concluded that legislation would be required to establish a comprehensive energy data system and that development of that system should be placed where it would not be influenced by energy policy analysis and formulation. ***Findings/Conclusions:*** Many basic problems have not been resolved, yet the volume of energy and energy-related data has grown tremendously. Except for certain congressionally mandated Federal Energy Administration efforts, Federal agencies generally continue to design information requests to fit their individual needs, and efforts for improved coordination have shown limited success. ***Recommendations:*** The best long-term organizational approach to the solution of energy problems, including energy data collection problems, would be the establishment of a Department of Energy and Natural Resources. A separate bureau of energy data collection could be insulated within that department, perhaps by enacting explicit statutory provisions insuring independence and objectivity. In the interim, an organizational alternative which should be considered is to build on the capability already existing in the Federal Energy Administration by expanding that agency's energy data role and insuring the independence and objectivity of its data collection activities. The agency already has a legislative mandate to act as a focal point for energy data collection and, as such, would be a logical choice to assume greater control over Federal energy data activities. Another alternative that deserves attention would be the establishment of a separate new agency for energy information, such as that envisioned in the Energy Information Act. (Author/QM)

183

[*Review of the Federal Energy Administration's Advisory Committees*]. EMD-76-5; B-178205. August 2, 1976. 11 pp.
Report to Frank G. Zarb, Administrator, Federal Energy Administration; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Authority: Federal Energy Administration Act of 1974 (P.L. 93-275). Federal Advisory Committee Act of 1972 (P.L. 92-463). Energy Policy and Conservation Act (P.L. 94-163).

Because many energy decisions of the Federal Energy Administration (FEA) affect customers, environmentalists, industry, State and local governments, and State regulatory utility commissions, it is essential that FEA receive and consider input from representatives of these groups before making energy policy decisions. FEA receives this input through the establishment of advisory committees. As of February 1976, FEA had 14 advisory committees with a total of 374 members. ***Findings/Conclusions:*** Except for establishing final uniform guidelines, FEA advisory committees were functioning according to requirements. Some major energy issues within the committees' scope had not been discussed, FEA had not given adequate consideration to committee recommendations, and FEA had not informed the committees on action planned in response to recommendations. More than half of the committee members considered their committee to be ineffective or only marginally effective. Unless a committee's authority is carefully defined by FEA, the members may not know whether they are responsible for making a recommendation, issuing a report, or merely providing inconclusive deliberation. ***Recommendations:*** FEA should: when appropriate, refer all important energy issues confronting the agency to the respective advisory committee before making an agency decision on the issue; clearly indicate to the respective advisory committee the items or subissues of each issue for which FEA seeks advice and outline the type of committee action which would most assist FEA; on a timely basis, inform advisory committees of FEA actions planned in response to the committees' recommendations; and complete uniform guidelines and management controls for its advisory committees.

184

Status of the Grand Coulee-Raver Transmission Line Project. PSAD-76-167; B-114858. August 18, 1976. 16 pp. + appendices (4 pp.).
Report to the Congress; by Elmer B Staats, Comptroller General.

Organization Concerned: Department of the Interior; Bonneville Power Administration.
Congressional Relevance: Congress.

The Grand Coulee-Raver electrical transmission line was the first high-capacity 500-kilovolt double-circuit line constructed by the Bonneville Power Administration. The project was undertaken to serve growing needs for power and assure reliable service in the Puget Sound area of the State of Washington. ***Findings/Conclusions:*** A $48.6 million cost growth in the project was caused primarily by changes in the scope of the work, escalation in the price of material, and increased construction contract costs. The most recent cost estimate excluded $1.2 million for materials and equipment available from projects and $11.7 million for related equipment provided by the Bureau of Reclamation. If the construction of other planned power generation facilities in the area is delayed or eliminated, additional capacity across the Cascade Mountains will be required sooner. The cost to upgrade the capability of the Grand Coulee-Raver line from 2,800 to 5,000 megawatts is estimated at $14.8 million. After the Bonneville Power Administration had redesigned portions of the towers, it was found that they had not been tested at the ultimate design load. ***Recommendations:*** The Bonneville Power Administration's cost estimates provided to the Congress in the future should identify all related project costs. Future transmission tower test programs should provide for testing redesigned items to assure that the ultimate design load can be obtained. (Author/QM)

185

[*The Federal Income Taxes of Class A and B Electric Utilities*]. EMD-76-7; B-180228. August 27, 1976. 3 pp.
Report to Sen. Lee Metcalf, Chairman, Senate Committee on Government Operations: Reports, Accounting and Management Subcommittee; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Federal Power Commission; Internal Revenue Service.
Congressional Relevance: *Senate* Committee on Government Operations: Reports, Accounting and Management Subcommittee.
Authority: S. 2213 (94th Cong.).

According to the Internal Revenue Service (IRS), electric utility companies are generally taxed like other corporations, and the various types of audit adjustments made to the income tax returns of utility companies may also be made to the income tax returns of other corporations. ***Findings/Conclusions:*** Of the 214 electric utility companies under Federal Power Commission (FPC) jurisdiction for which IRS provided income tax data, the tax liability or the amount of tax paid for 10 utility companies could not be determined because their income tax data were integrated with tax data of unregulated industries. The other 204 utility companies paid Federal income taxes of about $792 million in 1972, $798 million in 1973,

and $578 million in 1974. In only about one-third of the individual cases do the figures reported to FPC and to IRS over the 3-year period come within 10% of each other. Some differences were caused by the differences in FPC and IRS reporting requirements. There may be significant differences in the tax data as supplied by FPC or IRS and the tax liability used to justify the rates consumers must pay. Fluctuations in the sales volumes and cost of service as well as various tax statutes cause the actual taxes and the tax liability used for rate justification to vary. (Author/QB)

186

The Changing Role of the General Accounting Office in Energy Information and Data Programs. September 8, 1976. 19 pp.
Speech before Twelfth Annual Institute on Oil and Gas Accounting, Southwestern Legal Foundation, Dallas, TX; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Federal Energy Administration; Energy Research and Development Administration; Federal Power Commission.
Authority: Federal Energy Administration Act of 1974. Energy Conservation and Production Act of 1976. Energy Policy and Conservation Act of 1975.

GAO's first major study of energy data programs (April 1973) addressed the magnitude of the Federal energy data effort, identified and discussed several problem areas regarding the Federal Government's capability for collecting and analyzing energy data, and discussed executive and legislative proposals to improve energy data collection and analysis. The best long-term organizational approach to the solution of energy problems, including energy data collection problems, would be the establishment of a Department of Energy and Natural Resources. The Energy Conservation and Production Act places several specific requirements on GAO, including that GAO review and evaluate the effectiveness of energy conservation and renewable resource programs and provide an annual report to the Congress on Federal Energy Administration activities. The Energy Policy and Conservation Act authorized GAO to independently verify energy data and, to that end, inspect the books and records of private persons and companies under certain conditions. GAO has about 90 energy studies underway or planned. Of these, 27 were initiated as a result of congressional requests and the remainder were undertaken on GAO's own initiative. (QM)

187

The Coastal Zone Management Program: An Uncertain Future. GGD-76-107; B-145099. December 10, 1976. 115 pp.
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of Commerce; National Oceanic and Atmospheric Administration.
Congressional Relevance: *House* Committee on Merchant Marine and Fisheries; *Senate* Committee on Commerce; *Senate* Committee on Appropriations: State, Justice, Commerce, The Judiciary Subcommittee; Congress.
Authority: Coastal Zone Management Act of 1972, (P.L. 92-583).

An assessment was made of progress under the Coastal Zone Management Act of 1972 by the National Oceanic and Atmospheric Administration (NOAA) and the coastal states and territories. The Act provides for incentives to States including grants administered by NOAA for the wise use of coastal resources. ***Findings/Conclusions:*** Although some progress has been made, many problems have developed in implementation by the States and coordination with Federal agencies. There has been a lack of understanding of State problems, weaknesses in monitoring procedures, and conflicting policies between State and Federal agencies. Some problems in funding and implementation have resulted from lack of public support. ***Recommendations:*** States should be helped to develop authority and involve the public in program development. Federal agencies should be kept informed at early stages. Information should be coordinated among the States and technical information assistance should be expanded. (HTW)

188

Information-Gathering Activities of the Nuclear Regulatory Commission. ACGRR-77-3; B-180225. December 28, 1976. 7 pp.
Report to Marcus A. Rowden, Chairman, Nuclear Regulatory Commission; by Phillip S. Hughes, Assistant Comptroller General.

The effectiveness of the Nuclear Regulatory Commission's (NRC) information-gathering program could be improved. ***Findings/Conclusions:*** The NRC has several procedures that contribute to effective information gathering, but the program operates informally and problems can occur in the absence of management controls. ***Recommendations:*** The NRC should: (1) establish a formal data collection program that designates duties and responsibilities of the offices and bureaus involved in the acquisition process and incorporates the critical management controls; (2) place the information clearance function at an organizational level where it can make final, independent decisions, and (3) appoint information clearance representatives in the offices and bureaus which initiate requirements to act as liaison with the information clearance officer. (DJM)

189

Survey of Publications on Exploration, Development and Delivery of Alaskan Oil Market. EMD-77-11; B-174944. January 14, 1977. ***Released*** January 17, 1977. 40 pp.
Report to Sen. Henry M. Jackson, Chairman, Senate Committee on Interior and Insular Affairs; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Federal Energy Administration; Alyeska Pipeline Service Co.; Atlantic Richfield Co.; Standard Oil Co., Inc.
Congressional Relevance: *Senate* Committee on Interior and Insular Affairs.
Authority: Mineral Leasing Act of 1920 (P.L. 93-153). National Environmental Policy Act of 1969. Alaskan Vessel Traffic Regulation Act of 1977. Trans-Alaska Pipeline System Authorization Act of 1973.

Information was gathered from more than 100 publications on the feasibility, advisability, and building and operation of the Trans-Alaska Pipeline System. ***Findings/Conclusions:*** The existence of oil in Alaska has been known since about 1902. It is in a sandstone formation under heavy permafrost layer, near Prudhoe Bay and is the high-sulfur, heavy crude type. Leasing began in 1969, after which the lessees divided the area in half. Estimated initial production will be 1,200,000 barrels a day by 1978 and development expenditures are estimated to be $2,430 million by 1979. The need for the pipeline was first evaluated in 1963 and construction finally permitted in 1973, after proper legislation was enacted and conservation group injunctions ruled upon. The pipeline extends 801 miles from Prudhoe Bay to Valdez, across several mountain ranges and land of varying degrees of stability. The pipeline has safety valves to guard against oil leaks, and special construction techniques and materials were used because of the ground and temperature conditions. Continual monitoring of the pipeline will be maintained by a computer in Valdez and a microwave communications system. Completion is expected in 1977, at an estimated cost of $7.7 billion. Three long range distribution systems are being considered and one short term system. (shipping through the Panama Canal). The long-range plans are trans-provincial, northern tier, and Sohio mid-continent. Foreign sales require Presidential and Congressional approval. There appears to be an adequate domestic tonnage supply for marine transportation. The ICC has regulatory jurisdiction. (SS)

190

America's Energy Futures. January 19, 1977. 17 pp.
Speech before Brookings Conference, Williamsburg, VA; by Monte Canfield, Jr., Director, energy and Minerals Division.

Organization Concerned: Ford Foundation.

The basic energy choices available to the United States depend on energy conservation. Total U.S. energy consumption more than doubled between 1950 and 1973. The Energy Policy Project (EPP) has concluded that the central energy problem in the next 25 years will not be the lack of energy resources per se, but the large potential for rapid growth in energy consumption. People want a reliable supply of energy at the lowest total cost to society that is standardized regionally and economically and as safe and as free as possible from international problems. These desires can be achieved by the market or by government intervention. In several years there will be no new major source of energy, no major rebuilding, and no major new transportation systems. Three energy scenarios can be considered: the Historical Growth scenario by which total energy consumption is assumed to grow at 3.4% per year and requiring technological and expenditure increases that may be impossible to achieve; the Technical Fix scenario by which U.S. energy consumption would increase 1.8% yearly; and Zero Growth by which consumption would stabilize at about 1.2 times present rates. Technical Fix provides both more time and more flexibility than Historical Growth and requires less capital. The U.S. should move toward Zero Growth, parallelling Technical Fix until the mid-1980's to allow for lead time problems. (QM)

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National Energy Policy: An Agenda for Analysis. EMD-77-16; B-178205. January 27, 1977. 56 pp.
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Nuclear Regulatory Commission; Federal Power Commission; Federal Energy Administration; Department of the Interior.
Congressional Relevance: Congress.
Authority: Federal Energy Administration Act. Energy Supply and Environmental Coordination Act. Geothermal Energy Research, Development, and Demonstration Act. Solar Heating and Cooling Act. Solar Energy Research, Development, and Demonstration Act. Energy Reorganization Act. Nonnuclear Energy Research and Development Act of 1974.

An assessment of national energy problems dealt with the urgency for new policies to avoid the heavy reliance on energy imports. The critical issues identified were the need for energy conservation, problems of nuclear fission, future reliance on fossil fuels, especially coal, and possibilities of alternate sources. Questions were posed about the role of the Federal government in wise management of energy resources, including those on public lands. These issues were analyzed from the points of view of past and current performance and plans for future emphasis. ***Findings/Conclusions:*** There is need for conservation during the next 10 years, consolidation of Federal agencies dealing with energy, and wise management of energy resources on public lands balanced by environmental considerations. Energy efforts will require coordination of all branches of the Government, industry, and citizens. (HTW)

192

Ways to Strengthen Congressional Control of Energy Construction Projects Other Than Nuclear. EMD-77-25; B-178726. February 25, 1977. ***Released*** March 10, 1977. 3 pp. + enclosures (21 pp.).
Report to Sen. Henry M. Jackson, Chairman, Senate Committee on Energy and Natural Resources; Rep. Olin E. Teague, Chairman, House Committee on Science and Technology; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *House* Committee on Science and Technology; *Senate* Committee on Energy and Natural Resources.
Authority: Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577).

The Energy Research and Development Administration's (ERDA) budgeting, accounting, and reporting procedures associated with construction-related activities for nonnuclear energy research and development projects were reviewed. The purpose of the review was to determine the extent to which existing legislative reporting requirements provide Congressional committees with information necessary for effective control over the funding of such projects. Of particular interest was ERDA's compliance with the reporting and specific authorization requirements of the Federal Nonnuclear Energy Research and Development Act of 1974. ***Findings/Conclusions:*** These requirements are inadequate because they are vague and allow selective interpretation, thus limiting the ability of Congress to control nonnuclear energy projects. ERDA has not established any specific criteria for use in identifying the types of nonnuclear energy projects subject to the reporting or specific authorization requirements. The 1974 act is not clear about which type of projects must be reported or specifically authorized. Nowhere in the act are types of projects specifically defined. ***Recommendations:*** ERDA should develop legislation which would clarify the act on the types of projects requiring reports or specific authorizations. ERDA should develop and provide the authorization committees with its definitions of the various project phases together with an identification of the phase of each nonnuclear energy project meeting the minimum cost criteria for reports or specific authorization. (RRS)

193

Energy Policy Decisionmaking, Organization, and National Energy Goals. EMD-77-31; B-178205. March 24, 1977. 45 pp.
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration; Federal Power Commission; Department of the Interior; Energy Research and Development Administration; Professional Audit Review Team.
Congressional Relevance: *House* Committee on Government Operations; *Senate* Committee on Governmental Affairs.
Authority: Omnibus Energy and Natural Resources Reorganization Act of 1977; S. 591 (95th Cong.). Department of Energy Organization Act; S. 826 (95th Cong.). Federal Coal Leasing Amendments Act of 1975 (P.L. 94-377). Energy Policy and Conservation Act; S. 27 (94th Cong.); S. 2726 (94th Cong.).

Energy functions are divided among several agencies with responsibilities in the areas of energy conservation, development of nonrenewable energy resources, and energy price regulation. ***Findings/Conclusions:*** In each of these areas, there are needs for better coordination among agencies and for a system of priorities. Energy conservation has not received adequate emphasis because of lack of public concern and insufficient incentives and funding. Programs for development of nonrenewable energy resources were lacking in production goals, estimates of future needs, and effective mechanisms for commercialization of technology. In reference to price regulation, it was felt that prices were too low to encourage energy conservation, and that regulation discouraged energy development. Reorganization of energy functions under a single Federal agency as proposed by the Administration would improve the decisionmaking process.
Recommendations: Congress should enact legislation to establish a Department of Energy with responsibilities for setting goals for automobile fuel economy and energy production planning. The legislation should call for continuation of the Professional Audit Review Team, establish coordination with other agencies, and reaffirm GAO's monitoring role. Congress should also examine energy regulatory functions. (HTW)

194

Energy Reorganization Legislation. March 25, 1977. 18 pp. + enclosure.
Testimony before the Senate Committee on Governmental Affairs; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration; Professional Audit Review Team.
Congressional Relevance: *Senate* Committee on Governmental Affairs.
Authority: Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 801). S. 591 (95th Cong.). S. 826 (95th Cong.).

Of the various remedies that are available to close the gaps in the energy decisionmaking process, the recommended remedy is to create a Department of Energy and Natural Resources (DENR). The creation of a separate administration having statutory jurisdiction for energy data is advisable. Congress should utilize the Professional Audit Review Team (PART) in order to gather vital information on energy data. The proposed DENR should have the responsibility for automobile fuel economy standards and energy conservation performance standards. An energy health and safety regulatory organization will be needed, which will be either completely independent of the DENR or, if included within the Department, will be carefully insulated from its promotional activities. A clarification of the administration's proposed treatment of the relationship between Federal land management policy and energy policy would be helpful. A high-level council, headed by the Secretary of the DENR, should be formed to coordinate all Federal activities related to energy. The General Accounting Office should carefully monitor the activities of the DENR to provide Congress with information for assessing its performance. (LDM)

WHAT ARE THE PROSPECTS FOR TRANSITION TO ESSENTIALLY RENEWABLE ENERGY RESOURCES (GEOTHERMAL, SOLAR, FUSION)?

195

Management of the Atomic Energy Commission's Controlled Thermonuclear Research Program. B-159687. December 8, 1972. 43 pp. + 2 appendices (3 pp.).
Report to Sen. John O. Pastore, Chairman, Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission.
Congressional Relevance: *Joint* Committee on Atomic Energy.

From fiscal year 1951 through 1972, the Atomic Energy Commission (AEC) incurred costs of about $449 million in the Controlled Thermonuclear Research (CTR) program. The program was conducted under research contracts at AEC-owned, contractor-operated laboratories and at universities and other institutions. The overall objective of the program is to develop a major source of energy from controlled thermonuclear fusion. ***Findings/Conclusions:*** AEC has established mechanisms to control and coordinate efforts of contractors responsible for conducting the program, including: reviews by the standing committee and ad hoc technical panels related to ongoing and planned program efforts; establishment of research priorities; and technical evaluations of research proposals submitted by universities and other institutions. ***Recommendations:*** In establishing research priorities, it would be useful if AEC would document and communicate to CTR laboratories and AEC field offices rules pertaining to CTR devices which require AEC's review and approval before fabrication. AEC should also require, as part of this rule, that any proposed device which is a revision or modification of a previously disapproved device, regardless of the estimated cost of the revised device, be subject to AEC's review and approval before fabrication. (Author/QM)

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[*Comments on H.R. 11212, 93rd Congress, a Bill to Further Research, Development, and Commercial Demonstrations in Geothermal Energy*] . B-178726. April 19, 1974. 3 pp.
Letter to Rep. Olin E. Teaque, Chairman, House Committee on Science and Technology; by Robert F. Keller, Deputy Comptroller General.

Organization Concerned: National Science Foundation; National Aeronautics and Space Administration.
Congressional Relevance: *House* Committee on Science and Technology.
Authority: National Science Foundation Act of 1950, § 3-4 (42 U.S.C. 1862). National Aeronautics and Space Act of 1958, § 203 (42 U.S.C. 2473). H.R. 11212 (93rd Cong.).

197

Review of Selected Federal and Private Solar Energy Activities. B-178726. June 18, 1974. 23 pp. + 9 appendices (16 pp.).
Report to Rep. Mike McCormack, Chairman, House Committee on Science and Technology: Energy Research, Development and Demonstration Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: National Science Foundation.
Congressional Relevance: *House* Committee on Science and Technology: Energy Research, Development and Demonstration Subcommittee.

A review of solar energy activities focused on Federal funding, objectives of Federal activities, interagency coordination, private sector activities, and economic evaluations. ***Findings/Conclusions:*** Federal funding for solar energy research, development, and demonstration activities has increased each year since 1970, with solar heating and cooling getting most of this support. The $50 million 1975 solar energy budget included $17 million for heating and cooling. The National Science Foundation was designated in 1973 as the prime agency in Federal support of research on terrestrial applications of solar power. The Foundation has coordinated the various Federal activities through several means, including the formulation of a Federal solar heating and cooling program and an Interagency Panel for Terrestrial Applications of Solar Energy. Considerable private sector interest exists, ranging from individuals who use solar systems in their homes to some 70 organizations working in the field. The future economic feasibility of solar heating and cooling is still problematical. Two key cost factors are the costs of conventional fuel and solar collectors. (Author/DJM)

198

How Solar Energy Was Treated in the AEC Chairman's Report, "The Nation's Energy Future". B-178205. October 18, 1974. 27 pp. + 4 appendices (8 pp.).
Report to Sen. James Abourezk; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission.
Congressional Relevance: *Sen.* James Abourezk.
Authority: Environmental Policy Act of 1969 (42 U.S.C. 4332).

In response to a Presidential request, the Atomic Energy Commission (AEC) reviewed Federal and private energy research and development. GAO reviewed the means for arriving at recommendations on solar energy in the AEC report and the public availability of recommendations of the solar energy review panel. ***Findings/Conclusions:*** The Energy Reorganization Unit (ERU), established by AEC, coordinated the following three efforts to develop the research and development program: (1) Cornell University brought together authorities from industry, the academic community, and Government to develop policy and study topics of importance to the program; (2) 16 panels of Federal officials assisted by private consultants reviewed proposals and developed a 5-year program at three alternative funding levels; and (3) the AEC Chairman appointed an over-

view panel of eight Government officials to pull together the Cornell effort and recommendations of the 16 panels and to recommend a 5-year, $10 billion program. The overview panel made major reductions in funding levels recommended by the 16 review panels to develop the $10 billion program, and reduced funding recommendations of the solar energy review panel because of its judgment that solar energy was basically long-term and that recommendations were not justified. The public might have had access to recommendations through environmental impact statements, the public document room, and the Technical Information Center, but this was not readily attainable at the earliest practicable time. (HTW)

199

Problems in Identifying, Developing, and Using Geothermal Resources. RED-75-330; B-178205. March 6, 1975. 59 pp. + 5 appendices (11 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission; Bureau of Land Management; Energy Research and Development Administration; National Aeronautics and Space Administration; National Science Foundation; Geological Survey.
Congressional Relevance: Congress.
Authority: Geothermal Energy Research, Development and Demonstration Act of 1974 (P.L. 93-410). Geothermal Steam Act of 1970 (30 U.S.C. 1001-25). Outer Continental Shelf Lands Act (43 U.S.C. 1331-1343). Colorado River Basin Project Act of 1968 (43 U.S.C. 1501). Energy Reorganization Act of 1974. P.L. 93-438. H. Rept. 93-1301. Reich v. Commissioner of Internal Revenue, 454 F. 2d 1157 (9th Cir. 1972).

Geothermal resources can be used to produce energy, fresh water, and minerals. The Federal budget for fiscal year 1975 requested about $49 million for geothermal exploration, research, and development. ***Findings/Conclusions:*** Estimates of electric power that may be produced from geothermal resources in the United States by 1985 range from 4,000 to 132,000 megawatts. The geothermal leasing program has not proceeded as rapidly as anticipated due partly to the little-known characteristics of the resources and partly to the early state of the technology. The lack of information used in designating lands as known geothermal resource areas is another problem in the leasing program. Designation of lands as geothermal resource areas is often not based on a geological survey. The minimum expenditures required of the lessee in the 10-year primary lease term could be insufficient to cover the cost of drilling one exploratory well, and no minimum expenditures are required in the first five years of the lease. The variety of laws dealing with ownership and control of minerals, gas, and water causes delays in lease issuance. ***Recommendations:*** The Secretary of the Interior should: improve the methods for designating known geothermal resource area by obtaining subsurface data when practicable or analyzing the geology of any area before a value is assigned and it is offered for lease; increase the level of expenditures required of lessees during the primary 10-year lease term and provide more specific requirements as to the minimum developmental actions required during the initial five years of the lease; where ownership of geothermal resources is in dispute, provide for issuing leases with the understanding that all rents, royalties, and bonuses would be held in escrow, pending resolution of the title question; propose legislation to classify geothermal resources in a special class; and propose legislation to clarify the Department's authority for offshore geothermal leasing. (QM)

200

Federal and State Solar Energy Research, Development, and Demonstration Activities. RED-75-376; B-178205. June 10, 1975. 2 pp. + appendix (26 pp.).
Report to Sen. Hubert H. Humphrey, Chairman, Joint Economic Committee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Department of Agriculture; National Aeronautics and Space Administration; National Science Foundation.
Congressional Relevance: *Joint* Economic Committee.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438). Solar Heating and Cooling Demonstration Act of 1974 (P.L. 93-409). Solar Energy Research, Development, and Demonstration Act of 1974 (P.L. 93-473). Federal Non-Nuclear Energy Research and Development Act of 1974 (P.L. 93-577).

Four agencies carry out most of the Federal Government's solar energy research and development activities: Energy Research and Development Administration, National Science Foundation, Department of Agriculture, and National Aeronautics and Space Administration. ***Findings/Conclusions:*** Estimated Federal funding for these agencies for fiscal years (FY) 1975 and 1976 for solar energy research and development was $52.7 million and $78.0 million, respectively. As of April 30, 1975, about $22.1 million of $49.7 million available had been spent or obligated on these activities and the remaining $27.6 million was expected to be obligated by the end of the fiscal year. The major Federal funding emphasis was on solar heating and cooling technology. The executive branch had not issued guidelines on the allocation of funds to avoid duplication; and there were no programs for evaluating or certifying solar energy devices, although efforts in this direction were underway. In addition to Federal Funding, at least five States were funding solar energy projects amounting to about $200,000 for the period July 1, 1974, through April 8, 1975. (HTW)

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Federal Hydroelectric Plants Can Increase Power Sales. CED-76-120; B-125042. July 8, 1976. 24 pp. + appendices (11 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Bonneville Power Administration; Bureau of Reclamation; Southwestern Power Administration; Department of the Interior.
Congressional Relevance: Congress.

Hydroelectric power accounts for about 15% of the Nation's electric-generating capacity of which about 40% is Government-owned. Additional hydroelectric dependable capacity can be made available for sale by changing the methods the Department of the Interior power-marketing agencies use in determining how much capacity can be sold and reassessing the amount of capacity which is held in reserve for contingencies. ***Findings/Conclusions:*** If the power-marketing agencies had plans for purchasing power from other systems during low-water years, the result could be 110 megawatts of additional dependable peaking capacity in two of the Bureau of Reclamation regions. In addition to operating reserves, the Bureau of Reclamation requires that reserves be maintained for maintenance and customer load growth. Power-pooling agreements which state the reserve requirements for its members do not adequately recognize that hydroelectric systems do not break down as often as other forms of power generation. If reserves more realistically represented expected conditions, the Federal reserves could be reduced. The additional capacity thus made available could be sold. ***Recommendations:*** The Secretary of the Interior should have the Federal power-marketing agencies: (1) establish uniform guidelines for determining the Federal power system's generating capability under adverse conditions, recognizing the differences of the various Federal systems; (2) determine the feasibility of establishing dependable capacity based on purchases of power; (3) identify and obtain the modifications required to implement this method, including a provision for enough money to purchase the power needed in low-water years; and (4) sell any additional capacity as dependable based on the results of the above action. The Secretary of the Interior should also require: the Bureau of Reclamation to redetermine the reserve requirements for each power system, considering the benefits derived from pooling arrangements and the elimination of reserves based on load growth and maintenance; and the Federal power-marketing agencies to negotiate for more equitable reserve requirements and to sell the capacity that may become available as a result of redetermining reserve requirements. (Author/QM)

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[*Opportunities to Improve Planning for Solar Energy Research and Development*]. EMD-77-8; B-178205. November 30, 1976. 9 pp.
Report to Robert C. Seamans, Administrator, Energy Research and Development Administration; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Congressional Relevance: *House* Committee on Science and Technology; *Senate* Committee on Interior and Insular Affairs.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438). Solar Heating and Cooling Demonstration Act of 1974 (P.L. 93-409).

The Energy Research and Development Administration's (ERDA) solar research, development, and demonstration program was surveyed to assess the adequacy of the planning process established to meet program goals. *Findings/Conclusions:* ERDA research focuses on seven different solar technologies, for which a number of program plans have been established. However, ERDA's present plans indicate only a ten percent solar contribution to overall energy needs by 2000 A.D. ERDA has not established a formal priority system for allocation to each technology or cost or performance objectives, without which program effectiveness and progress cannot be eva.. .ted. *Recommendations:* ERDA should establish a formal system for setting priorities to allocate limited resources among the different technologies; develop measurable cost and performance objectives, with a companion schedule research, development, and demonstration activities; and establish a system of decision points for evaluating the success of the program in meeting established costs and performance objectives. (DJM)

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[*Management and Funding Aspects of Three Nonnuclear Energy Research, Development, and Demonstration Subprograms*]. EMD-77-24; B-186105. February 25, 1977. *Released* March 7, 1977. 3 pp. + enclosure (22 pp.).
Report to Sen. Frank Church, Chairman, Senate Committee on Energy and Natural Resources: Energy Research and Development Subcommittee; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Energy Research and Development Administration.
Congressional Relevance: *Senate* Committee on Energy and Natural Resources: Energy Research and Development Subcommittee.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438).

Management and funding aspects of three nonnuclear energy research, development, and demonstration subprograms under the Energy Research and Development Administration were examined. The three subprograms were: photovoltaic energy of the solar energy program; direct combustion of the coal program; and hydrothermal technology application of the geothermal energy development program. *Findings/Conclusions:* The extent to which research, development, and demonstration funds were used for management support services among the three subprograms varied. The amounts used for planning and managing were: $1.8 million (5.3%) for solar photovoltaic energy; $5.4 million (9%) for coal direct combustion; and $0.2 million (1.1%) for hydrothermal technology applications. The management support services included: planning subprogram activities, reviewing and evaluating research proposals, and contract and administrative support. Amounts of research, development, and demonstration funds used for planning and management services were not disclosed in the agency's budget justification documents or accounting records. *Recommendations:* ERDA should separately identify in the budget and accounting records each subprogram's research, development, and demonstration funds used for management support services and make the amount of such funds visible in the Agency's annual budget submission to the Congress. (RRS)

204

[*Power Factor Requirements Imposed by Federal Power-Marketing Agencies on their Customers*]. B-114858. March 9, 1977. 9 pp.
Letter to Secretary, Department of the Interior; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Bonneville Power Administration; Bureau of Reclamation; Southwestern Power Administration.

205

Power Production at Federal Dams Could Be Increased by Modernizing Turbines and Generators. EMD-77-22; B-125042. March 16, 1977.- 12 pp.
Report to Secretary, Department of the Interior; Secretary, Department of the Army; Chairman, Tennessee Valley Authority; by J. Dexter Peach (for Monte Canfield, Jr., Director, Energy and Minerals Div.).

Congressional Relevance: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Interior and Insular Affairs.

Existing Federal hydroelectric plants could increase power production by modernizing turbines to increase efficiencies and capacities and by modernizing generators to increase capacities. *Findings/Conclusions:* Increasing hydroelectric power production will increase the Nation's energy supply, displace consumption of nonrenewable fuels by fossil-fuel power plants, reduce pollution, increase Federal revenues, and displace or delay construction of alternate power sources. Detailed analysis at each power plant is needed to determine what modernization improvements might be made and if they would be cost effective. At present, the agencies do not have a system to make sure that opportunities are identified and acted upon. *Recommendations:* The Secretaries of the Interior and the Army and the Chairman of the Board of the Tennessee Valley Authority should: identify opportunities to improve hydropower production through equipment modernization, implement those that are economically justified, and consider making changes before the end of the equipment's useful life; include in the economic analysis the value of oil or coal consumption displaced and, either directly or indirectly, the value of maintenance costs reduced by installing new equipment; include feasible turbine and generator modernization in their overall hydroelectric power expansion plans; and develop systems to make sure that future technological improvements are recognized and considered for implementation in existing systems. (Author/SC)

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[*The Federal Wind Energy Program*]. EMD-77-33; B-178205. March 29, 1977. 6 pp.
Report to Robert W. Fri, Acting Administrator, Energy Research and Development Administration; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: National Science Foundation; National Aeronautics and Space Administration; Department of Agriculture.
Congressional Relevance: *House* Committee on Science and Technology; *Senate* Committee on Energy and Natural Resources.

Under the direction of the Energy Research and Development Administration (ERDA), the National Aeronautics and Space Administration is responsible for developing, testing, and evaluating large wind energy systems, and the Department of Agriculture is responsible for identifying, developing, and testing applications in rural and remote areas. Of the funds specifically designated for small, medium, and large systems from July 1974 through September 1976, more than 82% had been spent on large systems. ERDA's emphasis on these systems has been based on its belief that: well-defined commercial markets exist for large systems but not for small and medium-sized systems; large systems will provide cheaper power

than the small and medium-sized; Federal assistance will be needed by industry to develop and commercialize large systems, but little Federal assistance will be needed to develop and commercialize smaller systems; areas needing improvement are well-defined for large systems, but not for the small and medium-sized; and a Federal program to develop small and medium-sized systems would eliminate private investment. *Findings/Conclusions:* A GAO survey of the Wind Energy Program showed that: the decision to stress large systems was made without comparative analysis of small and medium-sized systems; and ERDA needs to systematically compare and evaluate the potential and advantages and disadvantages of wind energy systems of all sizes so that program content and priorities are proper and that resources are effectively allocated among the different sized wind energy systems and between the wind program and ERDA's other programs. *Recommendations:* ERDA should: direct the expeditious completion of market studies in sufficient depth to identify the commercial potential of small, medium, and large wind energy systems; using these market studies in conjunction with the ongoing and completed studies, make a comprehensive formal review of the formal potential and the advantages and disadvantages of wind energy systems of all sizes, and, if warranted, redirect resources within the Wind Energy Program and between the wind program and non-wind programs. Provided ERDA's comprehensive review shows that small and/or medium-sized systems have the potential for rapid commercial expansion, it should move quickly to develop optimum designs, identify constraints and impediments to commercialization and take actions to overcome them, and, if necessary, develop plans to demonstrate these systems. (Author/QM)

IS THE FEDERAL GOVERNMENT WISELY EXERCISING TRUSTEESHIP OVER ENERGY SOURCES ON FEDERAL LANDS?

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[*Provisions of Navajo and Hopi Coal Leases*]. B-177079. January 29, 1974. 8 pp. + 2 enclosures (2 pp.).
Report to Sen. Henry M. Jackson, Chairman, Senate Committee on Interior and Insular Affairs; by Elmer B. Staats, Comptroller General.

Congressional Relevance: *Senate* Committee on Interior and Insular Affairs.
Authority: Mineral Lands Leasing Act (30 U.S.C. 181).

Royalties and other payments to the Navajo and Hopi Indians for coal leases on tribal lands were compared with royalties received on public, State, and private lands for similar coal leases. *Findings/Conclusions:* The provisions of the Navajo and Hopi leases, except those of the 1957 Navajo lease and its 1962 and 1965 amendments, are equal to, or better than, the provisions of most Federal, State, and private coal leases issued during the same period. Because the 1957 Navajo lease and amendments do not provide for periodically adjusting royalty rates, the tribe will not be able to share in the increased value of coal resources if demand for coal increases and if the selling price of coal rises. Tribal officials intend to have majority interest in coal mining operations in the future and to provide for adjusting rental and royalty rates every 5 years instead of the current 10- to 20-year adjustment. All the Indian leases contained employment preferences for Indian workers/contractors. (DJM)

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Followup on Certain Matters Concerning the Inspection and Regulation of Outer Continental Shelf Oil Operations. B-146333. February 26, 1974. 12 pp. + 2 enclosures (7 pp.).
Report to Rep. Henry S. Reuss, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Environmental Protection Agency; Geological Survey.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.
Authority: Outer Continental Shelf Lands Act, § 5. 30 C.F.R. 250.-43. Outer Continental Shelf Order No. 7. Outer Continental Shelf Order No. 8. Outer Continental Shelf Order No. 11.

The Department of the Interior has implemented several suggestions regarding the inspection and regulation of oil drilling operations on the Outer Continental Shelf (OCS). Geological Survey (Survey) Gulf Coast personnel have been reinstructed to apply the prescribed enforcement actions for all violations unless deviations have been authorized. Instructions were given to survey western region personnel describing the conditions under which they should halt all or part of the operations on a platform. *Findings/Conclusions:* Survey estimates that by 1976 its Gulf Coast operations will have to be carried out from six district offices at a total operating cost of about $4.6 million. Survey has declared its intention to clear up any confusion in OCS regulation provisions regarding oilspill prevention. Survey has not informed the public of the issuance of notices of noncompliance, but such information is available on request. The authority to fine lessees for willful violations of OCS regulations has been used only once. Survey is proposing a revision of OCS Order No. 8 eliminating confusing wording and requiring the operator to be ready for inspection at any time. Punitive shut-ins are not used as a means of enforcing OCS regulations and orders. During January 1968 and January 1969 nearly 8 billion and 4.5 billion cubic feet of gas, respectively, were flared from Federal OCS leases in the Gulf Coast Region. Survey intends to eliminate gas flaring where it will result in a greater loss of equivalent total energy than could be produced if gas flaring was allowed. (QM)

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[*Agreement between the Secretary of the Interior and Officials of the State of Utah Pertaining to Oil Shale Leases*]. B-164613. March 27, 1974. 4 pp.
Letter to Rep. Charles A. Vanik; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Utah.
Congressional Relevance: *Rep.* Charles A Vanik.
Authority: Taylor Grazing Act, § 7 (42 U.S.C. 315f). 43 U.S.C. 851-852. 30 U.S.C. 191. 42 Op. Att'y Gen. 10.

210

[*Oil and Gas Leasing on Federal Lands*]. B-178205. July 12, 1974. 5 pp.
Report to Sen. William V. Roth; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior.
Congressional Relevance: *Sen.* William V. Roth.
Authority: Outer Continental Shelf Lands Act (67 Stat. 463; 43 U.S.C. 1331). Mineral Lands Leasing Act (41 Stat. 437; 30 U.S.C. 181). 30 C.F.R. 250. 43 C.F.R. 3300. 43 C.F.R. 3100. 43 C.F.R. 3110. 43 C.F.R. 3120.

Information was requested on oil and gas leasing of public lands and overall statistics on the number of producing and nonproducing leases. *Findings/Conclusions:* All Outer Continental Shelf leases are competitively awarded for 5 years, extendable to account for productive life, but do not include production minimums. Onshore leases within known geologic structures are similar, but those on exploratory lands are awarded to the first qualified bidder for 10 years. Competitive and noncompetitive leases have substantially the same provisions for oil and gas production, with requirements for sound engineering, timely drilling, extendable life of contract, production, safeguarding the public interest and compensation for loss, and cancellation. There were 104,517 producing and nonproducing Federal oil and gas leases covering 76,424,531 acres as of December 1972, but 91% were nonproductive. During fiscal year 1973, the

royalties, rent, and bonuses totaled $4.1 billion. Leases on Indian lands produced $25 million. GAO is still reviewing the Interior Department's leasing program, particularly as regards production/nonproduction.

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[*Leasing of Minerals on Public Lands*]. B-164613. September 19, 1974. 4 pp.
Report to Rep. Charles A. Vanik; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior.
Congressional Relevance: *Rep.* Charles A. Vanik.
Authority: Mineral Lands Leasing Act (30 U.S.C. 181); 43 C.F.R. 3100; 43 C.F.R. 3500. Outer Continental Shelf Lands Act (43 U.S.C. 1331); 43 C.F.R. 3300. 31 U.S.C. 483a. B-118678 (1970). OMB Circular A-25.

Mineral leasing laws and regulations do not contain specific provisions requiring prelease evaluation for mineral leases on public lands offered for competitive bidding. However, Office of Management and Budget Circular No. A-25 directs Federal agencies to require such leasing at fair market value. ***Findings/Conclusions:*** Prelease evaluations are made where possible using discounted cash flow techniques for measuring profitability. GAO is still examining the Interior Department's use of this method. Noncompetitive mineral leases and prospecting permits for oil and gas on public lands are issued for exploration and development onshore where deposits are not known to exist. Rents and royalties are the same as for competitive leases, which also call for bonus payments. Other onshore minerals as coal, phosphate, sodium, sulphur, and potash are similarly leased and prospected. In February 1973, the Department suspended coal leases until it had developed a comprehensive plan for coal resources. In the past, GAO has recommended that all leases be awarded competitively at fair-market value. (DJM)

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National Ocean Policy Study. September 28, 1974. 13 pp.
Testimony before the Senate Committee on Commerce; by Monte Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Ford Foundation.
Congressional Relevance: *Senate* Committee on Commerce.
Authority: Coastal Zone Management Act of 1972. National Environmental Policy Act of 1969.

Federal leasing of the California Outer Continental Shelf must be considered in the context of available energy options and environmental impact. Reports by GAO were cited dealing with oilspills and leasing programs. Options to OCS development, as outlined in the Ford Foundation's Energy Policy Project, were: (1) "zero energy growth" which would rely on strict conservation and decreased demand; and (2) the "technical fix" which emphasizes conservation by more efficient energy consumption. Difficulties in implementing these options were noted, but it was felt that there is a good potential for energy conservation. In relation to OCS development, the importance of obtaining accurate data for determining resource potential, environmental impact, and tract selection was emphasized. The need for analysis in these areas was urged. (HTW)

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[*Issues in Leasing the Atlantic Outer Continental Shelf*]. February 28, 1975. 10 pp.
Testimony before Massachusetts: Special Legislative Commission on Marine Boundaries and Resources; by Monte Canfield, Jr., Director, Office of Special Programs.
Prepared with the assistance of Herman Galvin, Assistant Director (Energy).

Organization Concerned: Department of the Interior.
Authority: Coastal Zone Management Act.

The mid-Atlantic Outer Continental Shelf (OCS) is scheduled to be offered for lease for oil and gas development. In testimony given in 1973 dealing with Federal energy resource development policy, it was stated that uncertainities involved in OCS leasing resulted from lack of adequate information and poor understanding of environmental, social, and economic impacts of development. It is important to consider State and local needs in policy planning; however present policy is not directed to these needs. GAO reports planned for release dealt with: Federal goals to accelerate leasing of resources on the OCS and with improvements possible in determining where and at what dollar value to lease. Differing estimates of resources contribute to questions about the value of OCS development compared to alternative energy sources. Federal energy policy is still suffering from gaps in information and management, but some useful studies and actions have been taken. Studies cited concern: impact on marine environment, effects of industrialization, effects on public policy, and methodology. (HTW)

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Outlook for Federal Goals to Accelerate Leasing of Oil and Gas Resources on the Outer Continental Shelf. RED-75-343; B-118678. March 19, 1975. 32 pp. + 4 appendices (8 pp.).
Report by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Energy Administration; Department of the Interior.
Authority: Outer Continental Shelf Lands Act (43 U.S.C. 1332). Executive Order 11814.

Federal goals for leasing of oil and gas resources on the Outer Continental Shelf changed significantly in the period from 1971 to 1975. ***Findings/Conclusions:*** The leasing goal increased from 1 million acres in 1971 to 10 million acres in 1974–only 0.8 million acres less than the total acreage leased in the 20-year period of the Federal Shelf leasing program. The Department of the Interior established the accelerated leasing goal of 10 million acres without carefully analyzing and considering several factors and problems affecting the goal's soundness. Interior's decision to lease the 10 million acres was reached before the Project Independence study was initiated in March 1974. There is general agreement that existing and predicted shortages of materials, equipment, personnel, capital, and other related services will to some degree limit the ability of industry to expand exploration and development of the Shelf. Actions need to be taken in several broad policy areas in order to minimize constraints to production. ***Recommendations:*** The Secretary of the Interior should: clearly define Shelf leasing goals and specify how these goals will be met and how they relate to overall national energy goals and plans; and reconsider the accelerated Shelf leasing schedule in the light of Government and industry capabilities and possible alternatives to leasing in new Shelf areas as addressed in the Project Independence analysis and the President's subsequent national energy and economic proposals. (Author/SC)

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Development of the Outer Continental Shelf Fossil Fuel Resources. April 9, 1975. 15 pp. + endlosure (2 pp.).
Testimony before the Senate Committee on Interior and Insular Affairs; the Senate Committee on Commerce; by Phillip S. Hughes, Assistant Comptroller General.

Congressional Relevance: *Senate* Committee on Interior and Insular Affairs; *Senate* Committee on Commerce.
Authority: Outer Continental Shelf Lands Act Amendments of 1975; S. 426 (94th Cong.). Energy Supply Act of 1975; S. 521 (94th Cong.). Coastal Zone Environmental Act of 1975; S. 586 (94th Cong.). National Energy Production Board Act of 1975; S. 740 (94th Cong.). Outer Continental Shelf Lands Act of 1953.

Experience with the system now in use for leasing and developing Outer Continental Shelf (OCS) resources indicates a need for improving leasing and operating practices. A recent GAO report focused on the circumstances under which the Department of the Interior's accelerated "10 million acre" leasing goal was developed; this goal was hastily conceived without adequate data. Interior officials stated that they no longer have this goal, but no new goals were announced. The process of tract selection for leasing potential oil and gas resouces also needs improvement. Two bills concerning development of OCS resources were endorsed in general but some specific provisions requiring action by the Comptroller General may need modification. (HTW)

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[*Accelerated Outer Continental Shelf Development*]. April 21, 1975.- 12 pp. + enclosure (16 pp.).
Testimony before the House Committee on Appropriations: Interior Subcommittee; by Monte Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Department of the Interior.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee.
Authority: Outer Continental Shelf Lands Act of 1953.

Reviews of issues involved in Outer Continental Shelf (OCS) development have concentrated on leasing goals and tract selection. A March 19, 1975 report to Congress focused on the circumstances under which the Department of Interior's accelerated "10 million acre" leasing goal was developed, its relationship to the Project Independence effort, and constraints expected to hinder the program. The goal was hastily conceived without adequate data. After Department officials stated that they no longer have this goal but failed to announce new goals, GAO recommended that leasing goals should be defined and related to overall national energy goals. In a review of the Federal Government's program for deciding where to lease potential oil and gas resources and at what dollar values, it was concluded that the Government is frequently committed to development before it has sufficient information to make intelligent choices. Recommendations to the Secretary of the Interior called for: an exploration program including selective test drilling prior to leasing; pacing lease offers to permit data analysis; periodic assessment of economic factors; and a test program for leasing entire geological structures instead of tracts. GAO also issued a report dealing with efforts to control oil spills and is planning additional work in the OCS area. (HTW)

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Further Action Needed on Recommendations for Improving the Administration of Federal Coal-Leasing Program. RED-75-346; B-169124. April 28, 1975. 17 pp. + 2 appendices (3 pp.).
Report to Rep. John E. Moss; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior.
Congressional Relevance: *Rep.* John E. Moss.
Authority: National Environmental Policy Act (42 U.S.C. 4321). Mineral Leasing Act (30 U.S.C. 201(a)). 30 U.S.C. 207. S. 1040 (93rd Cong.).

In a 1972 report, three recommendations were made to the Secretary of the Interior relevant to coal leasing. *Findings/Conclusions:* In response to one recommendation, the Geological Survey issued guidelines for enforcing reclamation and environmental requirements, including a requirement for lessees to submit surface protection plans. Although 69 mines were subject to this guideline as of October 1974, only 43 surface protection plans had been submitted. Another recommendation called for discontinuing the practice of issuing leases for lands that permitted lessees to defer or suspend operations by payment of a royalty. Some action was taken on this recommendation, including issuance of a policy providing for mine development within 3 years on new leases, but the actions did not require coal production within a specified time. The third recommendation related to possible changes in legislation permitting more frequent adjustment of lease terms. No legislation was enacted. Objections offered by the Bureau of Land Management did not seem to be documented. *Recommendations:* The Geological Survey should prepare and put into effect guidelines dealing with surface subsidence as soon as possible. The Secretary of the Interior should: (1) discontinue the practice of issuing coal leases that permit lessees to defer or suspend operations unless justification is given; (2) seek a change in the law to allow for more frequent adjustment in lease terms; and (3) when a lease comes due for renewal, require the Bureau to promptly renegotiate terms, delete provisions for suspending operations by paying a royalty, and include terms to provide for termination if timely development is not accomplished. (HTW)

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Outer Continental Shelf Oil and Gas Development: Improvements Needed in Determining Where to Lease and at What Dollar Value. RED-75-359; B-118678. June 30, 1975. 42 pp. + appendices (9 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior.
Congressional Relevance: Congress.
Authority: Outer Continental Shelf Lands Act (43 U.S.C. 1332). S. 426 (94th Cong.). S. 521 (94th Cong.). H.R. 6218 (94th Cong.).

Development of oil and gas resources on the Outer Continental Shelf (OCS) is considered an important means of lessening U.S. dependence on foreign energy supplies. Legislation which provides for U.S. jurisdiction over OCS submerged lands authorizes the Department of the Interior to lease lands for such purposes as production of oil and gas and to regulate operations to prevent waste and conserve natural resources. *Findings/Conclusions:* Weaknesses have been found in Interior's system of selecting areas to lease. Problems identified in evaluation programs are: (1) they are hindered by inadequate data and analysis; (2) they do not reasonably insure a fair market return on lease offers; and (3) they are being jeopardized by an accelerated leasing pace. The Government's direction and financing are essential to insure that exploratory activities are sufficiently broad to implement a systematic plan for resource appraisal. A test program to evaluate, offer, and lease entire geological structures will allow the merits of a structure leasing proposal to be analyzed and evaluated. *Recommendations:* The Department of the Interior should: (1) direct an exploration program for systematic appraisal of OCS resources; (2) issue permits for exploration by industry; (3) provide for dissemination of geotechnical information to the Government and the public; (4) assess economic factors used in valuing resources; (5) pace lease offers at a frequency which permits consideration of data; and (6) establish a test program for leasing entire geological structures instead of tracts. (Author/HTW)

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[*Accelerated Outer Continental Shelf Development*]. July 11, 1975. 10 pp.
Testimony before the House Committee on Science and Technology: Energy Research, Development and Demonstration Subcommittee; by Monte Canfield, Jr., Director, Office of Special Programs.

Organization Concerned: Department of the Interior.
Congressional Relevance: House Committee on Science and Technology: Energy Research, Development and Demonstration Subcommittee.
Authority: Outer Continental Shelf Act of 1953.

GAO work on Outer Continental Shelf (OCS) development has stressed leasing goals and tract selection. A March 19, 1975 report to Congress focused on the circumstances under which the Department of Interior's accelerated "10 million acre" leasing goal was developed, its relationship to the Project Independence effort, and constraints expected to hinder the program. This goal was hastily conceived without adequate data. Although Department of Interior officials stated that they no longer have this goal, no new acreage goals have been announced. Leasing goals should be defined and related to overall national energy goals. A review of the Federal

Government's program for deciding where to lease potential oil and gas resources and at what dollar values indicated that the Government is frequently committed to development before it has sufficient information to make intelligent choices. Programs are hindered by inadequate data, do not insure fair market value return, and are jeopardized by an accelerated pace. Recommendations include: exploration programs for resource appraisal by the Department and industry; provisions for supplying information to the Government and the public; periodic assessment of economic factors; pacing lease offers to permit data analysis; and a test program for leasing entire geological structures of tracts. (HTW)

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Followup Review of the Naval Petroleum Reserves. LCD-75-321; B-66927. July 29, 1975. 2 pp. + appendices (27 pp.).
Report to Rep. John E. Moss; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Navy; Department of Defense; Department of the Navy: Office of Naval Petroleum and Oil Shale Reserves.
Congressional Relevance: *Rep.* John E. Moss.
Authority: Supplemental Appropriations Act of 1974 (P.L. 93-245). Energy Independence Act of 1975; S. 594 (94th Cong.); H.R. 2650 (94th Cong.). Alaska Statehood Act (P.L. 85-508). S.J. Res. 176 (93rd Cong.). H.J. Res. 47 (94th Cong.). S.J. Res. 13 (94th Cong.). H.R. 49 (94th Cong.). H.R. 5919 (94th Cong.). Public Land Order 1621. Executive Order 3797-A.

The Navy's Office of Naval Petroleum and Oil Shale Reserves (the Office) manages the Navy's petroleum reserves and for years has requested funds to further explore and develop them. For the most part, the requests have been denied and have not been submitted for appropriation consideration. *Findings/Conclusions:* In reviewing the Office's requests, the Navy and the Department of Defense (DOD) have assumed that funds approved for the reserves would be at the expense of other Navy activities. Reasons given for denying the requests were: the reserves were national resources and appropriations for other Navy activities should not suffer; and there was no firm national policy on the reserves. A lack of funding has delayed development of the reserves and the capability of producing large quantities of oil for an emergency. Funds for exploration and development at Petroleum Reserve No. 1 in California and Reserve No. 4 in Alaska have recently been made available by the Congress. Proposals have been made to produce oil from the reserves to increase the amount of domestic oil available to meet current fuel needs and reduce future reliance on foreign sources. A Federal Energy Administration report did suggest the alternative of production from the Navy's reserves. Leases continue in effect on Federal land around the reserves.

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[*Federal Coal-Leasing Program of the Department of the Interior*]. RED-76-26A; B-148623. October 15, 1975. 1 pp. + enclosure (9 pp.).
Report to Rep. Henry S. Reuss; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior.
Congressional Relevance: *Rep.* Henry S. Reuss.
Authority: Freedom of Information Act (U.S.C. 552(b)). Clean Air Act, as amended (P.L. 91-604; 42 U.S.C. 1857). Mineral Leasing Act (30 U.S.C. 184).

The Federal coal leasing program is administered by the Department of the Interior. Questions have been raised about coal reserve estimates, coal production trends, production and reserve data on Federal leases, and the monitoring of Federal leases. *Findings/Conclusions:* GAO accepted the 1974 Bureau of Mines estimate that the demonstrated coal reserve was 434 billion tons. These 434 tons are not necessarily recoverable. They figure in the Interior Department's estimate of 3,244 billion tons, both identified and hypothetical, with recoverable coal ranging from 217 to 258 tons. Mining in western States is increasing for several reasons, including ease of mining and low sulphur content. As of December 31, 1974, 785,000 acres of Federal land were leased containing about 16 billion tons of recoverable coal, and production has increased in recent years (20,631,000 tons in 1974). A table lists the 15 largest acreage holders of Federal coal leases. Federal law sets limits of 46,080 acres in coal leases and prospecting permits to any one person or corporation in any one State at one time. State officials of the Bureau of Land Management monitor acreage limitations on a quarterly basis from computer listings. (DJM)

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[*The Geological Survey's Inadequate Action on Recommendations Concerning Inspection and Regulation of Outer Continental Shelf Oil Operations*]. RED-76-48; B-146333. November 21, 1975. 2 pp.
Report to Rep. William S. Moorhead, Chairman, House Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Geological Survey.
Congressional Relevance: *House* Committee on Government Operations: Conservation, Energy and Natural Resources Subcommittee.

The Geological Survey has taken inadequate action on the following recommendations: (1) that the Secretary of the Interior require the Geological Survey to issue instructions covering partial inspections of drilling operations and inspection of remedial and abandonment operations; and (2) that the Geological Survey be required to issue regulatory orders to control erosion, workover and wireline operations, and certain concurrent operations from a single structure.
Findings/Conclusions: The Geological Survey gives instructions to the technicians on a continuing basis during day-to-day inspections, and inspection schedules for these types of operations are established as needed within the operations framework. Written guidelines would provide greater insurance that inspection activities were being administered and reported uniformly. The regulation changes would not be finalized and put into effect until early 1976. (Author/QM)

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[*Development of Federal Coal Resources*]. March 26, 1976. 13 pp.
Testimony before the House Committee on Interior and Insular Affairs: Mines and Mining Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Department of the Interior.
Congressional Relevance: *House* Committee on Interior and Insular Affairs: Mines and Mining Subcommittee.
Authority: Mineral Leasing Act of 1920.

A GAO study on Federal coal leasing addressed questions of the need for new leasing and the ability of the Department of the Interior to administer a leasing program. The Department of the Interior decided to lift a moratorium on coal leasing without assessing the potential contribution of Federal lands toward meeting the national goal of doubling yearly coal production by 1985. Attempts should be made to: (1) better identify the amount of coal under lease and prospecting permit; and (2) relate the amount of Federal coal required to meet national goals to programs of renewed leasing. Lessees should furnish information related to holdings and production plans. Program administration of the Department's new leasing process has improved, but further improvements are necessary. Weaknesses were found in the coal resource mapping program, in drilling programs, and in the land management planning system. Recommendations were made to the Secretary of the Interior to correct these weaknesses. The Department proposed regulations designed to improve production on Federal leases, did not go far enough. Action by Congress was suggested to allow for more frequent adjustment of lease terms, and amendment of the Mineral Leasing Act of 1920 was proposed to provide for competitive award of leases and for issuance of nonexclusive prospecting permits. (HTW)

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Department of the Interior Study of Shut-In Oil and Gas Well Completions and Leases–GAO Observations. RED-76-90; B-178205. March 30, 1976. 2 pp. + 2 appendices (12 pp.).
Report to Sen. Alan Cranston; Sen. Ernest F. Hollings; Sen. Warren G. Magnuson; Sen. Frank E. Moss; Sen. Adlai E. Stevenson; Sen. John V. Tunney; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Geological Survey.
Congressional Relevance: *Sen.* Alan Cranston; *Sen.* Ernest F. Hollings; *Sen.* Warren G. Magnuson; *Sen.* Frank E. Moss; *Sen.* Adlai E. Stevenson; *Sen.* John V. Tunney.

On January 22, 1975, the Secretary of the Interior instructed the Geological Survey to study Outer Continental Shelf (OCS) shut-in well completions and leases in the Gulf of Mexico. The study focused on the following areas; shut-in oil and gas well completions; nonproducing leases with qualified producible wells; certain nonproducing leases with gas reserves; and unexplored primary-term leases (5 year) with no drilling operations for 2 consecutive years. ***Findings/Conclusions:*** The summary of operators' reasons for shut-in completion indicated that 94 well completions were plugged or were awaiting plugging operations because they had produced oil or gas to their economic and/or physical limits. Most of the remaining 60 well completions were shut in pending completion of a pipeline connection or were awaiting additional work to restore production. Study of 137 completions for recoverable reserves indicated: 34 completions with possible gas reserves; 19 completions with possible oil reserves; and 84 completions with no reserves. Geological Survey Officials plan to institute a reporting system in June 1976 to identify shut-in well completions on a quarterly basis. Study disclosed that 2 of 17 shut-in leases reviewed were producing, 1 was in the midst of an intensive development program, 2 were relinquished, and 12 were allowed to retain their leases for longer periods. Geological Survey officials said they lack the staff to verify each set of justifications for suspension-of-production submitted by lessees. (Author/QM)

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Indian Natural Resources–Part II: Coal, Oil, and Gas–Better Management Can Improve Development and Increase Income and Employment. RED-76-84; B-114868. March 31, 1976. 39 pp. + 1 appendix (2 pp.).
Report to Sen. Henry M. Jackson, Chairman, Senate Committee on Interior and Insular Affairs; by Elmer B. Staats, Comptroller General.

Organization Concerned: Bureau of Indian Affairs; Bureau of Mines; Department of the Interior; Geological Survey.
Congressional Relevance: *Senate* Committee on Interior and Insular Affairs.
Authority: Indian Self-Determination and Education Assistance Act of 1975 (P.L. 93-638). Indian Reorganization Act of 1934 (25 U.S.C. 466). P.L. 93-580. 25 U.S.C. 396. 25 C.F.R. 171. 25 C.F.R. 172. 25 C.F.R. 177. 25 C.F.R. 183.45.

Coal, oil, and gas are valuable resources that provide Indians with income and job opportunities which will increase as resources are further developed. Indian income from oil and gas in fiscal year 1974 amounted to about $43.1 million. Indian income from other minerals, including a large amount from coal, amounted to about $9.6 million during the same period. ***Findings/Conclusions:*** The Bureau of Indian Affairs (BIA) has placed limited emphasis on developing Indian coal, oil, and gas resources. For example: the amount of resources on most reservations is unknown; planning for minerals resource development has not been adequate; BIA does not have sufficient personnel with minerals expertise; and information on experience gained during minerals development has not been exchanged among BIA field offices. Indian employment in the mineral industry was substantially higher on those reservations that had established specific requirements for Indian preference in hiring and followup procedures. Thirteen of the 16 Indian coal leases reviewed had fixed royalty rates and, therefore, the income per ton produced did not rise during periods of rising coal prices. The Geological Survey has not adequately fulfilled its responsibilities for mineral resource development on Indian reservations. ***Recommendations:*** The Secretary of the Interior should direct the Commissioner of BIA to: develop complete minerals inventories for all reservations; develop mineral management plans taking into consideration the wishes of the Indian people; determine the mineral expertise staffing BIA needs and take steps to meet them; establish procedures to exchange and distribute between area and agency offices information relating to experience gained by the tribes in developing mineral resources; update and maintain BIA's operations manual; establish specific requirements in all Indian mineral leases for Indian preference in hiring; establish procedures to insure that such preference provisions are being followed; establish a coal-lease royalty rate policy based on a percentage of the selling price of coal; determine whether the 2,560-acre limitation and the criteria for exceeding it are valid; and insure that the Bureau's lease files are adequately documented. The Director of the Geological Survey should establish penalty fees and require reports from lessees. (Author/QM)

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Role of Federal Coal Resources in Meeting Energy Goals Needs to Be Determined and the Leasing Process Improved. RED-76-79; EN200-. April 1, 1976. 64 pp. + 4 appendices (5 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Bureau of Land Management; Geological Survey.
Congressional Relevance: Congress.
Authority: Mineral Lands Leasing Act (30 U.S.C. 181). Mineral Leasing Act for Acquired Lands (30 U.S.C. 351). Clean Air Act, as amended (P.L. 91-604; 42 U.S.C. 1857). 30 U.S.C. 207. 30 C.F.R. 200.

The Administration's goal is to double present national yearly coal production by 1985. Because of its large holdings of low-sulfur coal, the Federal Government is in a key position to shape future patterns of coal development. Most of the coal lands are administered by the Department of the Interior and may be leased to mine coal. Under a new leasing process, the level of lease offerings would be determined by bidding results in competitive lease sales. Lease sales, if environmentally acceptable, would be offered as long as bids were sufficiently high. ***Findings/Conclusions:*** Reliance on the new leasing process places the Department of the Interior in the position of reacting rather than providing leadership needed to develop sound national energy strategy. Much remains to be done before the new leasing process can be applied effectively on a large scale. Weaknesses exist in the Department of the Interior's coal resource mapping program, in drilling programs to obtain data for mineral classification and environmental protection, and in the land management planning system. There is a lack of information to make reasonably sound valuations of coal lands and leased coal. Coal-leasing regulation improvements are needed concerning: production standards for leases; adjustment of lease terms; assignment of leases; and coal exploration. Improvements are also needed in the preparation for and the administration of a coal-leasing program. ***Recommendations:*** The Congress should enact legislation that would: permit adjusting terms of future leases more frequently than after a 20-year primary term; and amend the law to provide for the award of leases only on a competitive basis and issuance of prospecting permits under which persons could explore for coal for commercial purposes but have no exclusive rights to leases. The Department of the Interior should: specify what demands will be placed on Federal coal resources in meeting production goals; establish a leasing schedule to indicate the timing and magnitude of lease sales; develop a systematic coal-drilling program to provide data for appraising coal resources and provide planned and coordinated drilling through federally financed activities; require existing and potential lessees to furnish information on reserve holdings, production plans, reasons and justifications for nonproduction, and the need, if any, for additional Federal coal reserves; and award leases only on a competitive basis. (QM)

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Management of and Plans for the Naval Petroleum Reserves. LCD-76-313; B-66927. May 14, 1976. 21 pp. + 5 appendices (33 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Navy.
Congressional Relevance: Congress.
Authority: Naval Petroleum Reserves Production Act of 1976 (P.L. 94-258). Armed Services Procurement Act of 1947. 10 U.S.C. 641. H. Rept. 94-942.

By law the Navy has had custody of Federal lands containing large reserves of petroleum and thousands of acres of oil shale. ***Findings/Conclusions:*** Under recent legislation, responsibility for custody and exploration of the largest reserve (No. 4, North Slope, Alaska) was shifted from the Navy to the Department of the Interior. Reserves Nos. 1 and 3 (Elk Hills, California, and Teapot Dome, Wyoming) will be more fully developed at a cost of $535 million, raising production to over 400,000 barrels a day. No. 2 (Buena Vista, California) Reserve is almost depleted, and No. 4 and the oil shale reserves are undeveloped. At No. 3, the Navy recently started to systemically test oil wells and solve problems detected, and has requested proposals for a new operator contract. In the past, Navy procurement for the reserves did not always accord with that used by the defense agencies or ensure that the Government's best interests were being served, because it did not always follow the relevant intent of the Armed Services Procurement Act applied to all purchases of supplies and services, including contractors who operate the reserves. ***Recommendations:*** The Secretary of the Navy should: establish contracting procedures which conform to the policies and procedures of the Procurement Regulations; review the recently awarded contracts to operate reserves Nos. 1 and 4, and modify them if necessary to accord with procurement regulations; and comply with the newly established contracting procedures for the new operator contract at reserve No. 3. (DJM)

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[*Department of the Interior's Procedures for Approving Coal Mining Plans*]. EMD-76-6; B-118678. July 20, 1976. 5 pp.
Report to Rep. Patsy Mink, Chairman, House Committee on Interior and Insular Affairs: Mines and Mining Subcommittee; Sen. Lee Metcalf, Chairman, Senate Committee on Interior and Insular Affairs: Minerals, Materials and Fuels Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Bureau of Land Management; Department of the Interior; Geological Survey.
Congressional Relevance: *House* Committee on Interior and Insular Affairs: Mines and Mining Subcommittee; *Senate* Committee on Interior and Insular Affairs: Minerals, Materials and Fuels Subcommittee.

A review of the Department of the Interior's approval process for coal mining plans focused on six mining plans approved since October 31, 1975. ***Findings/Conclusions:*** Lessees must submit mining plans that detail reclamation and environmental protection measures before mining on public lands. Any major environmental impact must be treated in an environmental impact statement. The mining plan is submitted to the Area Mining Supervisor who makes a technical review. A Federal surface management agency (such as Forest Service or Bureau of Land Management) also reviews the plans. At the same time, a multidisciplinary, multiagency (Federal and State) environmental analysis is prepared to determine the need for an environmental impact statement. If approved, the plan goes through five offices/divisions and at each level stipulations can be added. After approval by Assistant Secretary, Energy and Minerals, it reverses its upward flow and returns through channels back to the Area Mining Supervisor who notifies the lessee of approval. In four cases, however, approval from the Assistant Secretary was communicated by phone, not by the process outlined, in order to lift legal injunctions by the courts on a timely basis. The approval letter contained a number of modifying stipulations dealing mainly with the method of operating and reclamation and compliance with various regulations and requirements. (DJM)

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An Evaluation of the Federal Power Commission's Rulemaking on Utilities' Construction Work in Progress. EMD-77-7; B-180228. December 2, 1976. ***Released*** January 17, 1977. 5 pp. + appendix (19 pp.).
Report to Rep. John E. Moss, Chairman, House Committee on Interstate and Foreign Commerce: Oversight and Investigations Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Federal Power Commission.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce: Oversight and Investigations Subcommittee.

GAO was asked to review a proposed Federal Power Commission rule to allow natural gas and electric utility companies to include construction work in progress in their bases for computing rates.
Findings/Conclusions: The rulemaking order does not appear to serve adequately the purposes the Commission originally envisioned. The immediate financial impact appears to be minimal, and little change will result in the utilities' allowances for funds used during construction accounts. More importantly, the rulemaking sets a precedent for the Commission to depart from its historic "used and useful" policy and provides an opening for utilities to submit future rate increase filings with cost of construction work in progress in the rate base. The greatest impact of the rulemaking will probably be to increase the administrative workload of the FPC staff, thus intensifying the regulatory lag problem. ***Recommendations:*** The Chairman of the FPC should require a complete central file to be maintained for each rulemaking. (Author/DJM)

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[*Rational Exploration and Development of Outer Continental Shelf Resources*]. March 7, 1977. 10 pp. + 2 enclosures (4 pp.).
Testimony before the House Select Committee on Outer Continental Shelf; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Department of the Interior.
Congressional Relevance: *House* Select Committee on Outer Continental Shelf.
Authority: H.R. 1614, § 208 (95th Cong.).

Improved policies and procedures are needed for the rational exploration and development of the Outer Continental Shelf (OCS) resources. An assessment of the first frontier sale – OCS Sale 35 off the California coast – revealed that the Department of the Interior's tract selection and evaluation process was not reliable, and bidding was not generally competitive. In addition, the prerelease tract evaluation used in making accent/reject decisions on industry bids were based on inadequate data. The Department's current revenue estimating process for OCS sales is based on inadequate information; it often includes overly optimistic estimates; and it relies on various errors to cancel each other out and yield a reasonable estimate. Under the present leasing system, the Federal Government is frequently committed to lease before it has sufficient information to make intelligent choices. The Department of the Interior should: direct a geological exploration program which would provide for the systematic development and implementation of a plan for appraising OCS oil and gas resources, encourage private industry to conduct the drilling identified in the plan, and take necessary steps to encourage industry to obtain further information after the tract selection process is completed, and offer for lease sale only those areas for which sufficient information has been collected and analyzed. (RRS)

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Outer Continental Shelf Sale #35: Problems Selecting and Evaluating Land to Lease. EMD-7719; B-118678. March 7, 1977. 45 pp. + appendices (22 pp.).

Report to the Congress; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Department of the Interior; Office of Management and Budget.
Congressional Relevance: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Interior and Insular Affairs; Congress.
Authority: Outer Continental Shelf Lands Act (43 U.S.C. 1331). S. 9 (95th Cong.). H.R. 1614 (95th Cong.). S. 521 (94th Cong.).

A review of practices in leasing Outer Continental Shelf (OCS) lands for oil and gas development concentrated on tract selection and methods for estimating revenues. The Department of the Interior has leased a total of about 12.5 million acres in 21 years through competitive offerings, with resulting revenues to the Federal Government of nearly $16 billion. ***Findings/Conclusions:*** After the oil embargo, accelerated leasing led to speculation and jeopardized the Government's role in protecting the public interest. For OCS Sale #35, tracts were selected for leasing without adequately assessing their resource potential. Prelease tract evaluations were made using inadequate data. Revenues to be received were overestimated because of inadequate information and overoptimistic estimates. ***Recommendations:*** The Secretary of the Interior should (1) direct a geological program to appraise OCS oil and gas resources; (2) encourage industry to share information on explorations with the Department; and (3) offer for lease only areas analyzed through sufficient information. Congress should act favorably on proposed legislation providing for a leasing program to meet national goals and assure receipt of fair market value for oil and gas. (HTW)

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[*Improved Policies and Procedures for the Exploration and Development of Outer Continental Shelf Resources*]. March 15, 1977. 10 pp. + 4 enclosures.
Testimony before the Senate Committee on Energy and Natural Resources; by J. Dexter Peach, Deputy Director, Energy and Minerals Div.

Congressional Relevance: *Senate* Committee on Energy and Natural Resources.

A planned and systematic approach to the leasing of the nation's Outer Continental Shelf (OCS) resources is needed if hydrocarbon production in frontier areas is to be maximized in a manner consistent with environmental and other values. A GAO assessment of the first frontier sale (OCS Sale 35 off the California coast) has demonstrated that (1) the Department of Interior's tract selection and evaluation process were not reliable; (2) the bidding generally was not competitive; and (3) the prelease tract evaluation used by the Department in making accept/reject decisions on industry bids were based on inadequate data. The need for sufficient data is critical not only for selecting and valuing tracts to determine the fair market value for leased lands, but also for identifying where to lease so that domestic oil and gas production can be increased in the near future. The Department should undertake a systematic exploration program to collect data on previously unexplored frontier areas. Such an exploration would also improve the Department's revenue-estimating process and provide the nation with a better knowledge of the total OCS resource potential. The Department should also encourage private industry to conduct the drilling and share the resulting information with the Department on a confidential basis. The Department should offer for lease sale only those areas for which it has sufficient information to identify the resources' location, estimated value, and potential for development. (LDM)

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Domestic Energy Resource and Reserve Estimates–Uses, Limitations, and Needed Data. EMD-77-6; B-178205. March 17, 1977. 35 pp. + 5 appendices (21 pp.).
Report to the Congress; by Robert F. Keller, Acting Comptroller General.

Organization Concerned: Department of the Interior; Energy Research and Development Administration; Federal Energy Administration.
Congressional Relevance: *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Energy and Natural Resources; Congress.
Authority: Energy Policy and Conservation Act (42 U.S.C. 6201 (Supp. V)). Energy Conservation and Production Act (P.L. 94-385). Mining and Minerals Policy Act of 1970 (30 U.S.C. 21a). Energy Reorganization Act of 1974 (42 U.S.C. 5801 (Supp. V)). Federal Energy Administration Act of 1974. Energy Supply and Environmental Coordination Act of 1974. Federal Water Power Act. Natural Gas Act. Federal Coal Leasing Amendments Act of 1975. 43 U.S.C. 31. 30 U.S.C. 1. 15 U.S.C. 761 (Supp. V). 15 U.S.C. 717. 16 U.S.C. 791. 15 U.S.C. 772(f) (Supp. V).

The usefulness of resource and reserve estimates of the Nation's primary energy fuels, including oil, gas, coal, and uranium, can be greatly improved. These estimates are prepared and reported on by Federal agencies. ***Findings/Conclusions:*** The estimates prepared have been an attempt to measure the potential short- and long-term domestic supplies of these fuels. Review of the reported energy resource and reserve estimates demonstrates that there is a need for more data to assess resources and reserves and a need for more reliable resource and reserve estimates. In order to increase the usefulness of reserve estimates for decisionmaking purposes, information is needed on the effects of cost-price relationships on energy source recoverability. ***Recommendations:*** The Secretary of the Interior should direct a geological exploration program which would provide for the development and implementation of a systematic plan for appraising Outer Continental Shelf oil and gas resources. The Energy Research and Development Administration should expedite the work and report of its National Uranium Resource Evaluation Program. The Administrator of the Federal Energy Administration should obtain additional information concerning the effects of cost-price relationships on the recovery of energy resources, the quantities of recoverable coal reserves, and the ownership and control over energy resources. (Author/SC)

DO OUR DOMESTIC AND INTERNATIONAL ENERGY POLICIES ADEQUATELY REFLECT THE INTERNATIONAL AND DOMESTIC ENERGY SITUATIONS?

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A Summary of European Views on Dependency of the Free World on Middle East Oil. B-178334. August 29, 1973. 19 pp.
Report to Rep. Lee H. Hamilton, Chairman, House Committee on International Relations: Europe and the Middle East Subcommittee; by Elmer B. Staats, Comptroller General.

Organization Concerned: North Atlantic Treaty Organization; Organization for Economic Cooperation and Development; Organization of Petroleum Exporting Countries.
Congressional Relevance: *House* Committee on International Relations: Europe and the Middle East Subcommittee.

House hearings concerning oil negotiations with governments of the Persian Gulf were planned for which European views on the following oil-related issues were sought: oil negotiations, issues, and the stability of supply; and the impact of Arab oil money on the international monetary scene. ***Findings/Conclusions:*** The energy crisis and increasing dependency on Middle East oil are real problems for both Europe and the United States, which cannot be avoided or greatly alleviated before the early 1980's. Immediate action is necessary to prevent the energy crisis from extending beyond that. Europeans have adjusted to their historic dependency but are becoming more concerned, particularly over U.S. policy on the Middle East and energy. Cooperation among major oil-consuming nations is highly desirable but difficult to achieve. Middle East oil riches are an important factor in world financial markets and played a large role in the recent massive selling of dollars. Protection of value, however, not maliciousness, motivated the movement of oil wealth into other currencies. Accumulated oil wealth and the excess liquidity of major

oil-producing countries must be considered in any new international financial arrangements. Both oil and oil-derived wealth are potential economic weapons of growing strength, although the actual or threatened use of such weapons has been limited to date. (Author/QM)

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Issues Related to Foreign Sources of Oil for the United States. B-179411. January 23, 1974. 63 pp. + appendix (1 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of State; Organization for Economic Cooperation and Development; Organization of Petroleum Exporting Countries.
Congressional Relevance: Congress.

Issues relating to international petroleum supplies include: future availability of imports; agreements with oil-exporting and oil-consuming countries; outlets for monetary reserves of oil-exporting countries; and the role of the Department of State in negotiations between oil companies and producer countries. *Findings/Conclusions:* U.S. national policy on energy must be coordinated with U.S. foreign policy. The Department of State has not participated in a substantive way in negotiations between oil companies and producing countries. The Department has traditionally tried to use its influence to promote an environment conducive to U.S. private investment abroad, but at the same time avoided direct involvement with private industry. The Department tried unsuccessfully to conclude agreements with Western Hemisphere producing nations for a continuing oil supply, but did not attempt such agreements with Eastern Hemisphere countries. It is clear from the results of recent negotiations between oil companies and producing nations, coupled with U.S. policy towards Israel, that the U.S. has been left with a less secure supply of oil than before. *Recommendations:* In view of the highly volatile situation in the Middle East at the time of the report, GAO deferred specific recommendations. (DJM)

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[*The Purchase of Short-Supply, Energy-Related Items through the Export-Import Bank of the United States*]. B-178205. October 4, 1974. 2 pp. + enclosures (2 pp.).
Report to Sen. Lloyd M. Bentsen; by Elmer B. Staats, Comptroller General.

Organization Concerned: Export-Import Bank of the United States; Department of Commerce; National Advisory Council on International Monetary and Financial Policies; Federal Energy Administration.
Congressional Relevance: *Sen.* Lloyd M. Bentsen.

Neither the Federal Energy Administration (FEA) nor the Department of Commerce has attempted to maintain a list of officially designated short-supply items used in domestic energy activities. Both agree that energy-related items currently recognized as being in short supply are tubular goods (well casing and tubing, drill pipe, and line pipe) and drilling rigs. *Findings/Conclusions:* The Export-Import Bank of the United States (Eximbank), from June 10 to July 31, 1974, approved one transaction involving the export of such short-supply items. The approval committed Eximbank to make a 7% loan of $31,043,000 to help finance $68,984,000 in exports to Algeria, consisting of 20 drilling rigs and 91 trucks. Before Eximbank approves an application for financing energy-related exports, it submits the proposed transaction to FEA and the National Advisory Council on International Monetary and Financial Policies (Council) for their review. FEA submits its recommendation to the Council, which then decides by a majority vote of its members whether the transaction should be approved. Eximbank is not required to abide by the Council's decision. Eximbank only contacts other agencies through the Council. On June 31, 1974, Eximbank was considering 38 transactions involving potential exports of the short-supply items. Subsequent to June 10, 1974, Eximbank had not made any commitments to finance energy-related equipment determined to be in short supply by FEA or the Council. (Author/QM)

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Economic Implications of Current World Oil Prices. 53 pp.
Staff study. March 1975.

Organization Concerned: Organization of Petroleum Exporting Countries.

The four-fold increase in oil prices set by the Organization of Petroleum Exporting Countries (OPEC) is causing an unprecedented disequilibrium in international payments and corresponding transfer of wealth. *Findings/Conclusions:* Major OPEC countries are unable to spend their accumulated financial reserves, which could reach $650 billion by 1980 (World Bank figure). Possible outlets for oil revenues include: internal economic development; imports of goods and services, including military equipment and training; assistance to developing countries; and investments in other countries and private and international institutions. Foreign investment in industrialized countries has the greatest potential for using surplus oil revenues. The United States is attempting to reduce dependence on imported oil and is seeking to increase exports to OPEC countries. Consumer conservation may have some effect on our dependency on OPEC. The United States may involve itself more heavily in the international oil market. The future level of oil prices is uncertain; high oil prices may not be maintained indefinitely. Lower world prices would ease the balance-of-payments financing problems for oil importers. (DJM)

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Allocation of Uranium Enrichment Services to Fuel Foreign and Domestic Nuclear Reactors. ID-75-45; B-181963. March 4, 1975. *Released* May 21, 1976. 19 pp. + 5 appendices (8 pp.).
Report to Rep. Thomas E. Morgan, Chairman, House Committee on International Relations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Department of State.
Congressional Relevance: *House* Committee on International Relations.
Authority: Atomic Energy Act of 1954 (42 U.S.C. 2011).

Recent Presidential commitments caused the Atomic Energy Commission (AEC) to sign provisional contracts to provide uranium enrichment services to fuel nuclear reactors in Egypt, Israel, and Iran. At the same time, the AEC was holding domestic requests for such services in abeyance. *Findings/Conclusions:* The demand for enrichment services at June 30, 1974, for executed and pending contracts was greater than available capacity. As a result, all such long-term contracts were suspended except those with Egypt, Israel, and Iran. This deviated from the historical policy of access on a chronological basis for all buyers, and contracts with a number of foreign countries were abridged. Conditional contracts were offered to 45 foreign countries, depending on approval by the AEC for recycling plutonium produced as a reactor byproduct as fuel. Foreign policy will be adversely affected if the United States does not execute these conditional contracts. The new AEC policy to terminate further long-term Government contracts together with the private sector's lack of a firm commitment to build has introduced uncertainty as to future U.S. supply and may have encouraged the emergence of foreign supply sources. Consequently, the United States may lose significant balance-of-payments benefits from these sales, as well as the leverage that a dominant supplier has in internationsl relations concerning nuclear policies and nonproliferation of weapons. (DJM)

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U.S. Financial Assistance in the Development of Foreign Nuclear Energy Programs. ID-75-63; B-181963. May 23, 1975. 5 pp. + 7 appendices (23 pp.).
Report to Rep. Thomas E. Morgan, Chairman, House Committee on International Relations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Atomic Energy Commission; Agency for International Development; Export-Import Bank of the United States; International Atomic Energy Agency.
Congressional Relevance: *House* Committee on International Relations.
Authority: Atomic Energy Act of 1954 (42 U.S.C. 2011). Foreign Assistance Act of 1974 (P.L. 93-559). H. Res. 1189 (93rd Cong.). H. Res. 1219 (93rd Cong.).

The United States may assist foreign countries in the development and utilization of atomic energy for peaceful purposes. *Findings/Conclusions:* Agreements for the peaceful application of atomic energy are in effect with 29 foreign countries, the International Atomic Energy Agency, and the European Atomic Energy Community (EURATOM). Since the beginning of the international program, the United States has exported billions of dollars worth of nuclear-related goods and services. As of June 1974, the annual export value of nuclear plants and related equipment was about $1 billion. A number of financial arrangements under various programs of several Government agencies have been used for U.S. nuclear exports. At present no single Government agency maintains financial information on an individual agreement basis for all nuclear exports, nor is information on private financial participation readily available within the Government. However, a compilation on U.S. financial assistance is provided on an individual agency basis. International lending institutions have not been significantly involved in financing nuclear projects. U.S. Government financial assistance to foreign countries or international organizations has primarily involved the Atoms for Peace program, the Agency for International Development, the Atomic Energy Commission, The Export-Import Bank, the International Atomic Energy Agency, and the Arms Control and Disarmament Agency. (DJM)

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Role of the International Atomic Energy Agency in Safeguarding Nuclear Material. ID-75-65; B-181963. July 3, 1975. 34 pp. + 5 appendices (10 pp.).
Report to Rep. Thomas E. Morgan, Chairman, House Committee on International Relations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Department of State; International Atomic Energy Agency.
Congressional Relevance: *House* Committee on International Relations.
Authority: Atomic Energy Act of 1954 (42 U.S.C. 2011). Atomic Energy Act of 1946.

The International Atomic Energy Agency (IAEA), an autonomous Agency under the aegis of the United Nations, administers an international nuclear safeguards program designed to detect diversion of nuclear materials for nonpeaceful purposes. *Findings/Conclusions:* Membership in the IAEA does not obligate any of the 106 member countries to accept safeguards on its nuclear facilities. The Agency's safeguards system consists of material accountability, on-site inspections, and surveillance and containment devices such as cameras and seals. The principle is that the detection capability would deter a would-be diverter. However, the scope and applicability of inspections are limited because the safeguards are designed to detect diversions on a national level only, do not include physical protection, and do not provide for detecting clandestine facilities or retrieving diverted material. Problems in administering and implementing the safeguards system relate to: adequacy of countries' accountability records, need for better detection devices, equitable distribution of costs among members, and political problems and differing agreements with members. The real effectiveness of Agency safeguards is not known. Effective safeguards depend largely on international goodwill. The question of whether U.S. interests are best served through bilateral or Agency safeguards is difficult to answer. (DJM)

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Natural Gas Shortage: The Role of Imported Liquefied Natural Gas. ID-76-14; B-178205. October 17, 1975. 35 pp. + 3 appendices (10 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of the Interior; Federal Energy Administration; Federal Power Commission.
Congressional Relevance: Congress.
Authority: Natural Gas Act of 1938, as amended (15 U.S.C. 717-717w). Federal Energy Administration Act of 1974 (P.L. 93-275). Energy Reorganization Act of 1974 (P.L. 93-438).

Worldwide natural gas reserves are plentiful, but U.S. reserves have been declining since 1967 because new discoveries have not kept pace with domestic production. Gas shortages have necessitated curtailment of deliveries and conservation efforts, and the shortage is expected to increase. *Findings/Conclusions:* Before alternative sources of energy can be developed, economic and environmental problems must be overcome. Increasing oil imports raises political, economic, and national security questions. Deregulation of natural gas prices will have an uncertain effect on domestic gas production. Consumers' conservation measures have reduced overall gas use by about 5% but conservation alone cannot eliminate the shortfall. Problems associated with importing liquefied natural gas are: (1) its short-term contribution to domestic supply will be minimal; (2) a capital investment of about $11 billion may be required to construct the necessary tankers and receiving terminals; (3) the same risks associated with large oil imports exist; and (4) the cost of imports would add about $4 billion annually to U.S. balance-of-payments outflow. (HTW)

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[*Role of the International Atomic Energy Agency in Safeguarding Nuclear Material*]. January 30, 1976. 16 pp.
Testimony before the Senate Committee on Government Operations; by J. K. Fasick, Director, International Div.

Organization Concerned: International Atomic Energy Agency.
Congressional Relevance: *Senate* Committee on Government Operations.

The growth of nuclear power has focused attention on the potential diversion of nuclear material from peaceful activities to development of explosive devices. The United States initially established bilateral safeguards to prevent such diversion, but, since the inception of the International Atomic Energy Agency, has almost completely phased out its bilateral program in favor of international safeguards. Membership in the Agency does not obligate a country to accept safeguards, and there are limitations in scope and applicability of inspections. Safeguards are designed only to detect diversions on the national level with the assumption that terrorist groups will be dealt with by member nations. Safeguards do not include physical protection for transport of nuclear waste. The Agency does not have authority to seek out undeclared facilities or retrieve materials. Congressional committees and executive branch officials should consider: the need for expanding Agency responsibilities in physical protection of nuclear material; the technical and political limitations in applying Agency safeguards; the lack of strong penalties for diversion of nuclear material; and the desirability of proposing that the Agency publish an annual report related to amounts of nuclear materials subject to safeguards and unaccounted for during inspections. (HTW)

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U.S. International Nuclear Safeguards Rights: Are They Being Effectively Exercised? (Unclassified Digest). ID-76-21. February 9, 1976.
Released May 3, 1977.
Report to the House Committee on International Relations; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; European Atomic Energy Community; International Atomic Energy Agency.
Congressional Relevance: *House* Committee on International Relations.

Agreements with foreign nations in which the United States supplies nuclear materials and facilities generally provide the United States with rights to make sure that these exports are not diverted for unauthorized purposes. *Findings/Conclusions:* The United States has been relying mainly on international safeguards applied by the European Atomic Energy Community (EURATOM) and the International Atomic Energy Agency. The United States has not taken adequate steps to insure effective implementation of these safeguards, and sufficient information was not supplied by the international organizations to determine effectiveness. EURATOM and the Agency have negotiated but not yet implemented an agreement providing for future Agency verification of EURATOM safeguards. Issues relating to the reinstatement and continuation of U.S. safeguards rights were in need of clarification. These rights were considered important as a fallback in case the Agency safeguard system collapses. *Recommendations:* Consideration should be given to: (1) developing methods for assuring the effectiveness of international safeguards; and (2) providing Congress with an analysis of bases for reinstating U.S. safeguards rights and clarifying possible confusion on extension of these rights. Representatives from the U.S. intelligence community might consider providing a briefing on effectiveness of international versus U.S. bilateral safeguards. (HTW)

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[*The Exportation of Coal*]. B-178205; OSP-76-17. April 14, 1976. 7 pp.
Report to Frank G. Zarb, Administrator, Federal Energy Administration; by Monte Canfield, Jr., Director, Energy and Minerals Div.

Organization Concerned: Bureau of Mines; Geological Survey.
Authority: Federal Energy Administration Act of 1974 (P.L. 93-275). Trade Act of 1974 (P.L. 93-618).

Coal is by far the United States' most abundant energy resource, and it is expected to play an important role in the Nation's future energy picture. If past coal export trends continue, the availability of coal for future domestic use could be limited. *Findings/Conclusions:* Most of the metallurgical coal exports are a type identified as low volatile bituminous coal, which, according to some users, is in critical supply. Users who depend upon this type of coal in their steelmaking process feel that there should be a more detailed monitoring system than is currently being maintained by the Government. Department of Commerce officials, however, feel that there is insufficient justification to obtain data beyond the present system. At the present time, Federal Energy Administration (FEA) data on coal exports are limited to that being compiled by the Department of Commerce. As a result, neither of the agencies can determine how much low volatile bituminous coal is being exported. *Recommendations:* FEA should collect and maintain detailed information on transactions involving coal exports. A sufficient sample of the transactions can be acquired by requesting the information from the 14 exporters who comprise 85% of the coal export market. This information should at least show exports by the three categories of volatility to identify whether controls must be implemented.

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Can the U.S. Breeder Reactor Development Program Be Accelerated by Using Foreign Technology? RED-76-93; B-164105. May 6, 1976. 47 pp. + 8 appendices (95 pp.).
Report to Sen Hubert H. Humphrey, Chairman, Joint Economic Committee; by Elmer B. Staats, Comptroller General.

Organization Concerned: Energy Research and Development Administration; Nuclear Regulatory Commission.
Congressional Relevance: *Joint* Economic Committee.
Authority: Freedom of Information Act (5 U.S.C. 552).

Development of the liquid metal fast breeder reactor has been given high priority by the United States, Britain, France, the Federal Republic of Germany, the Soviet Union, and Japan. Because of lack of energy resources, most countries are operating on tighter time frames than the United States. *Findings/Conclusions:* The approach of the Energy Research and Development Administration (ERDA) contrasts with that of other countries in emphasizing development of competitive industry and developing a technological base before building plants. The United States could profit from exchange agreements by obtaining increased data and information from other programs and avoiding duplication. Factors impeding technology exchange include: foreign reluctance to furnish data of possible commercial value; foreign views that U.S. information will not be commercially valuable; concerns about the Freedom of Information Act; and possible U.S. problems related to balance of payments, dependence on foreign energy sources, and licensing. Although some information has been exchanged, this will become increasingly difficult as programs approach commercial status. It is unrealistic to expect that the U.S. program could be greatly accelerated or that large amounts of money would be saved through exchanges. However, efforts in certain areas offering the most potential should be continued. *Recommendations:* ERDA should seek legislation exempting data acquired through international technology agreements from disclosure provisions of the Freedom of Information Act. (HTW)

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International Cooperation in Energy Research and Development. July 2, 1976. 13 pp.
Testimony before the House Committee on Science and Technology: Energy Research, Development and Demonstration Subcommittee; by Phillip S. Hughes, Assistant Comptroller General.

Organization Concerned: Energy Research and Development Administration; Nuclear Regulatory Commission.
Congressional Relevance: *House* Committee on Science and Technology: Energy Research, Development and Demonstration Subcommittee.
Authority: Freedom of Information Act.

GAO work in international energy cooperation has dealt with sale of U.S. uranium enrichment services to foreign countries and the exchange of technology on breeder reactor development. In a report on uranium enrichment sales, concerns were expressed about the declining role of the United States in this area. A report on breeder reactors addressed the question of whether U.S. development could be accelerated by using foreign technology. The United States has had agreements to exchange technology and can benefit by obtaining increased data and information from other programs and avoiding duplication. Factors impeding technology exchange include: foreign reluctance to furnish data of possible commercial value; concerns about the Freedom of Information Act; tighter time frames imposed in foreign programs; potential licensing problems; language difficulties; lack of travel funds; and national pride and security. Exchange will become more difficult as programs approach commercial status, and it is unrealistic to expect that the U.S. program could be greatly accelerated or large amounts of money could be saved through exchanges. However, efforts in areas offering the most potential should be continued. (HTW)

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Assessment of United States and International Controls over the Peaceful Uses of Nuclear Energy. ID-76-60; B-181963. September 14, 1976.- 85 pp. + appendices (56 pp.).
Report to the Congress; by Elmer B. Staats, Comptroller General.

Organization Concerned: Arms Control and Disarmament Agency; Energy Research and Development Administration; Nuclear Regulatory Commission; International Atomic Energy Agency; European Atomic Energy Community.
Congressional Relevance: Congress.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438). Atomic Energy Act. Export Administration Act of 1969. Executive Order 11902.

The development of nuclear technology in foreign countries is of concern because of the potential for nuclear weapons proliferation and dangers of theft and sabotage. *Findings/Conclusions:* United States and international controls over peacetime uses of nuclear energy were found to be inadequate in many respects. In spite of U.S. efforts to seek improvements in international safeguards and physical security of nuclear materials, weaknesses exist in the effectiveness of international organizations in implementing safeguards. Some countries have not ratified the Treaty on the Non-Proliferation of Nuclear Weapons. Nuclear suppliers' efforts to achieve common export policies do not require Congressional ratification. International safeguards are designed only to detect diversions of nuclear material on a national level, and it is possible for a country to circumvent safeguards without sufficient information concerning their effectiveness. Action available to the International Atomic Energy Agency is limited if a country were to divert nuclear material from peaceful purposes. The United States is not reserving its rights as a fallback to international safeguards The U.S. peaceful nuclear export licensing and regulatory control program is fragmented among agencies.
Recommendations: The Energy Research and Development Administration, with the Department of State, should provide Congress with an assessment of circumstances in which U.S. safeguards could be reinstated. Congress should: (1) make future U.S. nuclear cooperation contingent upon adherence to the Non-Proliferation Treaty or agreement to international safeguards with certain exceptions; (2) insist on congressional review of binding arrangements; (3) reserve U.S. safeguard rights; and (4) clarify intent concerning decisionmaking where disagreements with the Nuclear Regulatory Commission occur. (HTW)

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U.S. Nuclear Non-Proliferation Policy; A Comparison of GAO and Executive Branch Positions. 1D-77-7. January 6, 1977. 2 pp. + enclosure (9 pp.).
Report to the Senate Committee on Government Operations; the Senate Committee on Foreign Relations; the House Committee on International Relations; Joint Committee on Atomic Energy; by Elmer B. Staats, Comptroller General.

Organization Concerned: Department of State; Nuclear Regulatory Commission; Energy Research and Development Administration; Department of Commerce.
Congressional Relevance: *House* Committee on International Relations; *Senate* Committee on Foreign Relations; *Senate* Committee on Government Operations; *Joint* Committee on Atomic Energy.

A comparison was made of an Administration policy statement on nuclear proliferation with a GAO Report "Assessment of U.S. and International Controls over the Peaceful Uses of Nuclear Energy," ID-76-60. There was general agreement on the need for more effective controls to curb nuclear weapons proliferation, but the executive branch response did not indicate plans for action on specific GAO recommendations. Recommendations in the GAO report were designed to strengthen U.S. agreements for cooperation, upgrade nuclear safeguards, control exports, and guide future U.S. strategy.
Findings/Conclusions: Although the Administration statement took a positive approach by directing negotiations that would bring existing agreements into conformity with international and new U.S. criteria, the statement was not specific enough. The Administration supported recommendations for upgrading safeguards, but disagreed with the need for some of the procedures for inspection evaluation and monitoring. The Administration agreed with the need for export controls, but legislation to this effect was not enacted. *Recommendations:* Agreements for nuclear cooperation should stress adherence to the Non-Proliferation Treaty and submission to full fuel cycle safeguards. U.S. nuclear export policy should be more clearly defined. (HTW)

Appendix 1

Federal Program Evaluations on Energy

Citations in this appendix are extracted from *Federal Program Evaluations; a Directory for the Congress.* (1976 Congressional Sourcebook Series) PAD-77-5, 1976.

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Conservation Division Task Force Report on the Onshore Lease Management Program Study for the U.S. Geological Survey.
A. D. Acuff, and others. May 1975. 120 pp. + appendices.

Authority: Mining Law of 1872 (30 U.S.C. 22). Mineral Leasing Act of 1920, as amended (P.L. 86-705; 30 U.S.C. 181). Mineral Leasing Act for Acquired Lands (P.L. 80-382; 30 U.S.C. 351).
Data Base Reference: E-00712-008

This task force report on the 'Onshore Lease Management Program Study' recommends that 66 of the 79 National Aeronautics and Space Administration recommendations be fully adopted, 11 be adopted with some change, and that only two recommendations not be adopted. Areas covered include objectives, policies, and procedures; organizations, personnel, and funding; management information systems; plans, controls, and communications; training; inspection, enforcement, and supervision; regulations; operating orders and technical standards; legislation and lease terms; fair market value; safety; environmental analyses and statements; external relationships; and additional task force recommendations. Task force recommendations are related to division resource evaluation activities and a study of division organization.

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Onshore Lease Management Program Study for the U.S. Geological Survey.
National Aeronautics and Space Administration. December 20, 1974. 91 pp. + appendices.

Authority: Mining Law of 1872 (30 U.S.C. 22). Mineral Leasing Act of 1920, as amended (P.L. 86-705; 30 U.S.C. 181). Mineral Leasing Act for Acquired Lands (P.L. 80-382; 30 U.S.C. 351).
Data Base Reference: E-00712-007

A study of the Onshore Lease Management Program indicates a need for improvement in several key areas: policies, procedures, and technical standards; organization and staffing; plans and controls; management information systems; internal communication; personnel; inspection; enforcement; supervision of operators; legislation and regulations; fair market value; safety and other areas, including the use of helicopters, computer terminals, the assurance of ethical conduct, contracting for work, relations with other organizations, relationship with the Outer Continental Shelf (OCS) program, and burden of proof.

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[*Reports of the Review Committee on Safety of Outer Continental Shelf Petroleum Operations to the United States Geological Survey*].
George F. Mechlin, and others. Washington: Marine Board, National Academy of Engineering, 1974-1975.

Authority: Outer Continental Shelf Lands Act (P.L. 83-212; 43 U.S.C. 1332).
Data Base Reference: E-00712-001, E-00712-002, E-00712-003

Three reports, each containing recommendations, were prepared on different aspects of the Review Committee's work. The first report (Jan. 1974, 7 pp.) summarizes committee activities, which focused on five areas: a technical review of selected draft standards and specifications; the application of system analysis techniques to offshore oil and gas operations; the U.S. Geological Survey (USGS) Safety Alert Notices System; extension of the Survey's OCS (Outer Continental Shelf) Order No. 8 to include Caisson-type structures; and a preliminary look at the conduct and planning for environmental baselines. The second report (June 1974, 20 pp.) focuses on three issues: policy and program planning by the USGS for the assurance of safety and pollution control in OCS petroleum operations; implementation actions and priority assignments by the USGS on the basis of safety study recommendations; and application of system analysis techniques to offshore oil and gas operations. The third report (Mar. 1975, 12 pp.) concerns three topics: standards development for OCS operations; inspection strategies for use in the OCS; and methods for determining the condition of existing pipelines.

252

Reports of the Work Group on OCS Safety and Pollution Control.
W. A. Radlinski, and others. May 1973. 33 pp. + appendix. Supplements issued in 1974.

Authority: Outer Continental Shelf Lands Act (P.L. 83-212; 43 U.S.C. 1332).
Data Base Reference: E-00712-004, E-00712-005, E-00712-006

This report provides the results of the U. S. Geological Survey (USGS) Work Group review of the findings of three studies on improving safety and pollution control in the management of Outer Continental Shelf (OCS) oil and gas operations. Each section contains the related recommendations from the three study reports, some remarks, the Work Group's recommendations and the implementation action required. Supplement number 1 (May 1974, 17 pp.) is a response to recommendations of the report "Energy Under the Oceans," a technological assessment of Outer Continental Shelf (OCS) oil and gas operations. This report contains 39 recommendations. All of the recommendations, except those over which the U. S. Geological Survey has no control, are discussed in the supplement. The second supplement (November 1974, 12 pp.) is a response to the pertinent recommendations of the report, "OCS Oil and Gas–An Environmental Assessment," April 1974, which is the result of a study of the environmental impact of oil and gas production on the Atlantic Outer Continental Shelf and the Gulf of Alaska.

253

Review of Royalty Accounting System for Onshore Oil and Gas Leases.
June 9, 1975. 106 pp. + appendix.

Authority: Mining Law of 1872 (30 U.S.C. 22). Mineral Leasing Act of 1920, as amended (P.L. 86-705; 30 U.S.C. 181). Mineral Leasing Act for Acquired Lands (P.L. 80-382; 30 U.S.C. 351).
Data Base Reference: E-00712-013

This report summarizes the deficiencies in the Geological Survey

Conservation Division Royalty Accounting System (RAS) for onshore oil and gas, and makes related recommendations. The principal reasons for the operational and procedural problems is a chronic understaffing problem; a staff increase of 37 positions is recommended. The following additional recommendations are made: (1) requirement of an established reporting package from each lessee, including essential sale and production data, submission of purchaser's report, and use of Federal lease identification numbers; (2) conversion of companies having the capability and volume to magnetic tape; (3) establishment of standard remittance advice; (4) various improvement to provide meaningful accounting records and statements of account; (5) establishment of standard procedures for error correction and computer input, including recognition of persistent errors by companies; (6) establishment of procedures for monitoring and collection of delinquent payments, and meaningful penalties; (7) initiation of a policy of immediate response to late reports, and establishment of significant penalties; (8) emphasizing an annual post-audit review of accounts; (9) application of all royalty payments directly to lease accounts; (10) provision of staff capability and expertise, especially a single production valuation team; and (11) various improvements dealing with operating inefficiencies in area accounting offices.

254

Royalty Accounting System Study of Solid Mineral Leasing Activities. August 11, 1975. 24 pp. + appendix.

Authority: Mining Law of 1872 (30 U.S.C. 22). Mineral Leasing Act of 1920, as amended (P.L. 86-705; 30 U.S.C. 181). Mineral Leasing Act for Acquired Lands (P.L. 80-382; 30 U.S.C. 351).

Data Base Reference: E-00712-014

This report summarizes the deficiencies in the Geological Survey Conservation Division royalty accounts system for solid mineral leasing activities, and provides recommendations for their improvement. Except for certain weaknesses in internal control, the system is procedurally adequate to account for and collect royalties on leasable solid minerals from Federal lands. The basic system for internal control over the accounting and collection functions is inadequate to assure that all royalty payments are properly collected, deposited, and recorded in the lease accounting records. Since one person in each office is solely responsible for this accounting, no system of checks and balances exists. It is recommended that collection, accounting, and billing of royalty receipts be separated in the offices. Division officers are not maximizing the use of the independent financial audit; a formalized package of audit report requirements should be established. Officials are not requiring all leasees to adhere to the royalty reporting and payment provisions of their leases; strict enforcement should be maintained to avoid unnecessary interest expense. Revenue from the majority of Indian solid mineral leases has not been placed under any formalized system of accounting control. These leases should be placed under the control of the royalty accounting system.

Appendix 2

Requirements for Recurring Reports to the Congress on Energy

Citations in this appendix are extracted from *Requirements for Recurring Reports to the Congress; a Directory issued by the Comptroller General for the period through June 30, 1976.* (1977 Congressional Sourcebook Series) PAD-77-61. 1977.

DEPARTMENT OF COMMERCE

255

The Economic Impact of Energy Actions; Semiannual Report (Joint Report with Department of Labor and Federal Energy Administration).
Frequency/Due Date: Semiannually / Unspecified.
Agency Contact: Bureau of Domestic Commerce. (202) 377-4273.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *House* Committee on Science and Technology; *Senate* Committee on Energy and Natural Resources; *Joint* Committee on Atomic Energy; *Joint* Economic Committee.
Authority: Federal Energy Administration Act of 1974 (P.L. 93-275, § 18(d); 88 Stat. 111; 15 U.S.C. 777).
Data Base Reference: R-00300-014

The report provides information on the impact of the energy shortage and actions taken by the Federal Energy Administration regarding employment and the economy. The report contains recommendations on whether additional Federal programs for employment and economic assistance should be put into effect to minimize the impact of the energy shortage and any action thus taken. The report examines the evolution of the energy shortage and the economic effects of the mandatory petroleum allocation and price regulations, and develops a conceptual framework that will govern future reports.

256

Report to the Congress on Coastal Zone Management.
Frequency/Due Date: Annually / November 1.
Agency Contact: National Oceanic and Atmospheric Administration. (202) 634-4257.
Congressional Recipient: *House* Committee on Merchant Marine and Fisheries; *Senate* Committee on Commerce, Science and Transportation.
Authority: Coastal Zone Management Act of 1972 (P.L. 92-583, § 313(a); 86 Stat. 1288; 16 U.S.C. 1426(a)).
Data Base Reference: R-00306-002

This report contains a summary of activities of the Office of Coastal Zone Management during the preceding fiscal year, detailing program developments and implementation.

DEPARTMENT OF THE ARMY

257

Solid Waste Management, Collection, Disposal, Resource Recovery, Recycling Program. DD-I&L(A)1436.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Corps of Engineers. (202) 693-6458.
Congressional Recipient: *House* Committee on Armed Services; *Senate* Committee on Armed Services.
Authority: (P.L. 93-552; 88 Stat. 1759).
Data Base Reference: R-00403-025

This report describes environmental improvement and energy conservation projects (involving recycling of materials) active at military camps, posts, and bases. The cost of these projects is limited to $50,000/installation/year. (MN)

DEPARTMENT OF THE NAVY

258

Quarterly Report of Production from the Naval Petroleum and Oil Shale Reserves.
Frequency/Due Date: Quarterly / 30 days after end of quarter.
Agency Contact: Naval Petroleum and Oil Shale Reserves. (202) 692-0600.
Congressional Recipient: *House* Committee on Armed Services; *Senate* Committee on Armed Services.
Authority: (P.L. 87-796, § 1(10); 76 Stat. 906; 10 U.S.C. 7434).
Data Base Reference: R-00404-008

This report lists the quantity of oil, gas, gasoline, and other associated hydrocarbons, produced from Naval Petroleum and Oil Shale Reserves. Gross production is listed for California, including leased lands; Wyoming; Alaska; and Colorado.

259

All Purchases and Condemnation Proceedings Regarding the Naval Petroleum and Oil Shale Reserves.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Naval Petroleum and Oil Shale Reserves. (202) 692-0600.
Congressional Recipient: *House* Committee on Armed Services; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Armed Services; *Senate* Committee on Energy and Natural Resources.
Authority: (P.L. 84-1028; 70A Stat. 458; 10 U.S.C. 7425(b)).
Data Base Reference: R-00404-017

This report provides data related to private lands on purchase and condemnation actions taken the previous year by the Secretary of the Navy. Rationale for purchases and/or condemnation is the conservation of naval petroleum and oil shale reserves. (MN)

260

Recycling of Materials. DDI&L(A)1436.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Office of the Chief of Naval Operations. (202) 697-3689.
Congressional Recipient: *House* Committee on Armed Services; *Senate* Committee on Armed Services.
Authority: (P.L. 93-552; 88 Stat. 1759).
Data Base Reference: R-00404-022

This report describes environmental improvement and energy conservation projects (involving recycling of materials) active at military camps, posts, and bases. The cost of these projects is limited to $50,000/ installation/year. (MN)

261

Protection of Oil Reserves; Contracts for Conservation.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Naval Petroleum and Oil Shale Reserves. (202) 692-0600.
Congressional Recipient: *House* Committee on Armed Services; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Armed Services; *Senate* Committee on Energy and Natural Resources.
Authority: (P.L. 87-796; 76 Stat. 905; 10 U.S.C. 7424(b)).
Data Base Reference: R-00404-023

This report describes the Navy's efforts to conserve and protect naval petroleum and oil shale reserves by contracting with the appropriate persons to conserve the resources and to compensate them for estimated drainage in lieu of drilling and operating wells or by acquiring the property in exchange for stated reimbursements. (MN)

262

Annual Report to Congress on Naval Petroleum and Oil Shale Reserves.
Frequency/Due Date: Annually / 1st day of fiscal year.
Agency Contact: Naval Petroleum and Oil Shale Reserves. (202) 692-0600.
Congressional Recipient: *House* Committee on Armed Services; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Armed Services; *Senate* Committee on Energy and Natural Resources.
Authority: Naval Petroleum Reserves Production Act of 1976 (P.L. 94-258; 90 Stat. 311; 10 U.S.C. 7431(b)(c)).
Data Base Reference: R-00404-024

This report concerns naval petroleum and oil shale reserves. It describes the status of exploration and development, production and proceeds from same, transportation facilities involved in projects related to the reserves, and a summary of future plans. (MN)

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

263

Report on Solar Energy Demonstration.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Bureau of Policy Development and Research. (202) 755-5544.
Congressional Recipient: *House* Committee on Banking, Finance and Urban Affairs; *Senate* Committee on Banking, Housing and Urban Affairs.
Authority: Housing and Community Development Act of 1974 (P.L. 93-383, § 814; 88 Stat. 738; 12 U.S.C. 1701z-5(c)).
Data Base Reference: R-00600-009

This report is to summarize solar energy demonstrations carried out under the authority of Section 506 of Title V of the Housing and Urban Development Act of 1970. It should also include information on the economic and technical feasibility of the project.

264

[*Special Report on Solar Heating and Cooling Demonstration Program*].
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Bureau of Policy Development and Research. (202) 755-6443.
Congressional Recipient: *House* Committee on Banking, Finance and Urban Affairs; *Senate* Committee on Banking, Housing and Urban Affairs.
Authority: Solar Heating and Cooling Demonstration Act of 1974 (P.L. 93-409, § 12; 88 Stat. 1076; 42 U.S.C. 5510(d)).
Data Base Reference: R-00600-010

This special report is to summarize all of the current and projected activities of the various Federal agencies involved in implementing the Solar Heating and Cooling Demonstration Act of 1974. It is to present a comprehensive, overall view of the programs. The information contained in this report is duplicated in the Energy Research and Development Annual Report.

DEPARTMENT OF THE INTERIOR

265

Employee Disclosures under the Energy Policy and Conservation Act. AAI-C-114.
Frequency/Due Date: Annually / June 1.
Agency Contact: Office of Audit and Investigation. (202) 343-5745.
Congressional Recipient: Congress; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 962; 42 U.S.C. 6392(b)(2)).
Data Base Reference: R-00700-026

Certain employees of the Federal Energy Administration and/or of the Department of the Interior are required to file reports disclosing any "known financial interest" in some aspect of the coal, natural gas, or petroleum products business. This report deals with such disclosures and the actions taken, if any, in regard to the situations. (MN)

266

Commodity Data Summaries and Mineral Estimates. MIN-C-VOL2.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Bureau of Mines. (202) 634-1263.
Congressional Recipient: Congress; *House* Committee on Appropriations; *House* Committee on Interior and Insular Affairs; *House* Committee on Ways and Means; *Senate* Committee on Appropriations; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Finance; *Joint* Committee on Defense Production.
Authority: Voluntary.
Data Base Reference: R-00711-001

This report contains data sheets that provide information on the domestic mineral industry structure, Government programs, tariffs, and salient statistics for individual minerals, metals, and fuels. Also included is information of domestic production and use; import sources; depletion allowances; events, trends, and issues; world plant production and capacity; and world resources.

267

Mining and Minerals Policy. MIN-C-33.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Bureau of Mines. (202) 634-8697.
Congressional Recipient: Congress; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources; *Joint* Committee on Defense Production.
Authority: Mining and Minerals Policy Act of 1970 (P.L. 91-631; 84 Stat. 1876; 30 U.S.C. 21a).
Data Base Reference: R-00711-003

This report offers a brief overview of energy and minerals supplies, along with recommendations for action. The United States annually requires over two billion tons each of nonfuel mineral materials and fuel minerals. Factors influencing our energy, metals, and nonmetallic minerals are discussed, and include international aspects, national minerals inventory, mineral resources and reserves, environmental considerations, marine mining, health and safety, transportation infrastructure, research and development, and others. Trends and events are discussed for energy fuels, major nonferrous and ferrous metals, fertilizer materials, and nonmetallic construction materials. The following recommendations are suggested for implementation by various Federal agencies through rescheduling less urgent work to reprogram funds: 1) continued analysis of selected minerals to assess items of concern and impacts of potential shortages, 2) determination of alternate objectives for excess defense materials, 3) continued improvement of data and analysis programs, 4) clarification of troublesome points in mining health and safety legislation and encouragement of production in arduous mining conditions, 5) removal of legislative and administrative distortions and encouragement of use of recycled materials, and 6) encouragement of private research and development.

268

Report to the Congress on Matters Contained in the Helium Act. MIN-C-37.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Bureau of Mines. (202) 634-4734.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Helium Act (P.L. 86-777; 74 Stat. 923; 50 U.S.C. 167n).
Data Base Reference: R-00711-006

This report contains information on the current status of the Government's helium program, including financial, statistical, and operating information. Specifically, the report provides information on helium conservation, production, and distribution; engineering studies and special projects; litigation; and helium program expenditures, income, and financial condition, as well as various statistical tables.

269

Refunds on Outer Continental Shelf Leases. GEO-C-29.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Geological Survey. (703) 860-7511.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Outer Continental Shelf Lands Act of 1953 (P.L. 83-212; 67 Stat. 469; 43 U.S.C. 1339(b)).
Data Base Reference: R-00712-002

The purpose of this report is to identify the recipients and the amount of refunds or credits proposed to be made to leasees for overpayments under the Outer Continental Shelf Lands Act and to provide a summary of facts leading to the determination for the refunds or credits.

270

Exploration of National Petroleum Reserve in Alaska. GEO-C-118.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Environmental Conservation. (703) 860-7491.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Naval Petroleum Reserves Production Act of 1976 (P.L. 94-258; 90 Stat. 305; 42 U.S.C. 6504(d)(2)).
Data Base Reference: R-00712-003

This report describes any new plans or substantial amendments to ongoing plans for the exploration of national petroleum reserves in Alaska. It also includes an evaluation of anticipated effects of such plans or amendments. (MN)

271

Progress of and Future Plans for Exploration of National Petroleum Reserve in Alaska. GED-C-119.
Frequency/Due Date: Annually / October 1.
Agency Contact: Environmental Conservation. (703) 860-7491.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Naval Petroleum Reserves Production Act of 1976 (P.L. 94-258; 90 Stat. 305; 42 U.S.C. 6504(d)(3)).
Data Base Reference: R-00712-004

This report describes the progress of and future plans for the exploration of national petroleum reserves in Alaska. It details such things as number of exploratory wells drilled and significant findings of petroleum resources. (MN)

272

[*Compensatory Royalty Agreements*]. BLM-C-3100-1.
Frequency/Due Date: Annually / Beginning of congressional session.
Agency Contact: Bureau of Land Management. (202) 343-7753.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Mineral Leasing Act Revision of 1960 (P.L. 86-705; 74 Stat. 783; 30 U.S.C. 226(g)).
Data Base Reference: R-00714-003

This report contains information on compensation agreements entered into by the United States whenever lands owned by the United States are being drained of oil or gas by wells drilled on adjacent lands.

273

Grants of Rights-of-Way for Pipelines through Federal Lands. BLM-C-071.
Frequency/Due Date: Annually / January.
Agency Contact: Division of Lands and Realty. (202) 343-8738.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Trans-Alaska Pipeline Authorization Act (P.L. 93-153; 87 Stat. 583; 30 U.S.C. 185(w)(2)).
Data Base Reference: R-00714-007

This report is notification of a request for a right-of-way through Federal lands for a pipeline 24 inches or more in diameter. It includes details regarding terms and conditions of the granting of the right-of-way. (MN)

274

[*Consolidated Financial Statement of the Federal Columbia River Power System*]. BPA-C-64.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Bonneville Power Administration. (503) 234-3361.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *House* Committee on Public Works and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Environment and Public Works.
Authority: Federal Columbia River Power System (P.L. 89-448; 80 Stat. 200; 16 U.S.C. 835j).
Data Base Reference: R-00718-001

This report presents a consolidated financial statement on a payout basis for the Federal Columbia River Power System. It demonstrates the adequacy of wholesale power rates by forecasting revenues, expenses, interest, and amortization for the next 75 years. Other factors considered are purchase and exchange power, investment placed in service, unamortized investment, allowable unamortized investment, irrigation assistance, and cumulative surplus revenues.

275

Annual Report on the Columbia River Power System. BPA-C-64A.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Bonneville Power Administration. (503) 234-3361.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *House* Committee on Public Works and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Environment and Public Works.
Authority: Voluntary.
Data Base Reference: R-00718-002

This report provides information on legislation affecting the Bonneville Power Administration, as well as information on rate increases, system control, the Hydro-Thermal Power Program, other hydro projects, the transmission system, research and development, and operations. In addition, the report provides information on sabotage attempts and successes, energy conservation, environmental suits filed, power sales, statistics on customer growth, finances, and revenues and expenses, as well as statements of finances and expenses, assets and liabilities, and changes in financial position.

DEPARTMENT OF JUSTICE

276
Review of Voluntary Agreement and Plan of Action To Implement the International Energy Program.
Frequency/Due Date: Semiannually / March 21; September 21.
Agency Contact: Antitrust Division. (202) 739-4173.
Congressional Recipient: *House* Committee on International Relations; *House* Committee on the Judiciary; *Senate* Committee on Foreign Relations; *Senate* Committee on the Judiciary.
Authority: Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 871; 42 U.S.C. 6201).
Data Base Reference: R-00801-006

This report reviews actions of private industrial groups in complying with voluntary agreements made related to the conservation of energy. The agreements are intended to implement an international energy program. The report includes information regarding the voluntary agreements as well as the groups' plans for action. (MN)

DEPARTMENT OF TRANSPORTATION

277
Annual Report of the Secretary of Transportation on the Administration of the Natural Gas Pipeline Safety Act of 1968.
Frequency/Due Date: Annually / March 17.
Agency Contact: Office of the Secretary. (202) 426-0135.
Congressional Recipient: *House* Committee on Appropriations; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations; *Senate* Committee on Commerce, Science and Transportation.
Authority: Natural Gas Pipeline Safety Act of 1968 (P.L. 90-481, § 14; 82 Stat. 728; 49 U.S.C. 1683).
Data Base Reference: R-01100-007

This report summarizes the administration of the Natural Gas Pipeline Safety Act of 1968 and covers the Department of Transportation's related activities. The Act is administered by the Office of Pipeline Safety. Amendments to the Federal pipeline safety standards provide greater flexibility in qualifying pipe for use and facilitate the transport of pipe by rail, clarify the definition of a gas service line, and continue odorization of gas in certain transmission lines. Increased State participation in safety programs was encouraged through administration of grants-in-aid funds and increased training activity. Compliance activities were accelerated to assure that all operators subject to the Act meet safety standards and reporting requirements. Research and study projects provided valuable technical information for Government agencies, the regulated industry, and the public. Pipeline safety information was disseminated through a monthly Advisory Bulletin and copies of all amendments, presentations of pipeline safety programs, and various information publications.

278
Review of Average Fuel Economy Standards under Title V of Motor Vehicle Information and Cost Savings Act.
Frequency/Due Date: Annually / January 15.
Agency Contact: National Highway Traffic Safety Administration. (202) 426-0846.
Congressional Recipient: *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Commerce, Science and Transportation.
Authority: Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 902; 15 U.S.C. 2002(a)(2)).
Data Base Reference: R-01107-006

Congress has established a scale (by year) of average fuel economy required for passenger automobiles manufactured after model year 1977. This report reviews the requirements of the scale, assesses manufacturers' ability to meet the standards for model year 1985, and contains recommendations for improving the fuel economy program. (MN)

ENVIRONMENTAL PROTECTION AGENCY

279
Resource Recovery and Source Reduction. RIN8700.021A.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Office of Solid Waste Management Programs. (204) 254-7840.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Environment and Public Works.
Authority: Resource Recovery Act of 1970 (P.L. 91-512, § 104(a); 84 Stat. 1229; 42 U.S.C. 3253(a)).
Data Base Reference: R-02304-003

This report presents a review of the Agency's investigations of the utilization of material, energy, and products recovered from solid waste and the reduction in the generation of waste through a reduction in material or product consumption. Also included are discussions about conservation of energy and material resources, protection of the quality of the physical environment, and economic effects. Chapters deal with projected trends in resource utilization, environmental pollution and solid waste generation that give impetus to consideration of resource recovery and source reduction measures; effects of existing Federal policies; markets for materials and energy recovered from post-consumer residential and commercial waste; product controls such as bans, standards, charges and deposits, directed at regulating the design or consumption of products; and studies of several special wastes: automobile, packaging, beverage containers, and rubber tires.

EXPORT-IMPORT BANK OF THE UNITED STATES

280
[*Submission of U.S.S.R. Energy-Related Transactions for Congressional Review*].
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Export-Import Bank. (202) 382-8400.
Congressional Recipient: *House* Committee on Banking, Finance and Urban Affairs; *Senate* Committee on Banking, Housing and Urban Affairs.
Authority: Export-Import Bank Amendments of 1974 (P.L. 93-646, § 5; 88 Stat. 2335; 12 U.S.C. 635(b)(3)).
Data Base Reference: R-02500-002

The Board of Directors of Eximbank may not finally approve any loan or financial guarantee or combination which equals or exceeds $25,000,000 for the export of goods or services involving research, exploration, or production of fossil fuel energy resources in the Union of Soviet Socialist Republics without submitting a detailed report to Congress describing and explaining the transaction. The report shall contain 1) a brief description of the purposes of the transaction, the identity of the party or parties requesting the loan or guarantee, the nature of the goods or services to be exported, and their intended use; and 2) a full explanation of the reasons for Bank financing of the transaction, amount of the loan to be provided by the Bank, approximate rate and repayment terms, and approximate amount of the guarantee.

FEDERAL ENERGY ADMINISTRATION

281
Monthly Energy Review.
Frequency/Due Date: Monthly / Unspecified.
Agency Contact: Office of Policy and Analysis. (202) 254-8705.

Congressional Recipient: Congress.
Authority: Voluntary.
Data Base Reference: R-02900-002

This report contains current time-series data and graphical displays of production and consumption of major sources of energy in the United States. Data are included on crude oil, natural gas, refined petroleum products, coal, fuel oil, gasoline, heating oil, and electricity.

282

Federal Energy Guidelines. Weekly Supplement.
Frequency/Due Date: Weekly / Unspecified.
Agency Contact: Office of Policy and Analysis. (202) 254-3564.
Congressional Recipient: Congress.
Authority: Voluntary.
Data Base Reference: R-02900-003

This report provides reliable, up-to-date information on the Federal Energy Administration's (FEA) energy policy and regulatory programs. It contains Federal energy laws, executive orders, FEA organizational outlines, regulations, rulings, forms, FEA advisory committees, exceptions, exemptions and appeals, and court decisions affecting the FEA program.

283

Energy Information Reported to Congress as Required by Public Law 93-319.
Frequency/Due Date: Quarterly / Unspecified.
Agency Contact: Office of Policy and Analysis. (202) 254-8705.
Congressional Recipient: Congress.
Authority: Energy Supply and Environmental Coordination Act of 1974 (P.L. 93-319, § 11; 88 Stat. 262; 15 U.S.C. 796(a)).
Data Base Reference: R-02900-004

This report contains summaries and statistical information on energy resource development of coal, natural gas, crude oil, and refined petroleum products. A section dealing with the development and operation of nuclear energy and nuclear power plants is also included.

284

Petroleum Market Shares; A Report on Retail Gasoline.
Frequency/Due Date: Monthly / Unspecified.
Agency Contact: Office of Policy and Analysis. (202) 254-7351.
Congressional Recipient: *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Energy and Natural Resources.
Authority: Emergency Petroleum Allocation Act of 1973 (P.L. 93-159, § 4; 87 Stat. 631; 15 U.S.C. 753).
Data Base Reference: R-02900-005

Based on a continuing national sample survey of gasoline service stations conducted by the Federal Energy Administration, this report contains information on the aggregate market shares of motor gasoline retailers. The following statistical tables are contained in the report: market shares of motor gasoline retailers; gallonage sales by marketer type; number of service stations and average sales by marketer type; and relative standard errors of gallonage sales estimates by percent.

285

Monthly Petroleum Statistics Report.
Frequency/Due Date: Monthly / Unspecified.
Agency Contact: Office of Policy and Analysis. (202) 254-7903.
Congressional Recipient: Congress.
Authority: Voluntary.
Data Base Reference: R-02900-006

This report contains data on production, import and stocks of crude oil, motor gasoline, jet fuels, and distillate and residual fuel oil. It also provides regional breakdowns of data on refinery operations and graphs of data on petroleum imports, crude runs-to-stills, heating oil stocks, motor gasoline stocks, refinery acquisition costs of crude oil, well-head prices of gasoline, home heating oil, and residual fuel.

286

The Federal Energy Administration: Quarterly Report on Private Grievances and Redress.
Frequency/Due Date: Quarterly / Unspecified.
Agency Contact: Office of Private Grievances and Redress. (202) 254-5134.
Congressional Recipient: Congress.
Authority: Federal Energy Administration Act of 1974 (P.L. 93-275, § 21(c); 88 Stat. 113; 15 U.S.C. 781).
Data Base Reference: R-02900-008

This report describes the nature and number of petitions for grievances and redress filed with the Federal Energy Administration (FEA) by those adversely affected by energy shortages or FEA regulations. Summaries of decisions are listed alphabetically by company in the appendix. Dismissed cases are also listed in the appendix, grouped according to reason for dismissal. Decision summaries for single and consolidated decisions are included in the appendix.

287

Financial Disclosures by Employees Performing Functions under Energy Policy and Conservation Act.
Frequency/Due Date: Annually / June 1.
Agency Contact: Office of General Counsel. (202) 961-8001.
Congressional Recipient: Congress; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Energy and Natural Resources.
Authority: Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 961; 42 U.S.C. 6392).
Data Base Reference: R-02900-009

This report surveys financial disclosure of employees performing duties under the Energy Policy and Conservation Act. Possible conflicts of interest reported by employees in the Federal Energy Administration or the Department of the Interior are reviewed, and enforcement actions are noted. Disclosure provisions apply to employees engaged in Federal energy activities who are in the business of exploring, developing, producing, refining, transporting, or distributing coal, natural gas, or petroleum products or who have interests in property from which coal, natural gas, or crude oil is commercially produced. (PR)

288

Action Proposed Concerning Conflict of Interest.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Office of General Counsel. (202) 960-8001.
Congressional Recipient: *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Energy and Natural Resources.
Authority: Federal Energy Administration Act of 1974 (P.L. 93-275(4)(i)(1)(A); 76 Stat. 1124; 15 U.S.C. 763(i)(1)(A)).
Data Base Reference: R-02900-010

This report describes procedures for invoking exemptions from conflict of interest provisions for employees of the Federal Energy Administration. A report which includes a detailed statement of the subject matter involved in the conflict; the nature of the employee's financial interest; or the name and statement of financial interest of each person who will come within such exemption must be submitted to Congress 10 days prior to each exemption. (PR)

289

Strategic Petroleum Reserve Plan.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Strategic Petroleum Reserve. (202) 634-5540.
Congressional Recipient: Congress; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 889; 42 U.S.C. 6245).
Data Base Reference: R-02901-001

This report describes the status of the Strategic Petroleum Reserve and summarizes the actions taken to develop and implement the Strategic Petroleum Reserve Plan and the Early Storage Reserve Plan. Included are an analysis of the impact and effectiveness of such actions on the vulnerability of the United States to interruptions in the supplies of petroleum productions; a summary of existing programs with respect to implementation of the Early Storage Reserve Plan and the Strategic Petroleum Reserve Plan; and recommendations for supplemental legislation. (PR)

290

Federal Energy Administration Annual Report to the President and Congress.

Frequency/Due Date: Annually / Unspecified.

Agency Contact: Office of Management. (202) 961-8536.

Congressional Recipient: Congress.

Authority: Federal Energy Administration Act of 1974 (P.L. 93-275, § 15(c); 88 Stat. 96; 15 U.S.C. 774).

Data Base Reference: R-02902-001

This report describes and analyzes the activities of the Federal Energy Administration (FEA). Chapter 1 comprises a review and analysis of the major activities in regulatory programs controlling pricing and allocation of crude oil, residual fuel oil, and refined petroleum products. The goals of these programs are those of the Emergency Petroleum Allocation Act of 1973. The hardships of these activities are to be shared as equitably as possible by the people of the United States. Three major regulatory programs are discussed in detail: Price Regulations, the Oil Import Program, and Petroleum Allocation Regulations. Chapter 2 reports briefly on energy supply key projections for the midterm and longterm for the major types of fuel. Chapter 3 contains a summary listing of all recipients of funds between November 1, 1973 and May 13, 1975. Cooperative agreements, interagency agreements, non-profit organizations, and profit organizations are covered for FEA-DOI awards, FEA pre-PRB review, and FEA post-PRB review. Chapter 4 comprises a summary listing of information-gathering activities within FEA conducted under Section 13 of the FEA Act.

291

Exemption of [a Refined Petroleum Product] from the Mandatory Petroleum Allocation and Price Regulations.

Frequency/Due Date: As required / Upon occurrence of event.

Agency Contact: Regulatory Program. (202) 254-7200.

Congressional Recipient: *House* of Representatives: Speaker of the *House* ; *House* Committee on Interstate and Foreign Commerce; Senate: President of the *Senate* ; *Senate* Committee on Energy and Natural Resources.

Authority: Emergency Petroleum Allocation Act of 1973 (P.L. 94-163; 89 Stat. 951; 15 U.S.C. 760a(d)(2)).

Data Base Reference: R-02903-001

This report summarizes the findings which are necessary to support exemption of a refined petroleum product from mandatory petroleum allocation and price regulations. Procedures for presenting oral and written arguments for exemption are outlined, and limitations on Presidential amendments to regulation are noted. (PR)

292

Energy Conservation: Federal Energy Management Program. FEA-283-R-D.

Frequency/Due Date: Quarterly / Unspecified.

Agency Contact: Office of Conservation and Environment. (202) 961-7934.

Congressional Recipient: Congress.

Authority: Presidential Directive.

Data Base Reference: R-02904-001

This report summarizes the achievements of the Federal Energy Management Program. Detailed information showing performances of the individual participating departments and agencies, and the amounts and types of energy used and saved are contained in the accompanying tables and figures.

293

Federal Energy Management Program Annual Report.

Frequency/Due Date: Annually / Unspecified.

Agency Contact: Office of Energy Conservation and Environment. (202) 961-7934.

Congressional Recipient: Congress; *House* Committee on Government Operations; *Senate* Committee on Governmental Affairs.

Authority: Federal Energy Administration Act of 1974 (P.L. 93-275, § 15; 88 Stat. 109; 15 U.S.C. 774(e)).

Data Base Reference: R-02904-002

This report summarizes the activities and accomplishments of the Federal Energy Management Program. It shows the actual reduction of energy use by the largest Federal agencies, relative to an established goal.

294

Progress of Energy Conservation Program for Consumer Products Other Than Automobiles.

Frequency/Due Date: Annually / December 22.

Agency Contact: Assistant Administrator for Conservation and Environment. (202) 961-7068.

Congressional Recipient: Congress; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.

Authority: Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 932; 42 U.S.C. 6308).

Data Base Reference: R-02904-003

This report deals with efforts to educate consumers with respect to energy costs and conservation. Educational efforts are directed to the significance of estimated annual operating costs; the advantages of comparative shopping; and other matters which the Federal Energy Administrator determines may encourage the conservation of energy in the use of consumer products. Steps to educate consumers may include publications, audiovisual presentations, demonstrations, and sponsorships of national and regional conferences. (PR)

295

Operation of State Energy Conservation Plans.

Frequency/Due Date: Annually / December 22.

Agency Contact: Office of Conservation and Environment. (202) 961-8370.

Congressional Recipient: *House* of Representatives: Clerk of the *House* ; *House* Committee on Interior and Insular Affairs; Senate: Secretary of the *Senate* ; *Senate* Committee on Energy and Natural Resources.

Authority: Energy Policy and Conservation Act (P.L. 94-0163; 89 Stat. 935; 42 U.S.C. 6325).

Data Base Reference: R-02904-004

This report reviews energy conservation goals for each State for 1980 as well as interim goals. Goals consist of the maximum reduction in the consumption of energy during any year as a result of a State energy conservation plan. Information is presented on the operation of the energy conservation program, estimated energy conservation achieved, the degree of State participation and achievement, innovative conservation program undertaken by individual States, and recommendations for additional legislation. (PR)

296

Industrial Energy Efficiency Program.

Frequency/Due Date: Annually / Unspecified.

Agency Contact: Office of Energy Conservation and Environment. (202) 254-9782.

Congressional Recipient: *House* Committee on Interior and Insular Affairs; *House* Committee on Science and Technology; *Senate* Committee on Commerce, Science and Transportation; *Senate* Committee on Energy and Natural Resources.

Authority: Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 937; 42 U.S.C. 6345).

Data Base Reference: R-02904-005

This report summarizes progress toward meeting industrial energy efficiency improvement targets set by the Federal Energy Administration and reviews progress in meeting such targets since the publication of the previous report. The basic information for this report was submitted by industrial representatives. (PR)

FEDERAL POWER COMMISSION

297

Effect and Operation of Interstate Compacts Relating to Natural Gas.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Bureau of Natural Gas. (202) 275-4477.
Congressional Recipient: Congress; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Natural Gas Act (P.L. 75-688; 52 Stat. 827; 15 U.S.C. 717j(b)).
Data Base Reference: R-03301-001

This report summarizes data relative to compacts between two or more States affecting the conservation, production, transportation, or distribution of natural gas. The effect and operation of such compacts are reported, and recommendations are made for further legislation which appears necessary to promote the purposes of interstate compacts. (PR)

298

Reports of Costs of Certain Structures on Nongovernment Waters.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Bureau of Power. (202) 275-4863.
Congressional Recipient: Congress; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Federal Water Power Act (P.L. 66-280; 41 Stat. 1070; 16 U.S.C. 805).
Data Base Reference: R-03302-002

This report encompasses recommendations relating to Federal participation in construction of locks or other navigation structures in conjunction with hydroelectric power projects on nongovernment waters. Cost estimates are included. (PR)

ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

299

ERDA Report of Review of Design, Construction, and Planning of Plutonium Processing Facilities. FCM-1.
Frequency/Due Date: Quarterly / Unspecified.
Agency Contact: Division of Facilities and Construction Management. (301) 353-4700.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: H. Rept. 92-1066; S. Rept. 92-802.
Data Base Reference: R-06000-001

The review covers status of construction, procurement, and the project estimate as well as a full update on design of all safety features for the facility. Detailed design of the process areas, including results of information received from vendors of critical equipment, indicates that all originally designed and planned safety equipment features will be accommodated in the facility within the current estimate.

300

Report on the Status of Major Construction Projects Experiencing Significant Variances.
Frequency/Due Date: Semiannually / Unspecified.
Agency Contact: Division of Facilities and Construction Management. (301) 353-4700.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Requested by the General Accounting Office.
Data Base Reference: R-06000-002

The report provides information on nuclear materials, weapons, reactor research and development, general energy development, space nuclear systems, physical research, and biomedical and environmental research. Included are the project budget number; title; dollar amounts, including original data sheet, latest Congress advised, and current; completion status of design and construction; and original and current estimated completion date of construction.

301

Report on Fast Flux Test Facility. RRD-1.
Frequency/Due Date: Quarterly / Unspecified.
Agency Contact: Fast Flux Test Facility Project Office. (509) 942-5481.
Congressional Recipient: *House* Committee on Appropriations; *Senate* Committee on Appropriations; *Joint* Committee on Atomic Energy.
Authority: Requested by the Public Works Subcommittee of the Senate Appropriations Committee.
Data Base Reference: R-06000-010

This report summarizes the status, progress, expenditures, and other major developments of the Fast Flux Test Facility.

302

Activities of Solar Energy Coordination and Management Project. SE-1.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Assistant Administrator for Planning, Analysis, and Evaluation. (202) 376-4337.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources; *Joint* Committee on Atomic Energy.
Authority: Solar Energy Research, Development, and Demonstration Act of 1974 (P.L. 93-473; 88 Stat. 1437; 42 U.S.C. 5562).
Data Base Reference: R-06000-019

This report summarizes international cooperative agreements for research and information dissemination relating to solar energy resources and technologies during the year. Projected activities and funding requirements for the ensuing 5 years are presented, and appropriate legislative and reorganizational actions are recommended. (PR)

303

Proposed Distribution of Special Nuclear Materials. AIA-2.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Office for International Affairs. (202) 376-4410.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Atomic Energy Act of 1954, as amended (P.L. 93-377; 88 Stat. 473; 42 U.S.C. 2074(a)(ii)).
Data Base Reference: R-06000-020

This report stipulates the procedures to be followed before proposed international distribution of special nuclear materials can be implemented. Such materials are to be used for medical therapy or other peaceful purposes. Limitations are specified in terms of amounts of materials to be exported, dollar value of materials, and time periods in which they may be distributed. A method is outlined for the submission of proposed export agreements to the Congress, and the mode of required congressional action is detailed. (PR)

304

Proposed Agreements for Cooperation with Other Nations on Atomic Energy. AIA-1.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: International Affairs. (202) 376-4410.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Atomic Energy Act of 1954, as amended (P.L. 93-485; 88 Stat. 1460; 42 U.S.C. 2153d).

Data Base Reference: R-06000-021

This report details procedures for presenting proposed international cooperative agreements regarding nuclear reactors to Congress and outlines deadlines for Congressional recommendations and approval of such proposals. (PR)

305

National Plan for Energy Research, Development and Demonstration Planning and Analysis. APAE-1.
Frequency/Due Date: Annually / When President submits budget.
Agency Contact: Assistant Administrator for Planning, Research and Evaluation. (202) 376-4337.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577; 88 Stat. 1894; 42 U.S.C. 5914(a)).
Data Base Reference: R-06003-001

This report details activities related to a comprehensive plan for nuclear and nonnuclear energy research, development, and demonstrations and sets forth modifications and revisions in the plan. Consideration is given to anticipated research, development, and application objectives to be achieved; the economic, environmental, and societal significance which the proposed program may have, and the total cost of individual program items. The estimated relative financial contributions of Federal and non-Federal participants is estimated, and the relationship of the proposed program to Federal national energy or fuel policies is discussed. The effect of short-term undertakings and expenditures on long-range goals is reviewed. (PR)

306

Activities of the Geothermal Coordination and Management Project. GE-1.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Division of Geothermal Energy. (202)376-4897.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Geothermal Energy Research, Development, and Demonstration Act of 1974 (P.L. 93-410; 88 Stat. 1088; 30 U.S.C. 1162(a)).
Data Base Reference: R-06007-001

This report summarizes activities of the national geothermal energy research, development, and demonstration program and evaluates the program's progress. Estimates and projects are presented in an attempt to assess the extent to which the objectives of the authorizing legislation will have been met by June 30, 1980. (PR)

307

Activities of Each Geothermal Demonstration Project. GE-2.
Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Division of Geothermal Energy. (202) 376-4900.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Geothermal Energy Research, Development, and Demonstration Act of 1974 (P.L. 93-410; 88 Stat. 1088; 30 U.S.C. 1162(b)).
Data Base Reference: R-06007-002

This report embodies a final review of the activities of each project undertaken as a part of the national geothermal energy research, development, and demonstration program. Other legislative and administrative actions which should be undertaken to further the goals of this program are recommended. (PR)

308

National Program for Solar Heating and Cooling. SE-2.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Division of Solar Energy. (202) 376-4435.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Solar Heating and Cooling Demonstration Act of 1974 (P.L. 93-409; 88 Stat. 1076; 42 U.S.C. 5510(d)).
Data Base Reference: R-06007-003

This report describes retrieval and dissemination services for information pertaining to solar heating and cooling. Such information services have been provided for Federal, State, and local government organizations; universities, colleges, and other nonprofit organizations; and, in appropriate cases, for private individuals. (PR)

309

Financial Report on the Geothermal Resources Development Fund. GE-3.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Division of Geothermal Energy. (202) 376-4899.
Congressional Recipient: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.
Authority: Geothermal Energy Research, Development, and Demonstration Act of 1974 (P.L. 93-410; 88 Stat. 1088; 30 U.S.C. 1144(c)).
Data Base Reference: R-06007-004

This financial report documents operations of a fund established to carry out the loan guaranty and interest assistance program established in conjunction with the geothermal resources and research program. (PR)

310

Report on ERDA's Nonnuclear Activities. OPA-2.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Office of Public Affairs. (301) 353-4551.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577, § 15(a); 88 Stat. 1878; 42 U.S.C. 5901).
Data Base Reference: R-06013-001

This report contains a description of a comprehensive plan for nuclear and nonnuclear energy research, development, and demonstration, as directed by the Energy Reorganization Act of 1974. The Act is designed to achieve solutions to immediate and short-term (to the early 1980's), middle-term (the early 1980's to 2000), and long-term (beyond 2000) energy-supply system and associated environmental problems. The nonnuclear report shall include information on anticipated research, development, and application objectives to be achieved by the proposed program; the economic, environmental, and societal significance of the proposed program; the total estimated cost of individual program items; the estimated relative financial contributions of the Federal government and non-Federal participants in the research and development program; the relationship of the proposed program to any Federal national energy or fuel policies; and the relationship of any short-term undertakings and expenditures to long-range goals.

311

Fossil Energy Program Report. AFE-1.
Frequency/Due Date: Annually / Unspecified.
Agency Contact: Office of Public Affairs. (202) 376-4064.
Congressional Recipient: *House* Committee on Science and Technology; *Senate* Committee on Energy and Natural Resources.
Authority: Voluntary.
Data Base Reference: R-06013-003

This report summarizes efforts of the agency and industry to develop and demonstrate technology for synthetic fuels from coal. Improved recovery methods applicable to petroleum, natural gas, and oil shale are discussed. (PR)

312

Report on Activity and Program Index of the Energy Research and Development Administration: Status of Construction Projects and Other Data. OC-9.

Frequency/Due Date: Semiannually / Unspecified.
Agency Contact: Office of the Controller. (301) 353-5325.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Requested by the Joint Committee on Atomic Energy.
Data Base Reference: R-06015-001

The index provides information on the status of active authorized construction projects, and includes data on solar, geothermal, and advanced energy systems development, including physical research; nuclear energy development, including fission power reactor development, naval reactor development, space nuclear materials systems, and nuclear materials; national security, including weapons, laser fusion, and nuclear materials security; environmental and safety research, including biomedical and environmental research and waste management; program support, including program direction; construction planning and design; general plant projects; and reactor safety research.

313

Report by the U.S. Energy Research and Development Administration: Status of Construction Projects and Other Data. OC-10.

Frequency/Due Date: Annually / Unspecified.
Agency Contact: Office of the Controller. (301) 353-5325.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Requested by the Joint Committee on Atomic Energy.
Data Base Reference: R-06015-002

The report provides information on the status of active authorized construction projects, including solar, geothermal, and advanced energy systems development, nuclear energy development, national security, environmental and safety research, program support, construction planning and design, general plant projects, and reactor safety research; active authorized projects on which revised cost estimates have exceeded the authorized limitations after the project has been started; authorized projects that have been completed; projects not started but for which funds have been authorized although not yet available; analysis of unexpended balances; and a comparison of Atomic Energy Commission (AEC) division requests for construction projects with estimates submitted to the Office of Management and Budget and the submission to Congress. In addition, the report provides information on the President's fiscal year budget estimates for those amounts allocated for the AEC's operating expenses and capital equipment not related to construction.

314

Report on Reprogramming Action for the Nuclear Materials Program. OC-7.

Frequency/Due Date: As required / Unspecified.
Agency Contact: Office of the Controller. (301) 353-5325.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Requested by the Joint Committee on Atomic Energy.
Data Base Reference: R-06015-005

This memorandum provides information on a proposed reprogramming action that will provide an additional $15.5 million in fiscal year 1975 operating funds for increases in costs of electrical power for the gaseous diffusion plants or cascade power. The increased cost of cascade power has resulted principally from higher than anticipated coal costs for the electric power suppliers–Tennessee Valley Authority, Electric Energy Inc., and Ohio Valley Electric Corp.–which in turn are passed on to their customers. The report states what the issue is, the background, the alternative, and a recommendation. In addition, it includes copies of letters to the chairman of the Joint Committee on Atomic Energy which provide statistical data related to costs.

315

Proposed Establishment of Joint Federal-Industry Nonnuclear Corporation. OC-11.

Frequency/Due Date: As required / Upon occurrence of event.
Agency Contact: Office of Controller. (301) 353-5325.
Congressional Recipient: *House* Committee on Science and Technology; *Senate* Committee on Energy and Natural Resources.
Authority: Federal Nonnuclear Energy Research and Development Act of 1974 (P.L. 93-577; 88 Stat. 7883; 42 U.S.C. 5906(b)(7)(A)).
Data Base Reference: R-06015-010

This report sets forth procedures for the establishment of joint Federal-industry corporations of nonnuclear energy research and development. Specific legislation must be enacted by Congress before such corporations can be established. Guidelines are outlined for competitive systems of price supports proposed for congressional authorization of such corporations, and procedures are specified for the award of planning grants and the construction of commercial demonstration facilities. (PR)

NUCLEAR REGULATORY COMMISSION

316

Summary of Abnormal Occurrences Reported to the Nuclear Regulatory Commission.

Frequency/Due Date: Quarterly / Unspecified.
Agency Contact: Nuclear Regulatory Commission. (301) 492-7735.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438, § 208; 88 Stat. 1248; 42 U.S.C. 5848).
Data Base Reference: R-06200-002

This report lists abnormal occurrences at or associated with any facility which is licensed or otherwise regulated pursuant to the Atomic Energy Act of 1954 as amended, or pursuant to the Energy Reorganization Act of 1974. An abnormal occurrence is defined as an unscheduled incident or event which the Commission determines is significant from the standpoint of public health or safety. The report contains information on 1) the date and place of each occurrence; 2) the nature and probable consequence of each occurrence; 3) the cause or causes of each occurrence; and 4) any action taken to prevent reoccurrence.

317

Budget History Tables.

Frequency/Due Date: Annually / Unspecified.
Agency Contact: Nuclear Regulatory Commission. (301) 492-7988.
Congressional Recipient: *Joint* Committee on Atomic Energy.
Authority: Requested by the Joint Committee on Atomic Energy.
Data Base Reference: R-06200-010

This report is to provide current authorization and appropriation background information on the Atomic Energy Commission (AEC) for use in connection with the fiscal year authorization bill. The Fall Planning Projections containing the unclassified 5-year budget projections for AEC programs and their subparts should also be included. In addition, fact sheets should be provided on the nuclear materials security program, the controlled thermonuclear research and laser fusion program, the laser isotopes separation program, the liquid metal fast breeder reactor project, the waste management and transportation program and various construction projects

318

Report to the President by the Nuclear Regulatory Commission.

Frequency/Due Date: Annually / Unspecified.
Agency Contact: Nuclear Regulatory Commission. (301) 492-7283.
Congressional Recipient: *House* Committee on Government Operations; *Senate* Committee on Governmental Affairs; *Joint* Committee on Atomic Energy.
Authority: Energy Reorganization Act of 1974 (P.L. 93-438, § 307(c); 88 Stat. 1251; 42 U.S.C. 5877(c)).

Data Base Reference: R-06200-013

This report summarizes the activities of the Nuclear Regulatory Commission. It includes a statement of short-range and long-range goals, priorities, and plans as they relate to the benefits, costs, and risks of commercial nuclear power. A clear description of activities and findings in the following areas should also be provided: 1) insuring the safe design of nuclear powerplants; 2) investigating abnormal occurrences and defects in nuclear powerplants; 3) safeguarding special nuclear materials at all stages of the fuel cycle; 4) investigating suspected, attempted, or actual thefts of special nuclear materials, and developing plans for dealing with such occurrences; 5) insuring the safe, permanent disposal of high-level radioactive wastes; and 6) protecting the public against the hazards of low-level radioactive emissions.

Appendix 3

Federal Information Sources and Systems on Energy

Citations in this appendix are extracted from *Federal Information Sources and Systems; a Directory issued by the Comptroller General for the period through June 30, 1976.* (1977 Congressional Sourcebook Series) PAD-77-71. 1977. (in press).

DEPARTMENT OF THE INTERIOR

319

National Natural Resources Library and Information Systems (NNRLIS).

OMB Funding Title/Code: Departmental Operations / 14-0108-0-1-306.

Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00700-002

Subject Terms: Information Centers; Libraries; Natural Resources.

Purpose: The system provides library and information services to employees of the Department and its bureaus and offices. It also provides natural resources information to researchers from State, regional, and local governments and from the private sector. *Input:* Information is gathered from all sources of natural resources data. *Content:* The content consists of natural resources data as contained primarily in published materials. It covers current and retrospective periods, updated continually in many regular and irregular publishing cycles. It is concerned primarily with the United States, but foreign materials on natural resources are collected in large amounts. *Output:* The output includes the Catalog of the Natural Resources Library (cards and books), Libraries and Information Services Directory (annual), Union List of Serials (NNRLIS), and specialized bibliographies on demand. *Availability:* The data are publicly available and the source varies.

Agency Contact: Office of Library and Information Services; 19th and C Streets NW, Room 1152, Washington, DC 20240; (202) 343-5821.

320

Federal Helium Program.

OMB Funding Title/Code: Helium Fund / 14-4053-0-3-306.

Congressional Relevance: *House* Committee on Interior and Insular Affairs; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00711-003

Subject Terms: Helium.

Purpose: The Federal helium program is designed to provide for the current and foreseeable future requirements for helium for essential Government activities. The program involves the production, conservation, sale, and distribution of helium and includes the following functions: 1) Acquisition, construction, operation, and management of helium plants, gas fields, helium storage fields, pipelines, and fleets of helium tank cars and semitrailers; 2) the search for new sources of helium-bearing natural gas and negotiation of contracts for supplies of helium-bearing gas; 3) establishment of helium reserves; and 4) experimentation and research to discover helium supplies and to improve methods of helium production, purification, transportation, liquefaction, storage, and utilization. *Input:* Information is gathered through internal operations and contracts with other Federal agencies, private helium producers, distributors and users, well drilling companies, and natural gas producers and distributors by means of statistical surveys, personal contact, and literature searches. *Content:* Information covering all aspects of helium production, sales, distribution, conservation, uses, future demand, and reserves is collected and issued through various internal and external reports, papers, and publications. These reports are generally issued on an annual basis; however, some are also issued intermittently depending upon internal and external circumstances. Information on helium, as described above, is gathered nationwide and, where possible, worldwide. *Output:* Reports consist of information circulars and internal reports normally issued annually. Data regarding the percentage of helium in natural gases found throughout the United States and several foreign countries are available on computer tape through the National Technical Information Service of the Department of Commerce. *Availability:* These reports are publicly available through NTIS.

Agency Contact: Division of Helium; Columbia Plaza, 5th Floor, 2401 E St. NW, Washington, DC; (202) 634-4734.

321

Mineral Land Assessment.

OMB Funding Title/Code: Mines and Minerals / 14-0959-0-1-300; Consolidated Working Fund / 14-3909-0-4-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Education and Labor; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-00711-004

Subject Terms: Fuels; Land Use; Minerals.

Purpose: Mineral assessments are made with both regional and commodity emphasis to identify the sources and availability of minerals and fuels. These serve as input for those decisionmakers given the responsibility for land use planning and decisions, particularly those involving public lands. They also assist public and private groups in resolving environmental and engineering problems associated with maintaining adequate mineral supplies. *Input:* These assessments are developed through courthouse mining claim searches, public and company record studies, and field work. The bulk of the activities are conducted through four field offices. *Content:* Under the Wilderness Act of 1964 and the Eastern Wilderness Act of 1974, and in conjunction with the Geological Survey, mineral assessments of national forest areas are conducted. These provide an evaluation of an area's mineral reserves and paramarginal resources. Similar studies are made of wild and scenic rivers and Indian lands. Information is gathered for minerally related environmental impact statements which are reviewed on a formal and informal basis; river basin studies that evaluate mineral resource development, related water requirements, and water pollution problems; and dam and reservoir sites to assess the impact of proposed construction on mineral resources. *Output:* Project files are the major output. Documents are published occasionally. *Availability:* The information is publicly available.

Agency Contact: Office of the Associate Director; 2401 E St. NW, Room 1038, Washington, DC 20241; (202) 634-1330.

322

Minerals Information System (MINFO).

OMB Funding Title/Code: Mines and Minerals / 14-0959-0-1-300; Consolidated Working Fund / 14-3909-0-4-306; Contributed Funds / 14-8287-0-7-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Education and Labor; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-00711-005

Subject Terms: International Trade; Minerals.

Purpose: The system develops and disseminates a coordinated body of basic minerals information, both domestic and foreign, covering upwards of 100 commodities for Government and industry policy, planning, and decisionmaking. ***Input:*** The information is collected by canvassing 80,000 mineral establishments by means of more than 600 statistical surveys and by personal contacts on a weekly, monthly, quarterly, semiannual, or annual basis. In addition, foreign data are obtained from various publications, foreign service dispatches, other Government agencies, and mineral attaches at foreign posts. ***Content:*** Technical and economic information covering all aspects of reserves, production, processing, consumption, and international trade is collected. This information is analyzed to determine what the current and future mineral-related problems and opportunities are and to identify the underlying factors. In addition, the effects that legislation and policy decisions have on the supply/demand relationship of minerals as well as their impact on the environment, economy, and public well-being are assessed. MINFO is enhanced by two automated subsystems: Fuels Availability System (FAS) and the Minerals Availability System (MAS). State liaison officers are channels of information for both the Federal and State interests. They are input sources for MINFO. They also are sources of the system's output at the State levels. ***Output:*** The Bureau of Mines develops and disseminates in a variety of forms many reports and studies. The following is a list of principal, periodic publications: Mineral Industry Surveys (weekly, monthly, quarterly, and annually); Minerals and Materials (a monthly survey); Mineral Trade Notes (monthly); International Cost Trade (monthly); Commodity Data Summaries (annually); Status of the Mineral Industries (annually); Minerals in the U.S. Economy (annually); Mineral Trends and Forecasts (annually); Minerals Yearbook–three volumes (annually); and Mineral Facts and Problems (every five years). ***Availability:*** The publications are publicly available.

Agency Contact: Office of the Associate Director; 2401 E St. NW, Room 1038, Washington, DC 20241; (202) 634-1330.

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Mining Research.

OMB Funding Title/Code: Mines and Minerals / 14-0959-0-1-300; Consolidated Working Fund/14-3909-0-4-306; Contributed Funds/ 14-8287-0-7-306; Miscellaneous Appropriations / 14-9911-0-1-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Education and Labor; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-00711-006

Subject Terms: Energy; Fuels; Minerals; Mining Research; Power Resources; Research.

Purpose: The mining research program of the Bureau of Mines is aimed at producing technologies that will help meet the Nation's increasing mineral and energy demands at the lowest possible social and economic costs. The major thrust of the mining research technology program falls within three basic program areas: Mining Health and Safety Research, Advancing Mining Technology Research, and Resource Conservation and Environmental Protection Research. The 3-pronged emphasis is necessary to achieve the goals of improved safety and efficiency of existing mining systems while simultaneously developing new systems that are safer and more productive and compatible with an aesthetic environment. ***Input:*** The research program is conducted out of five research centers located in Carbondale, IL; Denver, CO; Minneapolis, MN; Pittsburgh, PA; Spokane, WA; and an environmental field office at Wilkes-Barre, PA. ***Content:*** The content of the Mining Research information varies depending upon the nature of the research activity. Some research data reflects broad and significant projects or programs of scientific inquiry. Other information presents Bureau research which describes the principal features and results of individual experiments (single or multiple), minor research projects, or a significant coordinated phase of a major project or program. These data also may include a summary of several projects or activities in a given subject area, results of laboratory analyses of an unusual nature, and comparative and nonroutine testing. Still other data cover summaries of scientific and technical meetings, bibliographies, and descriptions of new mining processes. ***Output:*** The Bureau of Mines reports the findings of its research and investigations in its own series of publications and also in articles that appear in scientific, technical, and trade journals; in proceedings of conventions and seminars; in reference books; and in other non-Bureau publications. Mining publications are Bulletins, Technical Progress Reports, Report of Investigation, Open File Reports, Information Circulars, and Patents. These data are generally nonperiodic and released to the public after a specific study or research project has been completed. ***Availability:*** Bureau publications are publicly available.

Agency Contact: Mining; 2401 E St. NW, Washington, DC 20241; (202) 634-1210.

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Research Information Management System (RIMS).

OMB Funding Title/Code: Mines and Minerals / 14-0959-0-1-300; Consolidated Working Fund/14-3909-0-4-306; Contributed Funds/ 14-8287-0-7-306; Miscellaneous Appropriations / 14-9911-0-1-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Education and Labor; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-00711-007

Subject Terms: Management Information Systems; Mining Research; Planning; Research.

Purpose: This is a computerized data storage and retrieval system which supports the planning and management of mining research of the Bureau of Mines. It accumulates, organizes, and summarizes data on the substance, schedule, status, and cost of all projects, from proposal to project completion, in the research program conducted by the Office of the Assistant Director–Mining, Bureau of Mines. ***Input:*** The data contained in this system are derived from program memoranda and contract award notices within the Bureau of Mines. ***Content:*** The system consists of a series of reports which are updated monthly or more frequently by special request. The data in these reports consist of the following: project identification numbers, project titles, contractor name and address, program area, research area, research center involved, contract modifications, project award date, expected completion date, dollar expenditures, project monitors, and congressional districts. ***Output:*** RIMS serves Bureau of Mines management by generating standard and special reports at scheduled intervals or upon ad hoc request. For the routine dissemination of general contract status summaries, standard reports are reproduced and distributed at monthly intervals. Special reports may be reproduced or may be queried from the data base, depending upon the size of the request and time frame involved. ***Availability:*** RIMS output is for internal use only.

Agency Contact: Mining; 2401 E St. NW, Washington, DC 20241; (202) 634-1210.

325

National Water Data Exchange (NAWDEX).

OMB Funding Title/Code: Surveys, Investigations, and Research / 14-0804-0-1-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00712-002

Subject Terms: Hydrology; Location; Water.

Purpose: NAWDEX provides nationwide assistance to users of water data in the identification, location, and acquisition of needed data. Information is provided on water data available from Federal, State governmental, local governmental, and private organizations. NAWDEX is intended to benefit all users of water data including Federal, State, and local governmental organizations; private organizations and individuals; universities; and water, environmental, and energy resource planners, managers, and scientists. *Input:* NAWDEX gathers information on water data available from surface and groundwater sites. This information is currently supplied by 19 Federal organizations and 300 non-Federal organizations active in water data collection activities. Contributing non-Federal organizations include State governmental organizations, local governmental organizations, river basin commissions, interstate commissions, irrigation districts, universities, public utilities, and private organizations. *Content:* NAWDEX data systems include a Water Data Sources Directory which contains information on organizations that collect water data, the types of data collected, geographic areas in which data are collected, and locations within each organization from which water data may be acquired. A nationwide Master Water Data Index is also maintained which identifies sites for which water data are collected, the collecting organization, the geographic location of the site, the type of site, the types of data collected, the periods of records for which data are available, major water data parameters being measured and their frequency of measurement, and the media in which each type of data are available. Each water data site is geographically identified by latitude, longitude, State code, county code, congressional district, and hydrologic unit or basin code. These data systems are updated on an annual basis and contain information on the availability of streamflow, river stages, peak and low flow values, reservoir or lake volumes, geologic identifiers, groundwater levels, groundwater discharges, well depths, and water quality data of surface and groundwaters including physical, biological, sediment, and chemical characteristics. *Output:* NAWDEX data systems have both remote batch and interactive ad hoc query capability. Printed reports and tables of information on data availability are produced. Numeric summaries of categories of data available may also be produced. A printed directory of sources of water data is published periodically for public dissemination. Ad hoc reports are produced upon request. *Availability:* The output is publicly available.

Agency Contact: National Water Data Exchange; 421 National Center, Reston, VA 22092; (703) 860-6031.

326

Land and Mineral Conservation Information System.

OMB Funding Title/Code: Surveys, Investigations, and Research / 14-0804-0-1-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00712-009

Subject Terms: Land; Mineralogical Research; Minerals; Natural Resources Conservation; Research.

Purpose: The system provides a methodology for collecting, analyzing, and disseminating information relative to the effective development of land and mineral resources within the jurisdiction of the Federal Government. *Input:* Information is gathered by scientific observation of physical characteristics of potential minerals areas to establish the statistical probability of economically feasible occurrences and subsequent compliance with regulations and legislation relating to the orderly extractions in a manner most favorable to the public interest. *Content:* The information system includes the Federal jurisdiction of land and mineral development. Subsystems include energy producing minerals, non-energy producing minerals, and water storage potential for energy producing purposes. Certain portions of information established under legislative directive are retained permanently, while other catagories gathered for various purposes are retained for periods relative to the utility and continued accuracy of information. Data are maintained current according to need. *Output:* The major output types are evaluative–selective one-time, hardcopy; inventory–nonperiodic, circulars or bulletins; supervisory–monthly, hardcopy; and financial–annual, hardcopy. *Availability:* The reports are for internal use only.

Agency Contact: Conservation Division; 12201 Sunrise Valley Dr., Reston, VA 22092; (703) 860-7524.

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Geologic Surveys, Investigations, and Research Program.

OMB Funding Title/Code: Surveys, Investigations, and Research / 14-0804-0-1-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00712-010

Subject Terms: Geology; Geophysical Research; Land Use; Mineral Resources; Research.

Purpose: The national program of geologic research and investigations provides geologic, geochemical, and geophysical information for other Government agencies and for the general public on land resources, on mineral and energy resources, and on geologic hazards of the Nation and its territories. The relationship of geologic research and investigations to human welfare is particularly significant. Examples are the geologic hazards such as earthquakes, volcano eruptions, and landslides in urban and suburban areas; the development and use of energy resources, including oil and gas, coal, uranium, and geothermal waters, on the environment of the earth's surface; and the depletion of known mineral reserves and their corresponding impacts on the national and world economies. *Input:* Geologic research and investigations entail a systematic study, mapping, and analysis of the geology of the United States and the submerged edges of the continent. Knowledge is obtained about the distribution, structure, and potential usefulness of the rocks on and beneath the surface of the earth. Geophysical techniques measure the variations in the earth's gravity, magnetic field, and electrical sensitivity to help trace geologic features beneath the surface. Geochemical studies include determining the distribution of elements in the earth's mantle and crust; determining the processes that form ore bodies; determining isotopes and their application to establishing the age of rocks; and analyzing rocks, minerals, and ores. *Content:* The national program produces geologic, geophysical, and geochemical maps and analyses that show the distribution, age, composition, structure, and physical properties of rocks and minerals at and beneath the earth's surface; new or improved methods, techniques, and instruments for mineral or energy exploration on land and on the submerged continental margins; and, with the help of other State and Federal agencies, information on the chemistry and physics of the earth, moon, planets, and the geologic processes by which they were formed and are continually being modified. *Output:* The major output types are professional papers, bulletins, circulars, geologic quadrangle maps, Journal of Research, open-file reports, miscellaneous investigation maps, administrative reports, miscellaneous field studies maps, geophysical

investigations maps, earthquake information bulletin, geological survey annual research, geological survey annual director's report, National Technical Information Service reports, and general interest pamphlets. ***Availability:*** The professional papers, bulletins, circulars, and general interest pamphlets are obtainable by mail from: Branch of Distribution, U.S. Geological Survey, 1200 South Eads St., Arlington, VA 22202. The Journal of Research and the Earthquake Information Bulletin can be obtained from GPO. For maps of areas east of the Mississippi River, including Minnesota, Puerto Rico, and the Virgin Islands, address mail orders to: Branch of Distribution, U.S. Geological Survey, 1200 South Eads St., Arlington, VA 22202. For maps of areas west of the Mississippi River, including Alaska, Hawaii, Louisiana, Guam, and American Samoa, address mail orders to: Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225. Residents of Alaska may order Alaska maps from: Distribution Section, U.S. Geological Survey, 310 First Ave., Fairbanks, AK 99701.

Agency Contact: Geologic Division; 911 National Center, Reston, VA 22092; (703) 860-6531.

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Energy Resource Data Systems.

OMB Funding Title/Code: Surveys, Investigations, and Research / 14-0804-0-1-306.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00712-012

Subject Terms: Coal; Energy; Fuels; Geothermal Energy; Petroleum; Power Resources; Research; Thorium; Uranium.

Purpose: The system includes and does the following: 1) NCRDS answers questions about the distribution and quality of coal resources in the United States; 2) PDS provides production and reservoir data to conduct resource estimates of remaining petroleum; 3) WHCS allows detailed studies to be conducted in geologically discreet provinces; 4) GEOTHERM is used to study the cyclic behavior of geothermal "pools" which is reflected in the engineering characteristics; 5) uranium-thorium is used to construct occurrence models for this type of ore; and 6) oil shale data are used to assess the three-dimensional distribution of the resource. ***Input:*** NCRDS receives data from published documents for file 1, and from geologic mapping and field work for file 2. PDS gets data from State O and G regulatory agencies, AAPC, USBM, State geological surveys, and local geological societies, WHCS data are provided by Petroleum Information Corporation. GEOTHERM data are compiled from published sources and from geothermal working groups around the world. Uranium-thorium data were collected in the 1950's, and supplemental data are provided by ERDA. Oil shale data are derived from existing drill cores which have been archived. ***Content:*** NCRDS is developing one file for coal tonnage and chemical analysis records, classified by rank, depth, thickness, and location (to county level), and a second file for detailed coal occurrences by quadrangle. PDS contains data on location, production, reservoir parameters, and fluid analyses for oil and gas pools. WHCS is an oil and gas well history file purchased from and maintained by Petroleum Information Corporation (Denver). GEOTHERM contains records of the location, exploration, development, evaluation, and engineering data of geothermal resources. The uranium-thorium file contains ore and metal production data (proprietary), location, ownership, and gross geology information. The oil shale file is composed of records derived from 300 drill cores containing data on location, lithology, and Fisher assays. ***Output:*** The major output types are NCRDS–tonnage of coal and analysis of coal resource summary reports for specified area. Contour maps, cross-sections, and resource (bed) maps; PDS–oil and gas pool distribution maps and detail pool reports or summary, regional reports. WHCS–contour maps and detailed well reports; GEOTHERM–occurrence maps and detailed engineering reports; uranium-thorium–contour maps and generalized reports; and oil Shale–drill core profiles and Fisher assay reports by depth. ***Availability:*** All files are generally available to the public. NCRDS and GEOTHERM are available through USGS, Reston, VA. PDS and WHCS are available through the University of Oklahoma; uranium-thorium and oil shale data files are available through USGS, Denver, CO. NCRDS, GEOTHERM, U-th, and oil shale are all research files in early developmental stages and only selected portions may be available.

Agency Contact: Geologic Division; 911 National Center, Reston, VA 22092; (703) 860-6531.

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Coal Lease Data System.

OMB Funding Title/Code: Management of Lands and Resources / 14-1109-0-1-302.

Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00714-006

Subject Terms: Coal Leases; Leases; Natural Resources.

Purpose: The only aspect of this system developed to date is the capability to maintain a data file for coal leases. The system supports billing and compliance efforts. ***Input:*** Input comes from field office files as leasing occurs. ***Content:*** Information relates to the geography, topography, surface ownership, expected productivity, terms and stipulations, and important dates of the lease. This data file will form the base from which a new, broader system will be developed. ***Output:*** No reports are generated.

Agency Contact: Chief; Division of Mineral Resources; 18th and C Streets NW, Washington, DC 20240; (202) 343-2718.

330

Oil Shale/Bentonite Title Clearance.

OMB Funding Title/Code: Management of Lands and Resources / 14-1109-0-1-302.

Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00714-007

Subject Terms: Claims; Minerals; Natural Resources; Oil Shales; Shale Oils.

Purpose: The system provides limited support to a case flow monitoring system by tracking groups of case files, displaying some title information, and providing support of claim approval and recordation tasks. ***Input:*** The data are from Bureau case status files. ***Content:*** The system contains geographic information, mining claim inventory data, title history data, and related adjudicative actions. The areas involved are Western Colorado, Eastern Utah, and Southwestern Wyoming. ***Output:*** Ninteen principal reports are output, all related to oil shale at present. Some examples are: Geographic Claim Selection, Graphic Display of Lands in Oil Shale, Withdrawal, and History of Actions Report. ***Availability:*** Bentonite reports are not yet available as the same type as are now available on oil shale. These reports are batch processed.

Agency Contact: Chief; Division of Mineral Resources; 18th and C Streets NW, Washington, DC 20240; (202) 343-2718.

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Outer Continental Shelf Post-Sale System.

OMB Funding Title/Code: Management of Lands and Resources / 14-1109-0-1-302.

Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00714-010

Subject Terms: Continental Shelves; Land Transfers; Leases.

Purpose: The system processes information related to the sale of Outer Continental Shelf tracts. The input data are edited, and the total exposed bid amounts are audited. *Input:* Lease-sale data are input by the Outer Continental Shelf offices as sales occur. *Content:* The system covers all Outer Continental Shelf sales as they occur in various geographical areas. *Output:* Seven major reports are generated. *Availability:* Reports may be available, but confidential data will be deleted.

Agency Contact: Chief; Division of Mineral Resources; 18th and C Streets NW, Washington, DC 20240; (202) 343-2721.

332

Land Base System.

OMB Funding Title/Code: Management of Lands and Resources / 14-1109-0-1-302.

Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00714-011

Subject Terms: Oil Shales.

Purpose: The system is limited to those lands involved in the oil shale or bentonite programs. As such it may be considered a support system or subsystem of the Oil Shale/Bentonite Title Clearance System. *Input:* The system contains basic geographic, planning, and administrative data. Input is from Bureau field offices in the affected sections of Colorado, Wyoming, and Utah. *Content:* Data for the areas involved contain Master Title Plat, supplemental, and use lot information to support several lands records applications tasks, such as cadastral survey and public inquiry-responses utilization management. *Output:* Four basic land base reports are output. *Availability:* Within the current Land Base System, these reports are available in those states (BLM State Offices) coded into the data base.

Agency Contact: Chief; Division of Mineral Resources; 18th and C Streets NW, Washington, DC 20240; (202) 343-2721.

333

Lease Management System.

OMB Funding Title/Code: Management of Lands and Resources / 14-1109-0-1-302.

Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00714-013

Subject Terms: Billing; Compliance; Contracts; Leases.

Purpose: This system supports billing and compliance checking procedures for all leases. *Input:* Lease transactions, geographic data, and billing data are input from Bureau office files. *Content:* All leases in effect are included. *Output:* Thirty-two reports are produced, generally concerned with transactions, geographic data, and administrative information. *Availability:* The reports are available upon request.

Agency Contact: Chief; Division of Mineral Resources; 18th and C Streets NW, Washington, DC 20240; (202) 343-2721.

334

Library of Executed Electric Power Contracts.

OMB Funding Title/Code: Operation and Maintenance / 14-5064-0-2-301.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00716-001

Subject Terms: Contractors; Contracts; Electric Power Generation; Libraries; Powerplants; Public Utilities.

Purpose: Under reclamation law, the Secretary of the Interior is authorized to market power generated at various reclamation projects and at certain powerplants constructed by the Corps of Engineers. To accomplish this, the Bureau of Reclamation has entered into electric service contracts with preference customers and private utilities. In addition, transmission and interconnection contracts are required to transmit federally generated power from the powerplants to distribution points. This library serves as a centralized collection of these contracts for the use of Bureau management and other interested parties in contract administration. *Input:* These service contracts are negotiated between the Federal Government and private utilities or preference customers which include municipalities, rural electric cooperatives, State agencies, Federal agencies, Indian tribes, public utility districts, and irrigation districts. *Content:* This library provides a centralized collection in Washington, DC, for executed electric service contracts, interconnection and transmission service contracts, and other related contracts. General terms of electric service contracts include quantity of power sold (contract rate of delivery); delivery conditions, including points of delivery, delivery voltage, and points of measurement; and a rate schedule. General terms of interconnection and transmission contracts include amounts of power to be transmitted and to whom, points of interconnection, and a rate schedule. *Output:* No additional output is generated. *Availability:* The output is publicly available.

Agency Contact: Division of Power; 18th and C Streets NW, Room 7612, Washington, DC 20240; (202) 343-5337.

335

Plant Operation and Power Scheduling.

OMB Funding Title/Code: Bonneville Power Administration Fund / 14-4045-0-3-301.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00718-004

Subject Terms: Electric Power Generation; Hydroelectric Power; Powerplants.

Purpose: The primary objective of the plant scheduling process is to prepare generating schedules at reservoirs directly contributing to the Federal generation requirement to meet BPA loads and obligations to interconnect utilities while utilizing available resources in the

most efficient manner possible. *Input:* Input is predominantly internal real-time data from RODS system (Real-time Operations, Dispatch, and Scheduling) and natural flow forecasts. *Content:* This is a model of the BPA hydrogenerating system with select non-Federal upstream regulating reservoirs. The program regulates the system hydraulically and electrically, on or off control, to satisfy a given load condition. The resulting schedules are used both as a base for real-time control of the generating system through automatic load frequency control techniques and generation dispatching and to provide data on probable operations. The scheduled generation is projected up to five weeks into the future in 1-hour increments for the first 48 hours, then 8-hour increments for the rest of the first 2-week period. The last three weeks of the scheduling period consist of a 1-week average period. This provides a link between the immediate operation and the analysis of seasonal loads and resources. *Output:* The major output is a daily hardcopy report. There is CRT query capability. *Availability:* BPA customers and many other interested parties are provided with an indication of the probable Federal system operation through this report.

Agency Contact: 18th and C Streets NW, Room 5600, Washington, DC 20240; (202) 343-6955.

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Power Flow Program.

OMB Funding Title/Code: Bonneville Power Administration Fund / 14-4045-0-3-301.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00718-005

Subject Terms: Electric Power; Hydroelectric Power; Powerplants; Public Utilities.

Purpose: This program solves the AC power flow problem for systems of up to 2,000 busses. The program is BPA's basic system planning tool. In addition, this program supports power system operation, especially the planning of scheduled outages. *Input:* Input for power flow studies comes from within BPA, the Corps of Engineers, Bureau of Reclamation, utilities in the Northwest Power Pool, BPA industrial customers, and the Western Systems Coordinating Council. *Content:* System source data include load forecasts, substation characteristics, power system configuration data, line characteristics, and generation data. Power system planning is based upon an annual cycle, and the data are updated annually. *Output:* The major output types are computer listings with electrical parameters, hardcopy one-line diagrams, graphic terminal one-line diagrams, and microfiche listings with electrical parameters. Base case data and some output are saved on magnetic disk and magnetic tape, and the power flow program is used several times each day. *Availability:* Output is generally for internal use. Some output is shared with Northwest utilities and some with members of the Western Systems Coordinating Council. There is no personal information in the output.

Agency Contact: 18th and C Streets NW, Room 5600, Washington, DC 20240; (202) 343-6955.

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Real-Time Operations, Dispatch and Scheduling (RODS).

OMB Funding Title/Code: Bonneville Power Administration Fund / 14-4045-0-3-301.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00718-006

Subject Terms: Electric Power Generation; Hydroelectric Power; Powerplants; Public Utilities.

Purpose: The RODS system is a complex of digital computers providing the basic support for power scheduling and dispatch for generation and transmission. Initial functional applications were Automatic Generation Control which matches generation to internal load and to hourly schedules with external utilities while preserving frequency at 60 Hz; Scheduling and Forecasting, a substantial set of operation functions for hourly coordination of hydro resources and loads including power interchange and intertie schedules, streamflow schedules, system load forecast, hydroelectric generation schedules, and monitoring; and Data Acquisition and Display programs, a set of functions linking all other program groups to the hardware data acquisition systems. *Input:* Data acquisition programs service hardware such as kWh, hydromet, powerhouse, teletype, load frequency control, SCADA, etc. Display programs provide link through the console hardware for all user input requests and output to CRT displays, console annunciators, and hardcopy devices. *Content:* Block transfers of system data move over kilobit channel from SCADA to refresh data files used by RODS applications programs and to update RODS display formats every 10 seconds. RODS subsystems at the Dittmer Control Center are used to centralize control of main grid substations. The center controls major generation at hydroelectric projects of the Federal Columbia River Power System. *Output:* Output is available through CRT displays, microwave, console annunciators, and hardcopy devices. *Availability:* Output is generally for internal use. Some output is shared with Northwest and Southwest utilities.

Agency Contact: 18th and C Streets NW, Room 5600, Washington, DC 20240; (202) 343-6955.

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Supervisory Control and Data Acquisition System (SCADA).

OMB Funding Title/Code: Bonneville Power Administration Fund / 14-4045-0-3-301.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-00718-008

Subject Terms: Electric Power Generation; Hydroelectric Power; Powerplants; Substation Control.

Purpose: SCADA provides direct support to dispatch and operation of the transmission system and includes remote control of substations. Control of a large number of substations is centralized through the master station. *Input:* A high volume of data is collected from each remote substation including power circuit breaker position (open or closed), buss or transmission line voltage, transmission line or transformer MW and MVAR readings, transformer tap changer positions, transformer bank or reactor temperature readings, station alarms, and hot line indicators (energized or not). *Content:* Master station hardware with remote units is located in Washington, Oregon, Idaho, and Montana. The primary and secondary systems provide a volume of data and control through a 2.5 second update cycle from all remotes. *Output:* SCADA computers drive annunciator lights on the dynamic group display boards of transmission grids. Illuminated lights indicate the field breakers and hot line indicators or switches that are open in the networks. In addition, output is made to consoles, microwave, and RODS. Data are associated with daily operation of the system. *Availability:* Output is generally for internal use. Some output will be shared with the Northwest utilities.

Agency Contact: 18th and C Streets NW, Room 5600, Washington, DC 20240; (202) 343-6955.

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Planning and Billing System.
OMB Funding Title/Code: General Investigations / 14-1501-0-1-301; Operation and Maintenance / 14-1500-0-1-301.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Public Works and Transportation; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Environment and Public Works.

Data Base Reference: S-00719-001

Subject Terms: Electric Power; Energy Planning; Hydroelectric Power; Powerplants.

Purpose: The Alaska Power Administration (APA) has assignments in planning for the development and use of Alaska's water, power, and related resources, and in power systems and power market studies. APA operates, maintains, and markets the power from Federal hydroelectric projects and represents the Secretary of Interior in Alaska on power matters. *Input:* The data are internal. APA power projects provide project sales and revenues for power sold to local utilities. *Content:* Projects provide monthly reports of electrical energy sold to permit power billings to customers. Energy reports submitted by the projects are used in the preparation of annual reports to the Federal Power Commission. General investigations studies are conducted to determine the most economical and appropriate means of development and utilization of water, power, and related resources, and to represent the Secretary of the Interior in Alaska on power matters. *Output:* The major output types are power reports of energy produced, feasibility reports on proposed power projects, and special study reports on water resources. Reports are manually prepared. *Availability:* The reports are publicly available. Primarily the data are used for internal purposes.

Agency Contact: Alaska Power Administration; P. O. Box 50, Juneau, AK 99802; (907) 586-7405.

ENVIRONMENTAL PROTECTION AGENCY

340

Technical Assistance Data System (TADS). 10075.
OMB Funding Title/Code: Abatement and Control / 68-0108-0-1-304.
Congressional Relevance: *House* Committee on Appropriations: HUD Independent Agencies Subcommittee; *House* Committee on Interstate and Foreign Commerce; *House* Committee on Public Works and Transportation; *Senate* Committee on Appropriations: HUD-Independent Agencies Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Environment and Public Works.

Data Base Reference: S-02300-017

Subject Terms: Hazardous Substances; Oil Spills; Pollution Control; Water Pollution.

Purpose: TADS is to reduce the effects of oil and hazardous materials spills by providing on-line access to information on material characteristics and emergency response procedures. Field emergency teams can access information directly through terminals or by telephoning someone with a terminal. The Oil and Special Materials Control Division of the Office of Water and Hazardous Materials and Regional Oil and Hazardous Materials personnel are the primary users of the system. *Input:* A contractor was employed to search the technical literature to obtain the best and newest information available on the effects of oil and hazardous materials spills. *Content:* The characteristics of 863 materials which represent water pollution hazards are cataloged on an on-line interactive system. (Due to new legislation, plans are to expand to 1,300 materials in the future.) The system contains 122 possible fields of technical data on each substance. To retrieve information from the files, the user specifies a search list of terms. For example, an unknown substance that is green, floats, and smells like rotten eggs can be identified by searching for those attributes. In order to satisfy the needs for instant information in the event of spill events, the on-line system is available 8 A.M.-9 P.M., Monday through Friday and Saturday 9 A.M.-4 P.M. After these hours, the system may be accessed, in case of emergency, within one to three hours after the occurrence of a spill. *Output:* There are no recurring reports produced by this system. The data base is queried in order to respond to a special or emergency need for information. The Scandanavian countries and Canada have been making on-line queries of this data base. *Availability:* All the data in the file are publicly available.

Agency Contact: Office of Water Program Operations; 401 M St. SW, Washington, DC 20460; (202) 245-3045.

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Energy Data System (EDS). 10257.
OMB Funding Title/Code: Abatement and Control / 68-0108-0-1-304.
Congressional Relevance: *House* Committee on Appropriations: HUD Independent Agencies Subcommittee; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: HUD-Independent Agencies Subcommittee; *Senate* Committee on Environment and Public Works.

Data Base Reference: S-02300-022

Subject Terms: Air Pollution; Emissions; Energy; Environment; Fuel Consumption; Pollution Control.

Purpose: EDS provides management with a flexible energy-environmental data base for evaluating problems associated with stationary source fuel usage, fuel quality, compliance with emission regulations, and related effects on air quality. The Office of Air Quality Planning and Standards uses the prepared reports for evaluating proposed compliance strategies or changes in emission regulations. *Input:* The EDS contains data collected primarily by other Federal agencies and other divisions within EPA. The Federal Power Commission provides Form 67 and 423 data; the Monitoring and Data Analysis Division supplies air quality monitoring data from the SAROAD system and emissions data from the NEDS system. Data concerning emission regulations and source compliance schedules are supplied primarily by EPA's Division of Stationary Source Enforcement and the Office of Air Quality Planning and Standards. In addition, industrial organizations, such as the Edison Electric Institute, contribute supplementary information occasionally. *Content:* The system integrates all energy-related data presently in EPA's data banks (e.g., SIPS, NEDS, SAROAD, FPC-67, CDS) into one data file for quick-response, interactive access by EPA's Strategies and Air Standards Division. *Output:* Requested reports contain a wide range of energy information and cover such specific areas as fuel use summaries by geographical region and by fuel-consuming categories, emission and equipment installed at large fuel-burning sources, regulations applicable to large fuel-burning sources, compliance schedules and status, modeling results for large powerplants, and air quality data in the vicinity of large powerplants. *Availability:* Data are publicly available.

Agency Contact: Office of Air Quality Planning and Standards; Research Triangle Park, NC 27711; (919) 629-5201.

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Spill Prevention Control and Countermeasure System (SPCCS). 10332.
OMB Funding Title/Code: Abatement and Control / 68-0108-0-1-304.
Congressional Relevance: *House* Committee on Appropriations: HUD Independent Agencies Subcommittee; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: HUD-Independent Agencies Subcommittee; *Senate* Committee on Commerce, Science, and Transportation.

Data Base Reference: S-02300-024

Subject Terms: Accident Prevention; Hazardous Substances; Oil Spills; Oil Storage; Pollution Control; Water Pollution Control.

Purpose: SPCCS is a tracking and reporting system used to monitor and report on compliance deadlines and actions to be taken for the prevention of spills from facilities storing oil and hazardous materials. Personnel from the Oil and Special Materials Control Division (OSMCD) and technical specialists in the regional offices use data in the automated file to initiate spill prevention plan reviews, compliance inspections, and penalty assessments. The system is also used by the Coast Guard to obtain information on oil spills which have been reported to EPA but which fall under the purview of the Coast Guard for penalty assessment. ***Input:*** The data base is being created from the input data being encoded by regions from information about oil storage facilities, spill reports, and enforcement reports. *Content:* Nontransportation related facilities storing oil are required by law and Federal regulations to prepare spill prevention control and countermeasure plans and to report oil spills to EPA or the Coast Guard. EPA has been empowered to amend facility SPCCS plans which are not successful at preventing spills, perform compliance inspections, request information pertinent to spill control, and rule on extensions of plan preparation and implementation deadlines. Approximately 5,000 oil storage facility records are expected to enter the system annually by way of reporting a spill or requesting a plan to be prepared. When it first enters the system, each facility generates an individual record. Each facility record will have 91 data elements of information. An estimated 24,000 update transactions a year will be required. Examples of the specific types of technical information coded into the file are: type, amount, cause and data of the spill, the body of water where the spill occurred, type of violation, and type of spill removal method used. ***Output:*** The specific types of reports which are prepared monthly from the data base are: description of spills which initiate the SPCCS Plan review and amendment process; list of facilities whose SPCCS Plan Reviews are pending; the status by region and facility of amendments in progress; a list of violations by facility and type of violation; a list of facilities required to respond to a Section 308 letter and who have not complied by the due date; and ad hoc reports listing by region the number of extensions granted, inspections performed, spills occurring, the causes of spills, the sources of spills, and spill descriptions. *Availability:* Data are publicly available.

Agency Contact: Office of Water Program Operations; 401 M St. SW, Washington, DC 20460; (202) 245-3045.

FEDERAL ENERGY ADMINISTRATION

343

Federal Energy Conservation Performance System. 6069.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-004

Subject Terms: Energy Consumption; Executive Agencies.

Purpose: This system is intended to collect information on the performance by the Federal Government in achieving improved energy efficiency in its own facilities and operations. The authority for the collection of data is the Presidential Order of June 29, 1973. ***Input:*** Input is provided by 27 of the more energy consuming Federal agencies, such as the Department of Defense, Postal Service, GSA, and the Department of Transportation. *Content:* The content is energy consumption by type of fuel by Federal agency. The percent change is compared to the previous year's consumption. Information is collected quarterly on a national basis. ***Output:*** Annual reports provide information on energy usage by various fuel types by Federal agency. *Availability:* Output is publicly available in the Federal Energy Management Program's publication "Energy Conservation."

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Project Conserve. 6141.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-005

Subject Terms: Community Participation; Energy Conservation; Housing Characteristics; Insulation; Retrofitting.

Purpose: The purpose is to enable homeowners to furnish certain characteristics of their dwellings and in return receive advice on what types and quantities of insulation materials to add and an estimate of yearly energy savings. ***Input:*** Information is collected voluntarily from homeowners who wish to participate. FEA has conducted a program for Massachusetts and New Mexico, receiving voluntary responses from approximately 142,000 and 26,000 homeowners, respectively. FEA is now offering the computer programs and documentation to States interested in running their own programs. *Content:* The system content contains housing unit characteristics such as square footage, number of windows, number of doors, age of dwelling, and existing insulation characteristics. ***Output:*** Output is printouts to homeowners suggesting types and amounts of insulation materials needed and potential energy savings to be realized. ***Availability:*** Individual homeowner information is subject to the Privacy Act. A report covering the results of a pilot survey relating to Project Conserve was published in October 1974.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Automobile Classification Data Base. 6290.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-006

Subject Terms: Automobiles; Classification Systems; Energy Conservation; Fuel Conservation; Gasoline.

Purpose: The system is to enable FEA to assist EPA to group autos with similar characteristics (e.g., all autos weighing 2,500 pounds or more, or all autos over 16 feet long). Within each group, autos are to be ranked according to their fuel economy. ***Input:*** The input is the manufacturer's automobile specifications. *Content:* Specifications are weight, wheelbase, price, exterior size, passenger space, and cargo volume. ***Output:*** Automobiles with like characteristics will be grouped in various categories and will be ranked within each according to fuel economy. *Availability:* Output of this system

is publicly available in the 1977 Gas Mileage Guide published jointly by the Environmental Protection Agency and the Federal Energy Administration.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Electric Rate Demonstration Data System. 6318.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-007

Subject Terms: Electric Utilities; Electric Utility Rates; Energy Consumption; Energy Prices; Prices; Utilities.

Purpose: The system is for learning more about the effect that rate changes and load management techniques may have on electric utilities, utility customers, and energy strategies. This will assist State regulatory institutions in their decisions regarding electric utility rates. *Input:* Input is based on data collected under cooperative approach with State and local government agencies. *Content:* The information in the file includes current energy usage data, stored data for related sources, and selected data for statistical analysis and modeling. *Output:* Reports will show how demand for electrical energy is affected by price. *Availability:* Once the system becomes operational, publicly releasable information will be available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Middle Distillate Price Monitoring System. 6006/6104.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-008

Subject Terms: Energy Prices; Fuels; Heating Oil; No. 2 Heating Oil; Price Regulation; Prices.

Purpose: On July 1, 1976, Middle Distillates (No. 2 heating oil and No. 2 diesel fuel) were exempted from mandatory petroleum price and allocation regulations. The Middle Distillate Price Monitoring System was developed to track price trends of middle distillates at the refinery, retail, and wholesale levels. Monitoring of these price trends is necessary to assure that no abnormal price increases occur and to ensure adequate supplies to marketers during the transition period following decontrol. The system compares actual reported prices to national and regional index representative price levels, which FEA believes would have prevailed had middle distillates remained under price controls. *Input:* The data are derived from monthly reports submitted by a scientifically selected sample of firms which sell No. 2 heating oil. From September 1976 through March 1977 the system is updated on a weekly basis with critical data obtained by telephone from the respondent companies. *Content:* The system consists of sales volume, percentage sales, average selling price, and inventory data. Submissions are made monthly and are broken down by type of customer and by State. Residential sales and volume data are collected weekly from September through March. *Output:* Major reports are produced on a monthly/weekly basis and consist primarily of sales volume data and weighted average selling prices of No. 2 heating oil on a regional and national basis. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Refinery Cost Passthrough. 6008/6105.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-009

Subject Terms: Energy Prices; Fuels; Gasoline; Heating Oil; Jet Fuel; No. 2 Heating Oil; Petroleum; Price Regulation; Prices; Propane; Refineries.

Purpose: The system serves as the means by which refiners subject to the FEA Petroleum Pricing Regulations compute and adjust May 15, 1973, selling prices for covered products (No. 2 oils, jet fuel, gasoline, and propane). This allows FEA to monitor certain price movements within the industry. *Input:* The information is from refiners and natural gas processing plants. *Content:* The content includes the costs and quantities of imported and domestic crude petroleum and the products listed above. Data are collected monthly on a national basis. *Output:* Hardcopy summaries of cost elements for various covered products are produced monthly. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

349

Propane/Butane Allocation System. 6025.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-010

Subject Terms: Butane; Fuels; Inventories; Natural Gas; Oil; Propane; Resource Allocation.

Purpose: The system was developed to enable the FEA to monitor existing and projected inventories of propane, butane, and other related fuels produced from natural gas liquids. The primary reasons for this monitoring effort are to ensure the proper allocation of these fuels based on past usage and to identify the location and amounts of these fuels as possible substitutes for natural gas should natural gas be curtailed. *Input:* The information is supplied by producers, suppliers, certain wholesale purchaser-resellers, and operators of storage facilities for the covered products. *Content:* Actual and projected volumes and sources of supply, supply obligation, and ownership of stored products are reported monthly on a national basis. *Output:*

Production and inventory level reports are produced monthly. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Crude Oil Buy/Sell Program. 6031.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-011

Subject Terms: Crude Oil; Petroleum; Refineries; Resource Allocation.

Purpose: This is a system to allocate crude oil to ensure that small and independent refiners are able to purchase sufficient crude oil to operate at economically feasible production levels. The information is used to compile a buy/sell list which specifies the amount some refiners are required to offer for sale and the amount which other refiners are eligible to buy. *Input:* All U.S. refiners report to this system. *Content:* The content includes refinery capacity, crude oil runs to stills, processing agreements, and sales and purchases under the mandatory allocation program. *Output:* A quarterly buy/sell list is produced. *Availability:* This is publicly available on a quarterly basis in the Federal Register.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

351

Transfer Pricing System. 6047.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-012

Subject Terms: Crude Oil Imports; Imports; Petroleum; Prices.

Purpose: The objective of the Program is to monitor and regulate the prices at which oil companies transfer equity crude oil from their foreign to domestic affiliates. Such regulation is needed because of the cost passthrough provisions of the Emergency Petroleum Allocation Act of 1973. The FEA attempts to control these transfer prices by comparing them with prices from transactions involving the same or similar crude types that were conducted on an arm's-length basis. When a company's transfer prices for a given crude exceed the arm's-length standard established by the FEA, a disallowance of cost is proposed. *Input:* The data are derived from reports submitted monthly by each refiner which imports 500,000 barrels of crude oil during the month and/or each refiner which imports crude oil from an affiliated entity during the month. *Content:* The system consists of information concerning imported crude petroleum obtained by purchase and through exchanges, cost data for imported equity and buy-back oil, crude petroleum sales and purchases, foreign crude trading activity by country of origin, and crude characteristics data. *Output:* Output reports are generated monthly in hardcopy. Reports provide data on the high, low, and average transaction prices. Companies whose transaction prices exceed the computed average transaction price are subject to the issuance of a notice of disallowance. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

352

Crude Oil Entitlements (Equalization). 6072.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-014

Subject Terms: Crude Oil; Energy Prices; Inventories; Petroleum; Prices; Refineries; Resource Allocation.

Purpose: The system is to collect and process data on crude oil purchases which will be utilized to establish the monthly entitlements buy/sell position of each domestic refiner. This system supports the crude oil allocation program for the purpose of ensuring the maintenance of competitive domestic marketplace for all refiners regardless of size. *Input:* External input is provided by refiners of domestic and imported crude oil (140) and importers of residual oil (53). The forms are filed monthly by the fifth day of the second month following the month of operation. The reporting requirement is mandatory. *Content:* The system provides a listing of current volumes and weighted average costs of various categories of domestic and imported crude oil which is booked into refinery inventory by each domestic refiner for processing. Other data elements are: adjustments to estimated volumes for crude oil from prior months; total crude runs to stills; required sale/purchase of entitlements; bias and exception relief, where applicable; and domestic crude oil supply ratio. *Output:* The principal output is historical cost comparison report, a calculations report, a Federal Register report, and a processing agreement crosscheck. These are issued monthly and are hardcopy. *Availability:* Individual company reports contain proprietary information and are not publicly available. Monthly entitlement notices, with values and buy/sell requirements, are published in Federal Energy Guidelines and in the Federal Register.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Mandatory Oil Imports Project (MOIP). 6127/6313.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-015

Subject Terms: Imports; Petroleum Imports; Resource Allocation.

Purpose: The system is an accounts receivable system. It stores, retrieves, and processes data on imported petroleum and petroleum products for the purpose of administering the Mandatory Oil Import Allocation and Licensing Program in accordance with Presidential Proclamation 3279. *Input:* The data are obtained from other Gov-

ernment agencies and firms, including parent, subsidiary, or affiliated firms, which have incurred fees for the importation of crude oil, unfinished oils, and finished petroleum products during a particular month. *Content:* The MOIP system contains data taken from allocations, licenses, consumption entry forms, refund documents, and remittance advices. These documents reflect the transactions of approximately 700 companies which import petroleum and petroleum products. The consumption entry forms are received daily from the Customs Offices in each district. They provide data on the number of barrels, type of product, duties paid, and license(s) to be charged for each importation. *Output:* Output is produced as required and includes: Fees incurred, transaction lists, importer transaction lists, importer master list, current bonds list, importer allocation summary, allocation report, current licenses issued, current licenses listed, check payments accepted, new bonds/rider, unaccompanied payments, additions to license table, authorized refunds to be issued, shipment discrepancy, potential refund qualification, overdue accounts, closed licenses, shipments in excess of license amount, shipments made against expired licenses, crude and unfinished oil imports, finished and other petroleum, and residual fuel. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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FEA Oil Import System. 6253.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-017

Subject Terms: Crude Oil Imports; Imports; Oil; Petroleum Imports.

Purpose: The system provides the means by which firms report data on the importation of crude oil, unfinished oils, and finished petroleum products into the United States and Puerto Rico, as well as shipments of residual fuel oil into the East Coast Refining District pursuant to Public Laws 93-275 and 93-159, as amended, and Presidential Proclamation 3279. *Input:* Information is filed on a monthly basis by approximately 700 firms which import crude petroleum and specified petroleum products. *Content:* The system is updated on a monthly basis and contains information by respondent company relative to port of entry, country of origin, quantity of imports, import license numbers, and product imported. *Output:* Reports are produced monthly. In addition, plans call for the availability of data for on-line queries. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

355

Crude Oil First Purchaser. 6272.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-018

Subject Terms: Crude Oil; Domestic Crude Oil; Energy Prices; Petroleum Prices; Price Regulation.

Purpose: This system, which was implemented by authority of the Energy Policy and Conservation Act of 1975, calculates the composite monthly price of domestic crude oil based upon its first exchange for value. This composite price is compared with maximum prices permitted to determine whether additional regulatory actions are warranted. *Input:* Reports are from any firms that obtain ownership of domestic crude oil though purchase or other exchange. *Content:* Geographic coverage includes the 50 States and Puerto Rico. Data are reported monthly. Three hundred firms provide data showing the volume and book value of crude oil purchased by type (upper tier, lower tier, stripper), by location (State), and by individual producer/operators. *Output:* The principal reports are: Domestic Crude Oil Volume and Price Analysis Summary; Domestic Crude Oil Volume and Price Analysis-Company Summary; and subsidiary reports, including Purchasers/Sellers Report and Volume/Costs Variance Exception Report. These are produced monthly and are hardcopy. *Availability:* Price and volumetric reports are for limited official use. Individual company reports contain proprietary information and are not publicly available. Summary data are available monthly in the Monthly Energy Review.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave., NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Major Fuel Burning Installations (MFBI). 6217.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-019

Subject Terms: Coal; Energy Consumption; Energy Policy; Fuels; Major Fuel Burning Installations; Natural Gas; Oil.

Purpose: This system collected information from major fuel burning installations (excluding utility companies) for the ultimate purpose of decreasing the use of scarce oil and natural gas as fuels and increasing the use of abundantly available coal supplies. FEA analyzed this information and identified firms which could be considered candidates to be issued a Federal order requiring that coal be used to fire the combustor. The analysis was made on the basis of such things as coal availability, environmental considerations, and the financial ability of the firm to absorb costs involved in converting the combustor for coal use. *Input:* Reports were completed by all major fuel burning installation (excluding utility companies) which had combustors with a designed firing rate of at least 100 million BTU/hr. *Content:* Information was collected on a one-time basis and includes fuel use data, combustor characteristics, and air quality data. *Output:* Listings of summary characteristics of individual combustors are produced. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

357

Natural Gas Curtailments. 6219.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-020

Subject Terms: Energy Policy; Energy Shortages; Fuels; Natural Gas.

Purpose: The system was developed and implemented to collect data pertaining to natural gas shortages and to assess the resulting impact on alternate energy sources. *Input:* The data contained in the file for this system are derived from submission of reports from intrastate distributors of natural gas to end-use customers (this system is operated jointly with FPC and includes data collected by FPC for interstate distribution of natural gas). Twelve-month historical data are gathered each summer along with a 12-month projection. Projected data are updated on a sample basis during the winter heating season. *Content:* All reporting firms furnish basic delivery data for end-use customers by month for the past and projected heating years. Data pertaining to large end-use customers include individual accounts of deliveries, curtailments, and alternate fuel usage for the 2-year period. Each large customer is identified as to State and county in which deliveries are received, category of customer, type of service, SIC code, and FPC priority. *Output:* Output is produced semiannually and includes: State Aggregated Delivery and Curtailment Data; Demand on Alternate Fuel By Type, Supply, and Demand Alternatives; and Degree Day Data. *Availability:* Results of the Gas Curtailments Survey are tabulated in the publication Projected Natural Gas Curtailments and Potential Needs for Additional Alternate Fuels, which is publicly available through NTIS.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

358

Major Fuel Burning Installation–Early Planning Process Identification (EPPE). 6310.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-021

Subject Terms: Coal; Energy Consumption; Energy Policy; Fuels; Major Fuel Burning Installations.

Purpose: This system will collect information from major fuel burning installations (excluding utility companies) for the ultimate purpose of discouraging the use of scarce oil and natural gas supplies and encouraging the use of abundantly available coal supplies. Firms that are planning to construct combustors having a firing rate of 100 million BTU/hr. or greater will report to FEA as to whether or not the combustors will be constructed with the capacity to burn coal as their primary energy source. If a firm responds "no," FEA will consider issuing an order that would require such a capacity. FEA will base a final decision on this matter on such factors as the availability of coal supplies, environmental considerations, and financial ability of the firm to absorb the additional costs involved in constructing the combustor for coal use. *Input:* This system will collect information from all major fuel burning installations (except utility companies). *Content:* The system's content includes company financial information and individual combustor characteristics. This study is planned to be conducted on a one-time basis. Companies will submit updates as necessary. *Output:* The output is the expected operational data for combustors and the expected candidates to be issued construction orders. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

359

Drilling Equipment Production Survey. ERD-01.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-022

Subject Terms: Drilling Equipment; Equipment; Forecasting; Inventories; Oil Well Drilling.

Purpose: The purpose is to determine drilling equipment availability in certain years in order to forecast requirements in preparing National Energy Outlook (NEO) and other future drilling forecasts. *Input:* The survey consists of collecting data through secondary sources in order to perform an analysis of the manufacturing companies that are supplying the principal elements of oil field drilling equipment. *Content:* The drilling equipment involved is rotary drilling rigs; oil country tubular goods, including drill pipe, mobile and fixed drilling platforms; and surface equipment, such as, pumping units, sucker rods, electric motors, and steel tanks. The survey analyzes actual or indicated manufacturing constraints. It also analyzes proposals recommending possible solutions. *Output:* The survey results will be prepared in a loose-leaf type report. This will be one report only, followed in two years with a comparable survey. *Availability:* Reports are for internal use only. Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

360

Trends in Refinery Capacity and Utilization of Petroleum Refineries in the United States and Foreign Refinery Exporting Centers. ERD-02.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-023

Subject Terms: Foreign Countries; Imports; Petroleum Imports; Petroleum Refineries; Refineries.

Purpose: This system monitors the growth of U.S. petroleum refining capacity and that of certain world refining exporting centers together with a 5-year forecast of such growth. It helps determine whether adequate domestic refining is being attained or if foreign refining capacity is being constructed to export products to the United States. *Input:* System input is from trade journals, newspapers, and miscellaneous literature sources, Bureau of Mines historical data, Office of Regulatory Programs records, CIA reports, and per-

sonal contact with companies planning new capacity. *Content:* The areas covered are the United States, Caribbean/Bahamas, Middle East, Eastern Canada, Italy, Singapore, Netherlands, as well as others. The system is updated annually with respect to refinery capacities by country for each company for each year covered, internal consumption for foreign exporting centers, exports to the United States from foreign centers, and analysis of trends in the United States and foreign centers. *Output:* An annual bound report is produced. *Availability:* Output is publicly available in the publication, Trends in Refinery Capacity and Utilization, Petroleum Refineries in the United States Foreign Refinery Exporting Centers. It is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

361

Project Operations System (POS). ERD-03.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-024

Subject Terms: Demonstration Projects; Energy Research; Research and Development.

Purpose: The system is to monitor the implementation status of key FEA energy resource development projects and report the related information to FEA management. *Input:* Within the Office of Energy Resource Development specific organizations collect the related information from the private sector, State, and local agencies, as well as other Federal agencies. *Content:* The information collected pertains to specific energy resource development projects which have been identified as key projects, such as the major fuel burning installations coal firing capability project and the powerplant coal conversion project. These projects may be located anywhere in the United States. The information is updated monthly. *Output:* Project status reports are prepared monthly. The reports are typed hardcopy. Query capability requires a request for specific information and manual preparation of the response. *Availability:* Reports are for internal use only.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

362

Plume Model. 6276.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-025

Subject Terms: Forecasting; Industrial Wastes; Mathematical Models; Saline Waters; Simulation; Water Pollution.

Purpose: The Plume Model is a three-dimensional model predicting the dispersion of effluent into large bodies of water. It is used to predict how fast the effluent discharged will decline to the normal salt concentration in these bodies of water. *Input:* The information concerns specific bodies of water and specific site locations and the nature of the site effluence. Input is from the National Oceanographic and Atmospheric Administration and other generally published sources, e.g., university studies. *Content:* The data include a basic data deck concerning a body of water. Included is information such as the concentration of salt, the water temperature, the currents, the bottom contours, and the geographic boundaries. Data are also input concerning the specific site to be considered. This includes the type of structure involved, the angle and velocity of effluence, and the temperature of the effluence. *Output:* Computer printouts of the numerical results of the model on various site configurations are produced on an as requested basis. Contours (graphic representations of the effluent movement) can be drawn from these data. *Availability:* The numerical output is for internal use by FEA analysts. The contours are published in the Strategic Petroleum Sites Environmental Impact Statements. Those data are not proprietary.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Strategic Petroleum Reserves Program-Wide System (SPR). 6291.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-026

Subject Terms: Energy Supplies; Manpower Utilization; Petroleum Reserves.

Purpose: This PERT system was created to enable Strategic Petroleum Reserve Office (SPRO) management to monitor progress toward the achievement of program goals as delineated in the SPRO operating plan and to facilitate the effective coordination of projects that involve more than one Associate Assistant Administrator office. *Input:* Each Associate Assistant Administrator for Strategic Petroleum Reserve Office enters the proposed activities and schedule for his office and any updates to previous schedules on internal data entry forms which are then keyed into the system. *Content:* This system monitors major activities, such as construction, fill status, and oil acquisition, for the entire Strategic Petroleum Reserve Program. The system is updated as needed. *Output:* The major reports are all PERT-type reports on hardcopy computer printouts which are produced as needed. The major reports are activity reports showing each activity and its early and late start dates, early and late finish dates, slack, duration and description; and Milestone Event Reports condensing all the activities to major milestone events to give a better overall view of the project. *Availability:* These reports are intended for internal use only. They are designed to aid SPRO in the management of all phases of the Strategic Reserve Program.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

364

Site Distribution Model. 6293.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-027

Subject Terms: Energy Storage; Mathematical Models; Petroleum Distribution; Petroleum Storage; Simulation.

Purpose: This model is designed to provide least cost solutions among alternative petroleum storage sites and distribution systems. *Input:* Discrete performance parameters are provided by analysts. *Content:* The performance paramters include costs, capacity, flow rates, geographic location of potential sites, miles of pipeline, and quantity of salt water to be displaced. *Output:* This model generates hardcopy computer printouts of model findings to be used by the analysts. *Availability:* The output from this model is designed for internal FEA use by cognizant analysts.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

365

Comprehensive Human Resources Data System (CHRDS). 6212.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-028

Subject Terms: Economic Impact; Energy Consumption; Energy Policy; Population Statistics.

Purpose: The system is to provide a flexible tool for the evaluation and analysis of the potential economic and social impact of proposed energy-related regulations, policies, and practices on low and middle income families, special impact groups such as the elderly, the handicapped, and the poor, as well as on the general population at the State level. *Input:* The Phase I CHRD System is being designed as a file of microdata containing records on individual households and component persons. The primary data source for this purpose is the 1970 Public Use Sample (PUS) from the decennial census. The version of the PUS chosen for Phase I implementation is the State Public Assistance Cost Estimator (SPACE) file. This file is a State stratified subsample containing approximately 150,000 households drawn from the full State PUS. *Content:* The analytical framework used for Phase I development is an adaptation of HEW's microsimulation Transfer Income Model. The Phase I system is expected to be on-line in March 1977 and will provide estimates of household energy consumption and expenditures for selected years 1974-1985 at the State level. Also, the system will serve as a key mechanism for the anticipation of consumer reaction to proposed energy programs and policies. *Output:* The major reports will be essentially descriptive and will be produced as needed. Descriptive uses would include the preparation of table of income distribution, nationally, regionally, and for States. It would also include tabulations of energy consumption cross-tabulated with the desired combination of geographic, demographic, and socioeconomic characteristics. Comparisons of such tabulations for projected periods with similar tabulations for a recent base period would show how energy programs, in conjunction with other economic and demographic factors, will operate to change such distributions. These reports will be produced in machine-readable and hardcopy form. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. Room 1411, Washington, DC 20461; (202) 566-9025.

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Federal Energy Information Locator System (FEILS). 6003.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-029

Subject Terms: Data Bases; Energy; Information Services.

Purpose: In December 1973, the Federal Energy Office (FEO) was created by Executive Order, and on January 23, 1974, the President directed that the Office be the focal point for energy information in the Federal Government. In response to the Executive Order, the Administrator of FEO created the Interagency Task Force on Energy Information to survey energy data in the Federal Government. FEILS represents the first step undertaken toward that goal. The FEILS data base was assembled and verified between February 1974 and July 1975 and updated in 1976. This directory is a comprehensive inventory of energy information available from 44 separate Federal agencies, bureaus, and administrations conducting 279 different programs relating to energy data. *Input:* FEILS was developed from a series of questionnaires completed by Federal agencies during 1974 and 1975. The 1976 update consisted of a review of the initial data submitted by each agency, and new or change data added to the FEILS 1976 data base. Each agency provided energy program data for 12 energy categories–coal, electricity, energy-related, geothermal, natural gas, nuclear, oil shale, organic waste petroleum, petroleum products, solar, and tar sands. Data may be retrieved from the data base by reference to these energy source categories or to any of the 90 functions related to them, e.g., exploration, extraction, processing. *Content:* The system is an automated facility that maintains information about the location of energy-related data within the Federal Government. The data base comprises 44 agency program descriptions, 279 program summaries, and 88 related file/data descriptions. Each agency description identifies major energy-related programs that provide or use energy data, the energy source codes that are covered by the programs, types of supporting data that are available, the date that the description was last updated, and the agency contact office and the telephone number. Each program description identifies the program name and number, energy sources and functions covered by the program, description of the program and its uses and objectives, status as to a data source or data requirement, survey form used, date of last update, and office contact and telephone number. Files identify file name, energy sources covered, description of data content, number of records if known, size of record if known, date of description last update, and agency contact office and telephone number. *Output:* The FEILS directory is printed annually and an on-line base query capability is available through Data Base Management System (ADABAS). *Availability:* The directory is available to Government personnel via FEA's National Energy Information Center. On-line query is available to authorized users via NEIC terminals.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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National Energy Information Center (NEIC). 6062.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-030

Subject Terms: Energy; Information Centers.

Purpose: Section 20.(4) of Public Law 23-275 requires the FEA Administrator to provide for a central clearinghouse for Federal agencies and State governments seeking energy information and assistance from the Federal Government. Other corollary functions are to develop special programs for the coordination of energy information activities and the exchange of energy information with other Federal agencies, States, counties, and cities; provide staff assistance to the Federal Inter-Agency Council on Energy Information; identify and catalog existing energy data sources, reporting systems, and data; develop and promulgate standards in energy terminology; provide assistance to the States in their data collection activities; manage the FEA forms clearance process; retain, store, and catalog all FEA staff and contractor technical publications and reports; provide technical support services for the preparation and publication of newsletters, reports, and special studies; provide for the dissemination of energy information by such means as bibliographies, directories, and development and utilization of pertinent automated data bases; and respond to both written and verbal inquiries. In the exercise of these functions, the NEIC provides a complete spectrum of capabilities in technical services, research services, and system services, and maintains a staff office for intergovernmental coordination. *Input:* NEIC is concerned with all levels of energy information resources in Government, industry, and the academic and professional world. It taps more than 100 data banks outside of FEA such as International Statistics (statistical), the Engineering Index (technical), the Congressional Information Service Index (congressional), and the Information Bank of the New York Times (general). Data reported by energy-related companies and corporations are maintained in more than 50 data bases by FEA in support of its analytical and regulatory functions. The NEIC maintains a collection of monographs, reports, and periodicals in print, microform, and automated media, and, as a national clearinghouse, accesses many additional energy information sources and facilities. NEIC also establishes and oversees regional energy information services centers. *Content:* The National Energy Information Center is a comprehensive source of energy data and information. There are no geographical limitations. Update cycles vary from daily to annually or one-time, depending upon the particular area of the total energy information field being considered. *Output:* Three hundred forty-two technical reports are summarized in a December 1975 bibliography and its November 1976 update. Most of these reports are available through NTIS. The bibliography, Technical Reports of the Federal Energy Administration, is NTIS number PB 248 915 and costs $5. Some of the reports, such as the Project Independence reports, are available through GPO. Some of the monthly reports, such as the Monthly Energy Review and the Monthly Petroleum Product Price Report are among the best known and most used reports. These reports are updated each year with an annual National Energy Outlook. NEIC also publishes its own Network Services Bulletin. Many special reports and tabulations are produced on request. Hardcopy printouts of most of the content of automated data files can be produced. *Availability:* Most NEIC reports are available to the public through NTIS or GPO. Much additional unpublished information and data are available to the public. If the data are proprietary, they may sometimes be releasable in an aggregated form.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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FEA Data Dictionary. 6075.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-031

Subject Terms: Dictionaries; Energy; Glossaries.

Purpose: The dictionary was established in 1975 to provide FEA program offices with information about the data being collected and processed in FEA. It contains processing and modeling systems descriptions, input energy forms descriptions, output reports descriptions, files or data base descriptions, and data element descriptions for the Energy Data Forms. There are two additional sections covering the Federal Energy Information Locator System (FEILS) and selected energy forms from other agencies used in the FEA Forms Clearance functions. *Input:* The systems, models, files, reports, and forms descriptions were derived from FEA program offices. The FEILS data were collected from each Federal agency having energy-related programs. *Content:* The dictionary is arranged in several sections, each with an index corresponding to the various items being presented. The interrelationship between the systems, the input forms that provide data, and the data elements being collected establishes a hierarchial arrangement of the data that allows a user to trace the linkages to all parts of a system (on-line). Each record includes the item name, synonymous name, a description of the item and its purpose, source of the description, Office of Primary Interest, FEA project number, security classification of the data, and other related data. FEILS records are similar to the above, but they also include agency program numbers, agency contact office and telephone numbers, and the energy functions related to the energy sources reported. *Output:* The Data Dictionary is printed annually and has on-line data base query capability through Data Base Management System (ADABAS). *Availability:* The Data Dictionary is printed for internal FEA distribution. The on-line system is available to FEA users via NEIC terminals.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Subpart L. 6032.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-037

Subject Terms: Distillates; Energy Supplies; Gasoline; Jet Fuel; Kerosene; Petroleum Products; Propane; Residual Fuel Oil; Resource Allocation.

Purpose: This system is to ensure the distribution of available products on an equitable basis during a shortage situation to all users of allocated products based on 1972 purchaser/supplier relationships and volumes sold. This system is in support of Subpart L of 10 CFR 211.222. *Input:* The system collects information from every prime supplier of any product subject to State-set-aside. A prime supplier is the supplier (or producer in the case of propane) which makes the first sale of an allocated product subject to State-set-aside in the State distribution system for consumption within the State. *Content:* The content is the total amount of delivered products per State during the preceding month and anticipated supply for individual States for the following month. Products include propane, gasoline, kerosene, distillates, jet fuel, and residual fuel oils. *Output:* Summaries of supplies of various petroleum products are available on a State-by-State basis. These listings are produced monthly. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

370

Market Shares System. 6038.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-038

Subject Terms: Distillates; Energy; Marketing; Petroleum Products; Propane; Residual Fuel Oil.

Purpose: The purpose is to report any changes after calendar year 1972 in the aggregate share of nonbranded independent marketers, the aggregate share of branded independent marketers, and the aggregate share of other persons engaged in the marketing or distribution of refined petroleum products of the national market or the regional market in any refined petroleum product. *Input:* Input includes data on sales of refined petroleum products by refiners and data on distillate, residual fuel oil, and propane sales to ultimate consumers by branded and unbranded independent marketers. *Content:* Information regarding sales volumes of various products is collected monthly from a sample of firms in each of the categories mentioned above. *Output:* The principal monthly reports are Report on Sales of Refined Petroleum Products and Report on Gasoline Service Station Market Shares. *Availability:* Output reports are published monthly and formally distributed to the Speaker of the House, the President of the Senate, and majority and minority chairmen of principal Senate and House subcommittees. The reports are subsequently released in hardcopy form for distribution to the general public through the National Energy Information Center and NTIS.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

371

Underground Gas Storage System. 6054.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-039

Subject Terms: Energy Supplies; Natural Gas Storage; Storage.

Purpose: This system is to collect information concerning storage capacity, storage levels, injections, and withdrawals, and storage ownerships from intrastate and interstate underground natural gas storage operators. *Input:* Data are collected from 45 intrastate underground natural gas storage operators and 39 interstate underground natural gas storage operators. The intrastate respondents report to FEA and the interstate respondents report directly to FPC. Data are collected monthly (April-November) and semimonthly (December-March). *Content:* All companies not subject to FPC jurisdiction that operate underground natural gas storage fields in the United States must provide input. The system contains data on the volume of gas stored; gas in operated reservoirs; gas belonging to others in reservoirs operated by respondents; name, location, and capacity of underground storage reservoirs; and reservoirs in development stage. *Output:* Output includes listings by company of volumetric inspections, gas reservoir withdrawals, and balances. *Availability:* Information collected for this survey is the basis of the publication Underground Storage of Natural Gas in the United States publicly available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

372

Oil and Gas Reserves System. 6055.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-040

Subject Terms: Energy Supplies; Gas Production; Gas Reserves; Gas Resources; Petroleum Production; Petroleum Products; Petroleum Reserves; Petroleum Resources.

Purpose: The system was to prepare a complete and independent analysis of actual oil and gas reserves and resources in the United States and its outer continental shelf. Also surveyed was the existing productive capacity and the extent to which such capacity could be increased for crude oil and each major petroleum product each year for the next 10 years through full utilization of available technology and capacity. *Input:* This system collected information as of December 1974 from approximately 12,000 operators of oil and gas wells. *Content:* The content includes data on the production of oil and gas for 1970-74, estimated production for 1975, and estimated reserves. *Output:* The output includes an initial report on Oil and Gas Resources, Reserves, and Productive Capacities, June 30, 1975, and a final report on Oil and Gas Resources, Reserves, and Productive Capacities (Vols. I-II), October 31, 1975. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Coal Data Base. 6057.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-041

Subject Terms: Anthracite; Bituminous; Coal Prices; Coal Production; Coal Reserves; Energy Prices; Energy Supplies; Lignite; Subbituminous.

Purpose: The system provides automated data base information relating to coal reserves, production, prices, and other physical and economic data. Data are organized by geographic location and by energy market function. *Input:* External data come from the Bureau of Mines, Demonstrated Coal Reserve Data Base of the United States, and the Federal Power Commission. *Content:* Continental United States coverage includes production by underground/surface, sulfur content, location, type (anthracite, bituminous, subbituminous, lignite); consumption; costs; and inventories. *Output:* Data

will be provided upon request. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Cost and Pricing System. 6233.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-042

Subject Terms: Distillates; Energy Prices; Gasoline; Jet Fuel; Kerosene; Liquefied Petroleum Gas; Petroleum Products; Prices; Residual Fuel Oil.

Purpose: The system is to monitor petroleum product prices and to facilitate the timely analysis of price and volume of sales data at the refined product level. FEA uses the data collected for this system to assess conformity with established petroleum policies. *Input:* The source of information currently is the Petroleum Industry Monthly Report for Product Prices. The report is submitted by all refiners and gas plant operators. Also included are resellers and retailers who derive $50 million or more annually from the sale of covered petroleum products. *Content:* The system currently tabulates selling price and sales volume data for each respondent firm for each covered petroleum product it sells. Covered products include gasoline, distillate, residual fuel oil, aviation fuels, kerosene, and liquid petroleum gas. Information is collected monthly on a national basis. *Output:* The output is various reports representing monthly price and current product prices. *Availability:* A tabulated summary is publicly available in the Monthly Petroleum Product Price Report through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Joint FEA/BOM Petroleum Reporting System. 6230/6301.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-043

Subject Terms: Crude Oil Imports; Petroleum Products; Petroleum Refineries; Pipelines; Refineries.

Purpose: The system combined the petroleum reporting requirements of the Bureau of Mines (BOM), Department of the Interior, and the Federal Energy Administration concerning refinery production, finished petroleum stocks, and imported foreign crude oil. BOM acts as the collection agent for FEA and then provides reports to FEA. *Input:* All petroleum bulk terminal operators, operators of pipelines which carry product or crude, and all refineries must file reports on the appropriate forms. The data requested on the forms are transmitted via TWX or mailgram to BOM. BOM then edits the raw data. These data are reported monthly. *Content:* Stocks of crude and product by Petroleum Administration for Defense (PAD) districts are listed for refineries, bulk terminals, crude and product pipelines. In addition, for refineries, the receipts, input, and shipments or losses are specified by crude and product. *Output:* Monthly hardcopy reports by the Petroleum Administration for Defense (PAD) District include Refinery Operations, Refinery Production of Petroleum Products, Primary Stocks of Crude Oil and Petroleum Products Quarterly Reports, and Quarterly Report of Crude and Thruput per Day by Refinery. *Availability:* These data are used as the basis for reports in the Monthly Energy Review and the Monthly Petroleum Statistics Report, which are publicly available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Short Term Coal Demand Forecasting Model. 6118.2.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-044

Subject Terms: Coal; Econometric Models; Electric Utilities; Forecasting; Models.

Purpose: The system forecasts the demand for coal by quarter, State, and by end-using sector of the economy. This model applies to electric utilities, industrial and metallurgical users, and exporters. *Input:* This is a econometric model that uses historical data on coal demand and economic activity, including the generation of electricity to estimate forecasting equations. Forecasts are based on forecasts of the appropriate exogenous variables. *Content:* Subsystems include retail, industrial demand for coal, coke producers demand for coal, electric utility demand for coal, export demand for coal, and Strike Evaluation Model. The Strike Evaluation Model will be used for special studies evaluating the potential impact of a coal strike; the test will forecast quarterly for two years, annually for five years. Each of these subsystems will be State specific. All but the Strike Evaluation Model will be re-estimated at least annually. *Output:* Annual reports and quarterly input into other reports, including FEA Quarterly Report to Congress and the Monthly Energy Review, are the output. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Electrical Financial Forecasting Model (BSB Model. EUFINANCE). 6118.5.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-045

Subject Terms: Electric Utilities; Financial Monitoring; Mathematical Models; Powerplants; Public Utilities; Simulation.

Purpose: The system forecasts the financial condition of individual electric utility companies. *Input:* The input includes existing utility plant characteristics, system load characteristics, power generation requirements, and capital costs. *Content:* The EUFINANCE model is designed to find economically optional power generation expansion patterns for electrical utility systems within various constraints. It can also generate alternative system configurations for capacity additions; calculate periodic operating costs and reliability factors for each configuration; and determine the optional expansion schedule with respect to the timing, type, and number of units to be added. *Output:* No regular reports are produced. The system is used as an analytical system to address policy issues as they occur. *Availability:* It is for internal FEA use only.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Oil and Gas Supply Model. 6138.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-046

Subject Terms: Crude Oil Production; Crude Oil Reserves; Energy Supplies; Forecasting; Mathematical Models; Natural Gas Production; Natural Gas Reserves; Petroleum; Simulation.

Purpose: The model is designed to produce independent estimates of future crude oil and natural gas production for use in energy policy formulation and planning. This model is derived from the National Petroleum Council Oil and Gas Model. *Input:* The data are from the Bureau of Mines, American Petroleum Institute oil reserve estimates, American Gas Association drilling costs and statistics, resource estimates from the Geological Survey, and Lewin enhanced recovery data. *Content:* It forecasts the oil and gas production by region for 1980, 1985, 1990, and later. The model is revised annually on a scheduled basis, but modifications and updates to the data base are being implemented on a continuing basis. Future production possibilities are established as functions of anticipated profitability compared to alternative investment opportunities, the amount of exploratory drilling undertaken and its success, and the extent of constraining policies that limit profitability or the availability of land favorable for exploration and production. Runs may be made under two basic sets of assumptions: 1) The Reference Case, assuming a continuation of policies in effect prior to 1977, except price controls; and 2) Accelerated Development, assuming changes to encourage domestic exploration and production. *Output:* Output includes oil and gas production and reserves by region by year as machine-readable files and hardcopy and a comprehensive annual study supporting the National Energy Outlook and as issues develop. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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National Coal Model (RMAC). 6143.1.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-047

Subject Terms: Coal; Energy Policy; Energy Supplies; Forecasting; Mathematical Models; Simulation.

Purpose: The purpose is to forecast the long term supply of coal by region and coal type. *Input:* The input is from Federal Power Commission electric utility capacity data, sales by region data, and coal delivery data; Bureau of Mines coal reserve data; utility coal demand and distribution efficiencies; nonutility coal demand, and coal transportation demand. *Content:* The model is designed to forecast coal production, consumption, and prices and to analyze coal-related public policy issues. It generates equilibrium solutions through a linear program formulation which balances the supply and demand for coal at minimum cost. The model has 30 supply regions, 35 demand regions, up to 40 possible coal types, and 6 consuming sectors. The model is capable of making both short term and long term annual projections under a variety of policy scenarios. Users have the capability of changing such factors as region specifications, assumed inflation rates, or assumed growth rates in electricity sales through modifications in the data base. These factors are not a part of the model's structure. The model can also perform sensitive analyses in order to gauge uncertainty surrounding a forecast which it produced. *Output:* No regular reports are produced. The system is used as an analytical system to address policy issues as they occur. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Reserves Allocation and Mine Cost Model (RAMC). 6143.2.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-048

Subject Terms: Coal Reserves; Energy Supplies; Mathematical Models; Simulation.

Purpose: The model is designed to allocate coal reserves by BTU and sulfur content to 40 coal type categories. The categories are then aggregated to create regional piles of each coal type. Supply curves are created for each region by mine size and coal type. These are input to the National Coal Model and the Project Independence Evaluation System (PIES). *Input:* Input is reserves data from the Bureau of Mines and the Federal Power Commission Coal Survey. *Content:* The program allocates coal reserves into 40 coal types. There are 30 coal producing regions to which these reserves are allocated and then aggregated by coal type. These piles are then allocated to different mine types based on global, regional, and coal type specific parameters. Mines will be operational if coal is available to be mined and can be sold at a minimal acceptable selling price determined by the program. *Output:* Output consists of regional coal supply files and printed reports, including coal reserve base allocation, coal type and mine size allocation, and coal supply functions. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Project Independence Evaluation System (PIES). 6223.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-049

Subject Terms: Coal Production; Crude Oil Production; Econometric Models; Economic Impact; Energy Policy; Energy Prices; Energy Supplies; Forecasting; Gas Production; Simulation.

Purpose: The system is to evaluate various energy policy alternatives by predicting their impact on the energy sector over the next 5-15 years. *Input:* The input includes the Regional Econometric Demand Model (RD4), supply function for each fuel, capacity limits for production of each fuel, transportation network by mode, commodity, price controls, world energy prices, and macroeconomic forecast. The system requires extensive data input and approximately 10,000 lines of computer code. *Content:* The model consists of supply modules for various sectors of the energy industry: coal production, oil production, gas production, refineries, utilities, energy production via emerging technologies, transportation, and importing. The level of aggregation for each supply module is determined by division, specific to each supply module, of the United States into regions. The modules contain cost and capacity information for each region; for each of the years 1980, 1985, and 1990; and for each of several scenarios which reflect various policy alternatives. The model is updated annually for each new edition of the National Energy Outlook. The model assumes a competitive economic structure with upward sloping supply curves and downward sloping demand curves. Within this framework, the model is made to endogenously forecast the trajectories by which this equilibrium is achieved; and the data are generated assuming a smooth transition to the end state. A fundamental concept underlying the model is that prices will clear the market in all regions; that is, for the equilibrium set of prices, profit-maximizing producers, converters, and transporters will be willing to supply precisely the set of quantities demanded by cost-conscious consumers. The forecasts that the model generates are functions of numerous assumptions about the energy system, many of which can be varied to estimate the impact of policy initiatives or alternative world petroleum prices or to account for supply or demand uncertainties. Many of these policy options or uncertainties have been structured into scenarios, and the results of these scenarios underlie the discussion presented within the body of the annual National Energy Outlook. Additional scenarios can be and are generated continuously to explore policy options and uncertainties. All prices and quantities of energy goods produced, consumed, or converted are estimated on a regional basis. For each sector, a set of regional definitions is established to ease data collection and modeling. The supply side of the PIES equilibrating mechanism includes a set of activities that represents the flow of materials (crude oils, natural gas, electricity, coals, and refined petroleum products) from their source to a final destination. While there are many different materials which flow in the system, there are only eight final products consumed in demand regions–gasoline, distillate, residual, other petroleum, natural gas, steam coal, metallurgical coal, and electricity. The three categories of supply activities are production, energy conversion, and transportation. Each activity is described by possible combinations of output, input, and cost. Cost functions for existing activities include not only variable costs (such as operating and maintenance costs), but new activities also, including amortized capital costs. Capital costs associated with existing activities are viewed as sunk costs and do not influence the allocation solution although they are included in the average cost pricing mechanism when appropriate. The demand side uses a constant elasticity approximation to the demand mode described in summary of Regional Econometric Demand Model (RD4). The PIES Integrating Model operates as follows: A linear program which represents an interim approximation of the energy system is solved. The linear program includes representations of demand functions, supply functions, transportation activities, and energy conversion activities. The interim market clearing prices estimated by the linear program are used to refine the demand function approximation in order to re-solve the linear program. The process is repeated until the solution converges, determining an equilibrium of supply and demand quantities and prices. *Output:* Two reports are available as computer printouts: 1) PIES Model Report (WONDERBREAD)–updated annually. There is one for each year (1980, 1985, and 1990) and each scenario. It includes scenario description, raw materials acquisition report, material balance reports, summaries of conversion activities and yields, demand area requirements report, production final demand report, utility fossil fuel consumption report, table of primary products through system, resource requirements report, and executive data summaries. 2) WONDERCOOKIE–contains more aggregated and digested information than WONDERBREAD and is much briefer. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Natural Gas Shortage Model. 6238.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-050

Subject Terms: Energy Shortages; Forecasting; Mathematical Models; Natural Gas Shortages; Simulation.

Purpose: The system is to forecast natural gas shortages by State, by quarter. *Input:* The input is econometric estimates of State demands from Bureau of Mines data and econometric estimates of marketer production by Federal Power Commission region from American Petroleum Institute/American Gas Association data transmission flows from Federal Power Commission data. *Content:* Forecasts are quarterly, for eight quarters into the future for each State. *Output:* No regular reports are produced. The system is used as an analytical system to address policy issues as they occur. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Short Term Petroleum Demand Forecasting Model. 6239.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-051

Subject Terms: Energy Demand; Forecasting; Mathematical Models; Petroleum Demand; Petroleum Products Demand; Simulation.

Purpose: The system is to forecast the demand over the next three years for primary petroleum products. *Input:* The input is price assumption per fuel type; GNP estimates, Federal Reserve Board production indices; and supply estimates. *Content:* The content includes the demand by monthly, quarterly, and yearly time period for the price and the demand for fuel type. Forecasts of the Short Term Petroleum Demand Forecasting Model are used extensively in comparison with actual trends to give quantitative assessments of potential problems such as a possible shortage of gasoline or some other primary petroleum product. Forecasts are used by FEA as a basis for analysis of major decisions on energy policy such as decontrol of residual fuel oil, distillates, and other products. Another important use of the forecasting methodology is to study past trends in petroleum consumption to ascertain which factors accounted for the recent decline in petroleum demand relative to pre-embargo trends. *Output:* Forecasts of petroleum product demand by type by year are produced. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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International Energy Evaluation System (IEES).
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-052

Subject Terms: Coal; Crude Oil; Econometric Models; Energy Demand; Energy Supplies; Forecasting; Gas; Geothermal Energy; Nuclear Energy; Simulation.

Purpose: The model is to enable market clearing analysis of alternative energy sources on a world level, to evaluate overall OPEC demand, and to determine the availability and price of future U.S. energy imports. *Input:* Input consists of econometric demand forecasts from the IEES demand models, energy supply forecasts from the IEES supply models, and energy process data on world refineries, utilities, and transportation resources. *Content:* IEES is a world model of all energy resources (e.g., oil, coal, gas, nuclear) which defines energy demands by final product (e.g., gasoline, distillate, jet fuel) by sector of the economy (e.g., commercial, residential, industrial) for each major country of the world. The model specifies supplies of each source of energy in terms of crude oil (by type), gas, coal (by type), nuclear, geothermal, and synthetics (by type). The time frame modeled is from the present to 1990 with primary emphasis given to the years 1980, 1985, and 1990. Explicit simulations of electrical utilities, refineries, and the international tanker fleets are included in the integrating model itself. Simulations of the primary supply processes for oil, gas, and coal are included in the IEES supply models, and the results of these simulations are input to the IEES integrating model. The integrating model then seeks the supply/demand equilibrium for the world based upon energy prices and the supply constraints specified in the model. *Output:* Output includes regional/country level energy balances; energy supplies/demands/prices; electricity generation; refinery operations; world trade in oil, gas, and coal; and tanker/bulk carrier fleet utilization. *Availability:* The output is for internal use only while still under development.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Regional Econometric Demand Model and Auto Simulation Model (RD4). 6270.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-053

Subject Terms: Distillates; Econometric Models; Energy Demand; Forecasting; Gasoline; Jet Fuel; Residual Fuel Oil; Simulation.

Purpose: The model (RD4) is an interface to the PIES system. RD4 provides a demand surface to the Project Independence Evaluation System (PIES) equilibrating framework. In the integration, demand and supply are equilibrated, and fuel forecasts are produced for the years 1980, 1985, and 1990. The Auto Simulation Model is a submodel to the Regional Econometric Demand Model which forecasts a demand point for gasoline consumption. *Input:* The model provides 1975-90 demand surfaces (demand point prices, quantities, and elasticities) based upon input forecasts of population, per capita disposable income, natural gas hookups, value added in manufacturing, and exogenous price paths derived from previous PIES equilibria for natural gas, electricity, distillate, residual fuel, liquid gases, gasoline, jet fuel, and coal by economic sector. *Content:* The model is a regional model, disaggregated to the level of the FEA Region to provide demand estimates for energy consumption over the period 1975-90. An Auto Simulation Model exists as a submodel to the Regional Econometric Demand Model which provides a national demand estimate for gasoline consumption (shared out to FEA regions) and transportation usages of distillate, residual fuel, and jet fuel (all shared out to FEA regions). RD4 is an econometric model based upon 1960-75 historical data in the State/Federal Consumption and Price Data Base. The level of regional disaggregation is to the FEA Region. Econometrically derived coefficients are filed into the Regional Econometric Demand Model forecasting code, and demand surfaces are regionally derived from input of exogenous variables (population, per capita disposable income, etc.). *Output:* Output includes reports of prices and quantities for fuels modeled from 1975-90 and elasticities (available for 1980, 1985, 1990). Reports are in hardcopy form. There is one report available for each of the PIES demand scenarios. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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OECD Energy Demand Model. 6273.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-054

Subject Terms: Coal; Crude Oil; Econometric Models; Energy Demand; Forecasting; Gasoline; Jet Fuel; Natural Gas; Residual Fuel Oil; Simulation.

Purpose: The Organization for Economic Cooperation and Development Energy Demand Model forecasts energy demand by sector and sector product for 19 OECD countries. *Input:* Macro variables include gross domestic product, steel production, and vehicle regis-

tration forecasts. Other input is energy price forecasts by sector and historical energy consumption data. *Content:* The user determines the price assumptions and gross domestic product growth assumptions. Products covered include crude oil, natural gas liquids, motor gasoline, aviation fuel, residual fuel oil, and coal. *Output:* The output includes forecasted energy consumption and growth rates, forecasted price and growth rates, and simulated elasticity matrices. *Availability:* The reports are for internal use only.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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International Coal Supply Model. EIA-1.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-055

Subject Terms: Coal; Coal Mining; Energy Supplies; Forecasting; Mathematical Models; Simulation.

Purpose: The model uses a linear programming approach to forecast production of various coal types by region, and maximizes discounted revenue. There are financial and technical constraints. *Input:* The data requirements include maximum production capacity by coal type, existing and future total coal reserves, cost information (mine and equipment costs), and regional prices and production data. *Content:* The coal supply model allows input of time horizon; production scenario (mine openings, mine capacity, coal liftings); mine development costs, reclamation costs; and equipment constraints. *Output:* The principal output is coal tables, including reserves and production by coal type and cost tables, including operating and investment costs. Reports are computer printouts. All tables exist for each region and each time period. *Availability:* Publicly releasable information in available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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International Oil Supply Model. EIA-2.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-056

Subject Terms: Drilling; Energy Supplies; Forecasting; Mathematical Models; Oil Production; Petroleum; Simulation.

Purpose: The model uses a linear programming formulation to forecast an oil producing region's drilling and production programs such that discounted revenue is maximized. The formulation is subject to a region's technical and financial constraints. *Input:* The data requirements are productive capacity information for primary, secondary, and tertiary recovery methods; reserve information for existing reserves and undiscovered (found via exploration drilling) reserves; cost information for exploration, reserve development, productive capacity development, and production; and technical and economic constraint information. *Content:* The model allows the user to determine the oil-producing scenario and the time horizon to be forecast. *Output:* The output includes oil tables, including reserves, additions to reserves, production, and additions to productive capacity; cost tables, including investment costs (exploration and development), and operating costs; and drilling tables, including exploration feet drilled and development feet drilled. All tables are produced for each oil-producing region under consideration and for each time period in the forecast horizon. Reports are hardcopy computer printout. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Neoclassical Regional Growth and Energy Price Model. 6144.2.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-059

Subject Terms: Economic Development; Economic Impact; Energy Policy; Energy Prices; Forecasting; Mathematical Models; Prices; Simulation.

Purpose: The system is to determine the impact of State energy prices on State economic growth. *Input:* The input is annual growth in unit capital and labor costs, by State and annual costs of energy and nonenergy manufacturing input, by State. *Content:* The growth of manufacturing output in each State is determined by the growth of capital equipment, labor, energy input, and other material input. The growth rates of capital and labor depend on the profit rate and the wage rate, which in turn are affected by regional energy prices. The model has been tested on data for the States for the 1963-72 period. Using parameters based on these tests, energy policies which change State energy prices can be studied using this model. A hypothetical energy scenario (of eliminating State energy price differentials) has been simulated on the model. This simulation shows that energy prices are importantly related to regional growth. *Output:* No regular reports are produced. The system is used as an analytical system to address policy issues as they occur. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Income Distribution Impact Model. 6144.3.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-060

Subject Terms: Economic Impact; Energy Policy; Forecasting; Income Distribution; Mathematical Models; Simulation.

Purpose: The model is to provide estimates of the effects of energy policies on the size distribution of income for the United States. *Input:* The input is forecasts for functional distribution or components of personal income (external) and a 1962 Survey of Financial Characteristics of Consumers (internal). *Content:* The model provides a national estimate of the size distribution of income for the United States. The time period and specific energy policy examined are determined by availability of macroeconomic forecasts of impacts. The model is a constant shares distribution impact model. Each element of the size distribution is allocated constant share of the functional distribution over time. The model computes size distributions for a variety of energy policy forecasts supplied as input to the model. Effects are calculated by comparing forecasts for an energy scenario with an appropriate reference scenario. *Output:* No regular reports are produced. The system is used as an analytical system to address policy issues as they occur. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

391

Dynamic Input-Output Linear Programming Model for Regional Energy Impact Analysis (DIOLP). 6144.4.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-061

Subject Terms: Econometric Models; Economic Impact; Energy Policy; Forecasting; Simulation.

Purpose: Public Law 93-275, section 18, requires that the Administrator develop analyses of the economic impact of various energy policies on the economic vitality of regional, State, and local areas. The project attempts to accomplish this purpose with the aid of an economic programming model. *Input:* Direct input coefficients, sectoral output, Government expenditures, unemployment labor forces, and population data can be internally developed. Regional data on exports, imports, investment, external finances, and labor supply by skills will be collected by external agencies on a contractual basis. *Content:* The model is basically a constrained multisectoral optimization model. The model is capable of identifying quantitatively optimal adjustments of the regional economy to changes in energy policies under a given set of resource constraints including energy. Furthermore, the parametric program feature of the model makes it possible to obtain different time profiles of optimum adjustment processes corresponding to alternative energy policy scenarios. Such efficient adjustments to alternative energy policies will be measured in terms of changes in region-industry specific output, income, value added, employment, consumption, saving, and capital accumulation. The model will be developed for each of the nine census regions of the United States. The model will be first empirically implemented and tested for the New England region. *Output:* A working paper and development of an in-house computer capability to monitor regional impacts of energy policies on a continual basis are the output. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Regional Industrial Multiplier System (RIMS). 6144.5.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-062

Subject Terms: Econometric Models; Economic Impact; Energy Policy; Forecasting; Simulation.

Purpose: Public Law 93-275, section 18(a), requires the Administrator to evaluate impacts of actions on critical industrial sectors of the economy; employment on a national, regional, State, and local basis; and the economic vitality of regional, State, and local areas. Requirements for regional economic impact analysis are also implied in sections 5 and 15 of Public Law 93-275 and in Public Law 94-163, Title V, Part C–State Energy Conservation Programs. The Regional Industrial Multiplier System (RIMS) was developed to help meet these requirements and will provide one means for identifying the regional dimensions of proposed national policy. In addition to serving as a basic modeling structure for regional impact analysis, the data base will serve as input into other modeling systems being developed within FEA. *Input:* RIMS was initially developed for FEA by the Regional Economic Analysis Division, Bureau of Economic Analysis, Department of Commerce and consists of region- and industry-specific final demand multipliers and ratios for transforming gross output impacts into impacts on earnings and employment. The RIMS allows the analyst to consider the multiplier effects of one or more industries impacting on the economy. Required input is the initial changes in final demand (changes in output) by industry of interest. These changes must be estimated or obtained from business or other Government agencies. *Content:* RIMS can be used to derive input-output type direct and indirect production, earnings, and employment multipliers for every State and for the nine census regions. The State model disaggregates multiplier effects into 103 industrial categories. The census region model considers the 103 industries as well as 16 aggregated industries. The primary use of RIMS will be in analyzing site-specific impacts resulting from energy-related activities. It is best suited as a tool for quick-response analysis, providing timely estimates of the economic effects of energy policies on particular regions and critical industries within the regions. Solutions represent a static equilibrium for a given point in time. Model parameters can be updated as new information or new assumptions are made available. *Output:* The output consists of changes in gross output due to changes in final demand (total multipliers); changes in output by industry (direct effects and indirect-induced effects); changes in earnings (income from production) by industry; and changes in employment by industry. Output generation is not yet automated. Reports are provided on request. *Availability:* Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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FEA Household Energy Expenditure Model (HEEM). 6242.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-063

Subject Terms: Consumers; Econometric Models; Economic Impact; Energy Prices; Forecasting; Households; Income Distribution; Prices; Simulation.

Purpose: The HEEM model is a computerized data file containing 1973 energy information on approximately 50,000 U.S. households. The data file can be extrapolated into the future to forecast average household energy expenditures. The HEEM model helps in the evaluation of the impacts of energy events on the household sector of the U.S. economy and forecasts the impacts of higher energy prices on consumers and on the distribution of income. *Input:* In addition to the basic data file, the HEEM model contains software programs to screen the data file to give output for various subgroups of households. Input to invoke the data file and the screening programs can be made with either batch or interactive access to the computer system. Input for extrapolation of the data file includes demand elasticities and prices for coal, fuel oil, natural gas, bottled gas, electricity, and gasoline. *Content:* The data file was developed from the Public Use Sample of the 1970 Census and from the 1969 National Personal Transportation Survey. The data file was statistically aged to 1973 and can be extrapolated to future years. The HEEM model contains data on housing, housing characteristics, geographic locations, income levels, demographic characteristics, and energy expenditures. *Output:* Output is available on computer printouts on an as needed basis. Average Annual Household Energy Expenditures are tabulated by income and by geographic region for the year of interest. Screens can be made to yield tabulations for various subgroups of the households. Total energy expenditures can be tabulated, or the tabulations can be separated by fuel. Estimates are made to indicate the total number of U.S. households for each cell of the tables. *Availability:* The output is for internal FEA use only.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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FEA Household Energy Survey. 6248.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-064

Subject Terms: Consumers; Energy Consumption; Households; Insulation; Surveys.

Purpose: The survey provides information used in the analysis of households' consumption of energy by income groups, age, race, sex, and other socioeconomic and demographic characteristics. *Input:* This data source is the product of two nationwide surveys taken in 1973 and 1975. The 1973 survey's sample size is approximately 1,500 households. The same 1,500 households plus 1,500 new households comprise the 1975 sample. *Content:* Included is detailed information on households' ownership of appliances, use of insulation, transportation patterns, and energy consumption. The file also contains data on the demographic and socioeconomic characteristics of the household including employment status, age, race, and sex. These data can be used to analyze the impact of energy policies, including increased energy prices and the restructuring of electricity and natural gas rates, on the residential sector and its various components. *Output:* Ouput is available on computer printouts. Analyses can be accomplished by linking this data file to statistical packages such as the Biomedical Statistical Package or the Statistical Package for the Social Sciences. *Availability:* Output is generally available for internal use only.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Fiscal Impact of Energy Price Changes on State and Local Government Purchases of Goods and Services. 6335.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-065

Subject Terms: Economic Impact; Energy Prices; Forecasting; Mathematical Models; Procurement; Simulation; States.

Purpose: The system is to estimate the dollar impact on State and local government outlays for purchases of goods and services when energy prices change. This model is being developed as a result of Public Law 93-275, section 18, 15 U.S.C. 777, which requires that the Federal Energy Administration take account of the fiscal impact of proposed Federal energy policy changes on State and local governments. *Input:* Input into the model is data from reports prepared for the Federal Energy Administration and from other public information, e.g., Survey of Current Business; Compendium of Public Finances; Governmental Finances; FEA Working Paper 76-WPA-12; and Research Triangle Institute reports to FEA in February and May 1976. *Content:* Impact estimates are made for individual States. These estimates result from one or more fuels which have undergone a price change. Base year for data is 1967, and updates can be made as new data become available. Forecasts of impacts can be made for future years with various assumed energy price changes. The model makes use of energy use per dollar of purchases multipliers based on the 1967 U.S. input-output table. *Output:* No regular reports are provided. The system is used as an analytical system to address policy issues as they occur. *Availability:* The output is for internal use only.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Severance Tax Model. EIA-3.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-066

Subject Terms: Economic Impact; Forecasting; Mathematical Models; Minerals; Severance Taxes; Simulation.

Purpose: The system is to allocate severance taxes by State and types of production and to maintain an updated file of severance tax rate changes in order to project revenues and budgetary impacts for the State and local sector. (Severence taxes are taxes levied upon those who extract minerals from land within the borders of a particular State. These vary from State to State according to type of mineral extracted and the particular tax rate in effect.). *Input:* The system contains forecasts of various severance tax revenues. *Content:* Severance taxes and production of resources subject to severance taxation for all relevant States are the content. *Output:* No regular

reports are produced. The system is used as an analytical system to address policy issues as they occur. ***Availability:*** Output is intended primarily for internal use only. Publicly releasable information will be published in the National Energy Outlook.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

397

Crude Oil Pricing Model (DCROPS). 6272.1.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-067

Subject Terms: Crude Oil Production; Energy Prices; Energy Supplies; Forecasting; Mathematical Models; Petroleum; Simulation.

Purpose: The model is to provide short term monthly forecasts (a 40-month period beginning February 1976) of prices of domestic crude, given certain assumptions about crude production. These forecasts are provided in response to the need for information in the formulation of regulatory policy at FEA. The Energy Policy and Conservation Act of 1975 (Public Laws 93-275 and 93-159) is the authority for controls on the prices of certain domestic crude oils. ***Input:*** The input is crude oil production points for February 1976, 1977, 1978, 1979, and May 1979; decline rate of lower tier oil parameters, lower/upper tier shift in production parameters; freeze parameters (month start and stop, prices to start and stop); and monthly volume and cost of first purchases of domestic crude oil by oil category. ***Content:*** The model provides forecasts of upper, lower, and stripper well production by month, given assumptions about upper/lower allocation for each forecast period as well as other input parameters listed above. It also forecasts composite crude price by month, computes required ceiling adjustments necessary for aggregate compliance, and computes excess or deficiency in producer receipts. ***Output:*** Principal reports are output on a monthly basis and contain price, output, and aggregate producer receipts data. ***Availability:*** These are for internal use only.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

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Crude Oil and Natural Gas Production Model. 6272.2.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-068

Subject Terms: Crude Oil Production; Energy Prices; Energy Supplies; Forecasting; Mathematical Models; Natural Gas Production; Petroleum; Simulation.

Purpose: The model provides projections of prices and production for these fuels over a short to intermediate time period. It provides input to the Federal Energy Administration petroleum products forecasting system and to other systems requiring crude input forecasts. Production forecasts can be made under a variety of price ceiling strategies, reserve base estimates, and demand and supply elasticities. The solution method is an optimal control algorithm applied in an resource-exhaustion framework. The applicable implementation authority is the Energy Policy and Conservation Act of 1975, Title IV, Section 401. ***Input:*** The input is oil and gas reserves estimates from the Geological Survey, American Petroleum Institute and the American Gas Association; recovery cost functions from the National Petroleum Council, MIT Energy Laboratory, and Lewin and Associates; resource demand from FEA Regional Econometric Demand Model (RD4); regional and national domestic output growth rates; price ceiling regulations and decontrol schedules from FEA and Federal Power Commission; and capital productivity forecasts. ***Content:*** This model produces forecasts of domestic crude oil and natural gas production and prices on a monthly, quarterly, and annual basis. It has been designed to operate in an analytic environment in which ceiling levels have been imposed on wellhead prices of these resources at the national level. The model, when provided a national and regional set of demand curves for the resource and associated shortrun extraction cost functions and estimated rates of capital productivity growth, generates optimal resource extraction price and quantity vectors. The model solves iteratively for these optimal paths from the present through the point at which further resource recovery would not be profitable. The solution thus found is such that the present discounted value of marginal productivity of capital employed in resource recovery is constant over the life of resource deposits. Control variables at the discretion of the user are demand elasticity, initial resource supply, and growth rate of the economy. The model computes and reports optimal resource prices at each time period until exhaustion of economically recoverable resources; optimal resource production levels at each time period until exhaustion of economically recoverable resources; remaining proved and discoverable resource stocks; and cost conditions at each period as a function of resource stocks, production levels, time, and growth rate of technology. ***Output:*** Computer-generated reports are summary price and production forecasts, detailed quarterly forecasts for the United States and for FEA regions, monthly crude oil phased decontrol analyses, and detailed annual and quarterly forecasts for major oil and gas fields. ***Availability:*** Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

399

FEA Crude/Transportation Model. 6121.
OMB Funding Title/Code: Salaries and Expenses / 92-1500-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Government Operations; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources; *Senate* Committee on Governmental Affairs.

Data Base Reference: S-02900-069

Subject Terms: Crude Oil; Energy Policy; Energy Supplies; Fuel Allocation; Mathematical Models; Petroleum; Pipelines; Simulation.

Purpose: The system is to determine optional location and capacity of storage sites, drawdown strategies, and allocation of reserves for Strategic Petroleum Reserves and to evaluate alternative crude oil pipeline systems. The requirement is from the Energy Policy and Conservation Act of 1975. ***Input:*** The input is Project Independence Evaluation System (PIES) demand data; crude oil supply curves; pipeline network definitions (routes and capacities); and Strategic Petroleum Reserve site locations and capacities. ***Content:*** The content is the simulation of flow of crude oil between points in the strategic reserve network of refineries, bulk storage terminals, and crude oil pipelines. Simulation is on a national basis. ***Output:*** The output is a computer printout showing flows between all locations. ***Availability:*** Publicly releasable information is available through FEA's National Energy Information Center.

Agency Contact: National Energy Information Center; 1200 Pennsylvania Ave. NW, Room 1411, Washington, DC 20461; (202) 566-9025.

FEDERAL POWER COMMISSION

400

FPC Budget Files.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-1-0-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-001

Subject Terms: Budget Information Systems; Resource Allocation.

Purpose: The purpose is to collect and maintain quantitative and narrative information necessary to develop and justify annual budget estimates to the Office of Management and Budget and the Congress, and to monitor Agency budget execution. *Input:* The data are internal input from the various bureaus and offices of the Commission. *Content:* The system contains annual bureau and office statements of current and projected positions, workload, space, equipment, travel, personnel compensation; personnel benefits travel; rents, communications and utilities; printing and reproduction; supplies and materials; equipment; outlays; total obligations and inventory of ADP systems; and budget programs, as follows: water resources analysis; hydroelectric project licensing; electric utility regulation; gas certificate regulation; gas rate regulation; industry systems analysis; regulatory compliance; administration; and distribution. In addition, a narrative justification is submitted along with annual statements of Commission collections and payments. *Output:* Annual budget estimates to the Office of Management and Budget and the Congress (manual, hardcopy) are the principal reports. *Availability:* Congressional budget estimates are available publicly following submission of the President's budget to the Congress. Supporting data are for internal use only.

Agency Contact: Office of the Comptroller; 825 North Capitol St., Washington, DC 20426; (202) 275-4789.

401

Official FPC Files and Records.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-002

Subject Terms: Electric Utilities; Energy; Management Information Systems; Natural Gas.

Purpose: The purpose is to centrally control and maintain the official regulatory files and records of the Federal Power Commission. *Input:* External source input includes required reports and regulatory applications and filings submitted by electric utilities and natural gas companies. Internal input includes staff analyses, legal papers, and other data submitted by the Commission, FPC staff and other Federal sources, i.e., Department of the Interior, Environmental Protection Agency, U.S. Army Corps of Engineers, and the Federal courts. *Content:* The information consists of reports and other information concerning electric utilities and natural gas companies subject to the Commission's jurisdiction, including annual reports, natural gas producer, gas pipeline and electric rate schedules and tariffs, and volumes of Commission notices, orders, and opinions. Also maintained are docket sheets on all cases filed, the official service lists of the Commission, and service registers listing those upon whom notices, orders, decisions, or opinions were served. *Output:* No specific output is produced. This is primarily a reference source. *Availability:* Unless restricted by statute, Title 18 of the Code of Federal Regulations, or court orders, the information is publicly available by request to the FPC Office of Public Information.

Agency Contact: Office of Regulatory Support Services; 825 North Capitol St., Washington, DC 20426; (202) 275-4970.

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Corporate, Financial, and Economic Information File (RISCEID).

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-003

Subject Terms: Class A Electric Utilities; Electric Utilities; Energy; Financial Monitoring; Natural Gas Pipelines; Pipelines; Privately-Owned Utilities; Public Utilities.

Purpose: The purpose is to provide monthly and annual financial data on the electric industry and natural gas pipeline industry used by FPC, State Regulatory Commissions, Congress, other Federal agencies, the general public, and others. *Input:* Sources for the data are the electric utilities and natural gas pipeline companies as stated below filing annual reports, FPC Form 1, 1-M, and/or FPC Form 2 as prescribed under the requirements of the Federal Power Act and Natural Gas Act. Monthly reports, FPC Form 5, are filed by all electric utilities having $2.5 million or more in electric operating revenues, and FPC Form II, filed by the major interstate natural gas pipeline companies whose combined sales for resale and gas transported (interstate) or stored for a fee exceeded 50 billion cubic feet during the preceding calendar year. *Content:* Financial data are submitted monthly and annually on public use forms from privately-owned electric utilities; publicly-owned electric utilities; natural gas pipeline companies; Class A electric utilities; and major interstate natural gas pipeline companies. *Output:* Hardcopy press releases cover data on Class A and B privately-owned electric utilities and major interstate natural gas pipeline companies. Several annual statistical publications are generated in printout form. All output is accessible by terminals. *Availability:* The output is publicly available from the FPC Office of Public Information.

Agency Contact: Office of Accounting and Finance; 825 North Capitol St., Washington, DC 20426; (202) 275-4037.

403

Gas Supply Indicators.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-004

Subject Terms: Drilling; Energy Supplies; Natural Gas Pipelines; Natural Gas Reserves; Pipelines.

Purpose: Gas Supply Indicators data are compiled to provide quarterly analyses of industry trends affecting gas supply. The criterion of the statistical series is their value as leading indicators of the industry response to changing economic conditions and regulatory policies. *Input:* Data sources for the report are: 1) Mineral Industry Surveys, U.S. Department of the Interior, Bureau of Mines, Marketed Production, Imports and Exports of Natural Gas; 2) Federal Power Commission, Sales by Producers of Natural Gas to Interstate Pipeline Companies - FPC Forms 2, 2A; 3) Federal Power Commission, Form 11 - Natural Gas Pipeline Purchases from Producer and Sales to Ultimate and Retail Customers; 4) Hughes Tool Company weekly reports to the Drilling Contractor; 5) Hughes Tool Company Active Rotary Rig data reported weekly to the Oil and Gas Journal; 6) American Petroleum Institute, Quarterly Review of Drilling Statistics for the United States; 7) World Oil; 8) Bulletin of American Association of Petroleum Geologists; and 9) Contract data reported to the FPC, Bureau of Natural Gas. *Content:* "Gas Supply Indicators" includes annual and quarterly national data on marketed production, producer sales to interstate pipelines, number of active drilling rigs, exploratory and development drilling, and new contract sales by producers to interstate pipelines. Breakdowns of national series are made for offshore and FPC price areas. It includes a series of initial rates paid by interstate pipeline companies for natural gas under new long term and short term (emergency) contracts. The series covers the period 1970 to date and is updated quarterly. *Output:* A quarterly report with text, tables, and charts is produced. *Availability:* It is publicly available from FPC, Office of Public Information.

Agency Contact: Office of Economics; 825 North Capitol St., Washington, DC 20426; (202) 275-4170.

404

Bulk Electric Power System Reliability.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-005

Subject Terms: Electric Power; Electric Powerplants; Energy; Power Load Forecasting; Privately-Owned Utilities; Public Utilities; Reliability.

Purpose: The purpose is to evaluate matters concerning power interruptions, load reductions, and bulk power supply hazards; to determine suitable reliability criteria and standards of operation and planning; to study the effects of transmission line interconnections on the reliability and economy of power supply, including the maintenance of extensive and up-to-date transmission line maps; to determine the causes of generating plant unreliability and methods of improvement; to study the means of providing adequate generating capacity at lowest cost; and to study the methods of load forecasting. *Input:* Public use forms (FPC Forms 12, 12A, 12D, 12E-2, 12F) are filed periodically by electric utilities (privately-owned, publicly-owned, and cooperatively-owned). Reports are filed under Order 331-1 as the need arises due to service interruptions. Annual reports are compiled and filed in response to FPC Order 383-3 on a voluntary basis by the nine Regional Electric Reliability Councils. Reports are filed under Order 445 when utilities modify their contingency procedures. Minutes of the meeting of technical and administrative committees of the Reliability Councils and attendance by Bureau of Power staff engineers at such meetings are included. Attendance and participation in conferences and meetings of the national engineering societies and similar organizations are included, as well as information received from Government agencies and other sources. Form 12E-2 has 5 schedules; one is filed monthly, the other four semiannually. There are 269 respondents; some are individual utilities, some are pools responding as a single entity on behalf of their members, and some are holding companies responding as a single entity on behalf of their subsidiaries. Form 12F is filed annually by some 550 utilities owning or planning transmission facilities at 69 kv or greater voltage. *Content:* FPC Forms 12 and 12A are annual reports filed by electric utilities, giving information concerning energy production, transfers of energy and capacity, loads, generating units, and planned capacity. FPC Form 12D is similar to Form 12 but much abbreviated and is filed at 5-year intervals by very small utilities. Reports are filed under Order 331-1 by utilities suffering an interruption to service, as the occasion arises; these reports describe the particulars of the equipment failure or other circumstances that caused an unforeseen interruption of service to customers. Reports are filed under Order 445 when a utility changes its procedures for dealing with situations in which load exceeds (or threatens to exceed) capacity. The information reported describes the procedures to be instituted by the utility in the event of an emergency. The reports filed by the Reliability Councils under Order 383-3 summarize on an integrated regional basis the 20 year projected planning of the utilities in each Council area. For the first decade information is given in significant detail. For the second decade the information is more general. Through attendance at and participation in meetings of the various engineering societies, information is obtained concerning technological studies and advances in the area of engineering such as materials, components, devices, mathematical methods of system analysis, reliability studies, and economics of engineering. Data received from Government agencies consist of historical statistics and projections. The information is supplied by Federal and State agencies for the most part, some of it annually, some biennially, and some as the occasion arises. Form 12E-2 provides information on construction plans and changes in generating capacity and transmission lines, and load forecasts semiannually. It provides actual load and capacity data monthly. Form 12F provides information on transmission planning at voltages of 69 kv or higher. *Output:* The principal reports are a series of special studies on: 1) "Interstate Status" of electric systems; 2) the market for power from Federal and licensed hydroelectric projects; 3) the electric power aspects of environmental statements of nuclear and fossil fueled powerplants; 4) annual reports summarizing and discussing the load and capacity projections of the Reliability Councils for the following ten-year period and for the succeeding ten-year period; 5) semiannual reports summarizing load and capacity estimates for the forthcoming winter and summer peak load periods; 6) semiannual reports summarizing the status of planned generator construction, completion of units, and causes of delays in completion; 7) reports on special topics related to bulk electric power supply–Powerplant Availability, System Controls and Communications, Reserve Practices, and other topics; 8) quarterly reports summarizing data concerning systems outages affecting supply to customers and an annual report summarizing data concerning transmission lines; 9) maps of the U.S. transmission system, updated periodically; 10) special reports such as National Power Survey, and Bulk Power Supply analyses in response to congressional queries; and 11) verbal reports in response to requests for information from NRC, FEA, ERDA, GAO, OMB, State agencies, and members of the public. *Availability:* All studies are available on request.

Agency Contact: Division of Power Supply and Reliability; 825 North Capitol St., Washington, DC 20426; (202) 275-4718.

405

Electric Power Fuel and Environmental Analyses.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-006

Subject Terms: Air Pollution Control; Electric Power; Energy Prices; Environmental Assessment; Forecasting; Simulation; Thermal Powerplants; Water Pollution Control.

Purpose: The purpose is to analyze and evaluate information on electric powerplant fuel supplies, transport, stockpiles, quality, and costs; to determine the environmental effects of steam-electric powerplants and associated facilities upon air and water quality and the esthetic effects of transmission line installations; and to determine the effect of fuel and environmental control costs on the cost of electricity to consumers. *Input:* Input includes public use forms (FPC Forms #67 and #423); data from other Government agencies (Department of the Interior, Environmental Protection Agency, Energy Research and Development Administration, Federal Energy Administration); data from industry associations (National Coal Association, Edison Electric Institute, Electric Power Research Institute); and private communications with electric power industry representatives. *Content:* FPC Form #67, titled "Steam-Electric Plant Air and Quality Control Data" is filed annually by some 850 steam-electric plants from all parts of the United States, having a capacity of 25 megawatts or greater. The data include the following information: 1) Air Quality Control Data–fuel types, quantities, and quality; boiler designs, flue gas cleaning equipment, amounts of pollutants discharged to the atmosphere, disposal of ash and sulfur waste products, cost of air pollution control; 2) Water Quality Control Data–cooling water provisions, types of cooling systems, thermal and chemical discharges; 3) Future Air and Water Quality Data–projected plant expansions; quantity, quality, and source of future fuel requirements; projected plant water use; and 4) Plans and Costs for Meeting Air Pollution Standards–applicable air pollution control regulations, proposed method(s) for achieving compliance, pollution control costs associated with achieving compliance. FPC Form #423, "Monthly Report of Cost and Quality of Fuels for Electric Plant," is filed monthly by some 850 plants from all parts of the United States burning fossil fuels and having a total combined (steam-electric combustion, turbine, and internal combustion) generating capacity of 25 megawatts or greater. The form includes information on the type, quantity, quality, and price of fossil fuels delivered to electric powerplants; source of the fuel; and type of purchase. *Output:* Steam-Electric Plant Air and Water Quality Control Data is published annually. The Monthly Report on Fuel Cost, Quality is published monthly. The Annual Summary of Cost and Quality of Electric Plant Fuels, with special supplements on the origin of coal delivered to electric utilities and a comparison of the sulfur content of coal with applicable sulfur regulations is published annually. These are all hardcopy. *Availability:* All reports are publicly available.

Agency Contact: Division of Power Surveys and Analyses; 825 North Capitol St., Washington, DC 20426; (202) 275-4677.

406

Hydro and Electric Recurring Data Reports.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-007

Subject Terms: Electric Power Generation; Electric Utility Rates; Energy Consumption; Financial Statements; Hydroelectric Power; Privately-Owned Utilities; Public Utilities.

Purpose: The purpose is to provide for a series of authoritative periodic FPC publications and statistics (relative to the generation, transmission, distribution, fuel consumption and stack data, and sale of electric energy) that are regularly used by the Congress, industry, Federal, State, and local agencies, the general and technical press, foreign governments and the United Nations organizations, academic and research institutions, and the general public. *Input:* Public use forms are filed by the utilities with the FPC. *Content:* The content includes: 1) Annual Report (Classes A and B). Detailed financial and operating information, filed by privately-owned electric utilities with electric operating revenues of $1 million or more. Due March 31; 2) Annual Report, Municipal Electric Utilities. Similar information from municipal electric utilities with annual revenues of $250,000 or more. Due March 31; 3) Typical Net Monthly Bills for Residential Service. Filed annually by selected power suppliers in each State for specified communities, typical net monthly bills for power at retail for residential service for communities of 2,500 or more population; and commercial and industrial service for communities of 50,000 or more, or if there are no cities that size, the three largest. Due about February 15; 4) All-Electric Homes Data Sheet. Filed annually by power suppliers in all cities having populations of 50,000 or more or supplying the three largest cities, net annual retail bills for all-electric homes computed under rates applicable January 1. Also latest information on number of all-electric customers and average electric consumption. Due April 15; 5) Monthly Powerplant Report. Filed by all electric utilities with generating capacity, monthly information on generation of electricity and consumption and stocks of fuel (Form 4-white). And from a selected sample of industrial establishments, generally with installed generating capacity of 5,000 kilowatts or more (Form 4-pink). Due 10 days after month reported; 6) Monthly Statement of Electric Operating Revenue and Income. Monthly information on operating revenues and income, filed by all privately owned electric utilities with annual electric operating revenues $2.5 million and over, and certain publicly owned utilities. Due about 40 days after end of month; 7) Industrial Electric Generating Capacity. From all industrial establishments which owned or operated generating capacity, other than motor generators, at any time during the year and did not report monthly on Form 12-E2. Due May 1; 8) Summary for National Electric Rate Book. Selected retail rate schedules of electric utilities, both public and private, for inclusion in the FPC National Electric Rate Book. Filed periodically as requested by FPC; and 9) Retail Rate Level Change. All changes in retail rates, filed within 60 days of date of change, from all electric utilities serving at least one community of 2,500 or more population. *Output:* The principal hardcopy reports produced are: 1) Electric Power Statistics and advanced news release - hardcopy, monthly; 2) Typical Electric Bills - hardcopy, annual; 3) All-Electric Homes - hardcopy, annual; 4) Statistics of Privately Owned Electric Utilities - hardcopy, annual; 5) Statistics of Publicly Owned Electric Utilities - hardcopy, annual; 6) National Electric Power Generation and Energy Use Trends - hardcopy, quarterly; 8) Summary of Capacity, Production and Fuel Consumption - hardcopy, annual; 9) Retail Rate Increases - hardcopy, quarterly; 10) Supplement to Yearly Typical Electrical Bill Report (500 kwh) - hardcopy, quarterly; 11) Power Production Generating Capacity Data for 1970 to 1975 - hardcopy, annual; and 12) Monthly Comparisons of Peak Demands and Energy for Load by Power Supply Areas - hardcopy, annual. *Availability:* All publications are publicly available from the FPC; publications 1 through 5 are also available from the GPO.

Agency Contact: Division of Power Surveys and Analyses; 825 North Capitol St. Washington, DC 20426; (202) 275-4731.

407

Hydroelectric Power Resources of the United States (HPR).

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-008

Subject Terms: Electric Power Generation; Hydroelectric Powerplants; Powerplants.

Purpose: The purpose is to keep current an inventory of all existing hydroelectric plants in the United States and of potential undeveloped hydroelectric power sites; and to provide summaries by various categories, historical data, and forecasts for future development of hydroelectric power. *Input:* Data on existing hydroelectric

powerplants are obtained from reports received by the Commission from both privately- and publicly-owned electric utilities and from reports on industrial generating plants. Data on the undeveloped hydro power resources are obtained from various sources which include reports and studies by Federal, regional, State and local agencies, studies by private interests and applicants for licenses or permits from the Commission, or from any other available source. Acts of Congress such as the Wild and Scenic Rivers Act provide input that identifies exclusions and potential exclusions from the data file. *Content:* Each record in the data file on magnetic tape has 999 characters which provide for 160 items of descriptive information on each hydroelectric plant or site. These items include names of plants, sites, and reservoirs; locations by streams, major drainages, States and regions, by coordinates, elevation, river miles and relative sequence on river reaches; drainage areas and average inflows; dam and reservoir descriptions; project purposes; type of project; license project numbers and action dates; plant data items, including generator ratings, number of units, status, average annual generation, head, capability, hydraulic capacity, types of turbine and power conduit; cost data; numerous processing codes and other items of information; and pertinent remarks. *Output:* The principal reports are "Hydroelectric Power Resources of the United States, Developed and Undeveloped," every four years; an annual list of Federal hydroelectric plants in operation, under construction, and authorized; listings of 40 items from each record of the data file and four cross indexes in computer output formats; and certain summaries and tabulations of this data appearing in the annual report of the Federal Power Commission. *Availability:* "Hydroelectric Power Resources of the United States" is available from the Superintendent of Documents, U.S. Government Printing Office. Computer listings of selected plant and site data are generally for internal use, but are available on special request. A computer printout of each entire tape record is available on FPC Form 557.

Agency Contact: Division of River Basins; 825 North Capitol St., Washington, DC 20426; (202) 275-4684.

408

Electric Regulatory Activities.
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-009

Subject Terms: Electric Utility Rates; Price Regulation; Public Utilities; Public Utility Rates; Utilities.

Purpose: The purpose is to provide information concerning the electric utility regulatory workload of the Commission, electric rate schedules on file with the Commission, and the status of formal electric rate cases pending before the Commission. *Input:* All information is derived from internal sources. *Content:* The subsystems and their contents are: 1) Quarterly summary of electric regulatory activities - provides workload data on electric rate filings and cases for current and previous quarters, summary of rate cases pending at end of quarter, and number of cases and dollar value of corporate transactions pending for current and previous quarters; 2) index of electric rate schedules - lists all electric rate schedules filed with the Commission, including names of selling companies and other parties and types of electric service provided. Index is updated and reissued quarterly; and 3) alphanumeric Index by Company Name and Docket Number - lists alphabetically by electric utility (and by docket number where more than one case is pending) the docket number, status, assignment and internal activity for all formal electric rate cases. Covers all cases since 1974. *Output:* Summaries of electric regulatory activities are issued quarterly as Commission news releases. The index of electric rate schedules is a quarterly computer printout, reproducible in hardcopy, of approximately 350 pages, alphanumeric order, and tabular. The index by company name and docket number is a hardcopy computer printout, issued monthly, in columnar format and alphanumeric order. *Availability:* Summaries of electric regulatory activities and the index of electric rate schedules are available to the public. The index by company name and docket number is produced for internal only.

Agency Contact: Division of Rates and Corporate Regulation; 825 North Capitol St., Washington, DC 20426; (202) 275-5667.

409

Power Surveys and Systems Evaluation.
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-010

Subject Terms: Electric Power Generation; Electric Powerplants; Energy Policy; Financial Statements; Privately-Owned Utilities; Public Utilities; Utilities.

Purpose: The purpose is to investigate the electric power industry, including its characteristics, demands and supplies, structure, markets, and value of power, and to project future development patterns of the industry, the costs of electric power, and the impact of public policies on the industry. *Input:* Information is derived from electric power industry reports submitted to the Commission, including certain FPC public-use forms (FPC Forms 1, 12, 12E), staff analyses and reports, and reports of government-industry advisory Committees. *Content:* Industry reports are submitted to the Commission monthly, semiannually, and annually, and cover all aspects of electric power generation for every geographic region of the Nation. Advisory Committee reports are submitted as requested and are concerned with specific topics, such as power supply, fuels, finances, conservation, research and development, power supply adequacy, and environmental issues. The Committees are established to consider a particular issue, and their reports and recommendations are used as source material in the development of Commission policies. Public use form data include the following: 1) Form 1–detailed financial and operating information filed annually (March 31) by all privately-owned electric utilities with annual electric operating revenues of $1 million or more; 2) Form 12–annual power system statement (due May 1) filed by all systems which generate at least part of their own power and whose net energy generation exceeds 20 million kilowatt hours per year; and 3) Form 12E–a monthly supplement to Form 12 listing the near-term summer or winter load supply situations of the responding utilities and related transmission and generating facility delays. *Output:* Advisory Committee and Commission reports covering various electric power industry issues and problems are published as necessary. Periodic hardcopy reports of seasonal load-supply situations (national and regional) are published. Annual hardcopy reports are published listing plant costs, operating and fuel expenses, and related data for steam-electric, hydroelectric and gas turbine powerplants. *Availability:* All reports are available to the public through FPC or the Government Printing Office.

Agency Contact: Division of Power Surveys and Analyses; 825 North Capitol St., Washington, DC 20426; (202) 275-4766.

410

Status of Pending Hydroelectric Applications.
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-011

Subject Terms: Hydroelectric Powerplants; Licenses; Powerplants.

Purpose: The purpose is to provide information concerning the status of hydroelectric project applications pending for preliminary permits, licenses, license amendments, transfers, or surrenders, and other matters related to the Commission's hydroelectric licensing program under Part I of the Federal Power Act. *Input:* Information is derived from applications submitted to the Commission and from input at various stages of application processing. *Content:* The system provides the applicant name, FPC project number assigned, date application was filed, processing status of the application, installed generating capacity of the project, the engineer assigned, and a brief description of the type of application. A separate subsystem also provides a brief narrative history of applications involving new hydroelectric generating capacity. *Output:* The overall system provides an automated, hardcopy status report of all pending applications. It is published quarterly but can be updated more frequently. The system can be queried by applicant, status category, type of application, and project number. The quarterly new capacity report is manually produced. *Availability:* The reports are for internal use only.

Agency Contact: Division of Licensed Projects; 825 North Capitol St., Washington, DC 20426; (202) 275-4863.

411

Special Reports Issued by the FPC and Federal Power Commission Publications.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-012

Subject Terms: Electric Power; Information Services; Maps; Natural Gas.

Purpose: The purpose is to provide to the press, the Congress, other Government agencies, the regulated industries, and the general public with information on availability of publications and reports issued by the FPC. *Input:* Information is submitted by internal sources, including all organizational units within the FPC. *Content:* These publications list special reports and publications issued by the Federal Power Commission. Reports are grouped under general, electric power, natural gas, special report, and map categories. The list of special reports covers reports available free of charge from the Office of Public Information. Title, date of issue, and news release (NR) number (where applicable) are provided. Publications contained in the publications list are available from the Superintendent of Documents, U.S. Government Printing Office. Title, date of publication, price, and description of contents are provided for each. These are updated as necessary. *Output:* The output consists of statistical reports, rules and regulations, decisions and opinions, operating data, special gas and power studies, maps, cost and rate information, power and gas savings, gas curtailment reports, electric load supply projections, and other matters, revised periodically. These are monthly, quarterly, annually, or as necessary. All are hardcopy publications. *Availability:* Reports are publicly available, from GPO, NTIS, and FPC. Availability varies from report to report.

Agency Contact: Office of Public Information; 825 North Capitol St., Washington, DC 20426; (202) 275-4006.

412

Natural Gas Industry Evaluation Systems.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-013

Subject Terms: Energy Industries; Forecasting; Gas; Natural Gas; Synthetic Fuels.

Purpose: The National Gas Survey was established by a series of Commission orders, in accordance with the requirements of the Federal Advisory Committee Act, to provide the Commission, the public, and the industry with information designed to provide a clearer picture of the present and future course of the natural gas industry than could be obtained from the mass of unevaluated statistics and information currently available. This information is required for effective regulation of this industry. *Input:* The data in this system are the end product of a combined effort, directed by the Commission in which Federal and State agencies, industry representatives, and members from academic institutions and technical societies all participate, utilizing all industry knowledge, data, and information currently available. *Content:* The information in the system includes analyses of natural gas resources, natural gas industry technology, industry growth trends, and the anticipated interaction of probable future market forces, assuming various public policy and private industry decisions. The impact of future technological changes is carefully considered. The program goal is a periodically updated, comprehensive analysis of the future energy situation, and an overview of the natural gas industry and its probable future course. The National Gas Survey is nationwide and worldwide in scope. *Output:* The principal output of the survey will be hardcopy reports on the following subject areas; nonconventional natural gas resources, synthesized gaseous hydrocarbon fuels, regulatory aspects of substitute gas, rate design, impact of the gas shortage on consumers, efficiency in the use of gas, finance, and curtailment strategies. *Availability:* The system's output in the form of task force reports, preliminary summaries (chapters), and final, Commission approved reports (volumes) is available to the public. The source of published volumes is the U.S. Government Printing Office. All other documents are available through the Commission's Office of Public Information and/or from National Gas Survey files.

Agency Contact: Bureau of Natural Gas; 825 North Capitol St., Washington, DC 20426; (202) 275-4516.

413

Natural Gas Company Operating Information File.

OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-014

Subject Terms: Energy Industries; Exports; Imports; Natural Gas; Natural Gas Pipelines; Pipelines.

Purpose: The Natural Gas Company Operating Information file provides the Commission and the public with detailed data and information on various aspects of the regulated natural gas industry such as reserves, production, production costs, contract and rate filing summaries, underground storage, imports and exports, pipeline curtailments, pipeline construction costs, and intrastate contract prices received by jurisdictional companies. It also encompasses natural gas company compliance filings, area rate refund reports, and certificate

filing fees made by these companies. This file is maintained under the general requirements of section 14(a) of the Natural Gas Act. *Input:* The data in this file are derived from official FPC data collection forms, various compliance filings, and other reports required to be filed by natural gas pipeline and producing companies under the Commission's jurisdiction. *Content:* The natural gas company operating information file contains the following information: Dedicated year-end reserves and annual interstate production by company, by State and FPC production area, updated annually; producer expenditures, exploration and development activity, reserve additions and revenues by company updated annually; jurisdictional producer intra and interstate production and reserves by company, updated annually; underground storage volumes by company, by geographic region, updated monthly (semimonthly November through March); underground storage volumes, capacity, deliverability and cost by company, by geographic region, by field, updated annually; imports and export volumes and monthly prices by company, by FPC docket, by location, updated annually; actual and estimated pipeline requirements and curtailments by company and region, annual and winter basis, updated semiannually; actual monthly curtailments by company, by State, updated quarterly; pipeline construction costs by mile, by pipe size, by function, by company, by FPC docket, by geographic region, updated annually; monthly intrastate contract prices by company, by FPC production area, by State, updated quarterly; listing of regulated pipeline companies by type and size, by service area, updated semiannually; average wholesale gas prices for 14 large metropolitan areas, updated annually; reserve dedications by company, by FPC production area, by purchaser, updated monthly; field code listing by county and State name and code; buyer, seller and small producer code listings with name changes and date of change, active or inactive status; and jurisdictional contract and rate summaries by company updated continuously. *Output:* The system output is keyed in most instances to the frequency of reporting via official FPC data collection forms, filings, and reports. These include pipeline reserves and production - annual; underground storage - semimonthly, monthly/annual; imports and exports annual; pipeline curtailments - quarterly, semiannual; construction costs - annual; pipeline listing - annual; wholesale gas prices - annual; interstate gas prices - quarterly; reserve dedications monthly; field, buyer, seller and small producer listings - annual. The code listings and reserve dedication reports are issued as ADP printouts; all other reports are issued as news releases and/or formal reports. *Availability:* With the exception of the internal monthly and semimonthly underground storage reports and two internal annual reports on pipeline construction costs, output is available to the public through the Commission's Office of Public Information. Information pertaining to producer reserves and cost data is considered confidential pending Commission and/or court action.

Agency Contact: Bureau of Natural Gas; 825 North Capitol St., Washington, DC 20426; (202) 275-4410.

414

Natural Gas Regulations System (Producer Rate).
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-015

Subject Terms: Energy Prices; Government Regulation; Interstate Commerce; Natural Gas Prices.

Purpose: Producer rate regulation is required by the Natural Gas Act to assure that natural gas is sold in interstate commerce at rates which are just and reasonable. The major functions of this system are to review exploration, developmental, and production costs associated with the production and sale of natural gas, recommend rates required to explore for and develop the natural gas reserves essential to the needs of the country, and review all producer rate filings made with the Commission. This system is maintained to provide the Commission and its staff with the information necessary to determine just and reasonable rates for the sale of natural gas. *Input:* The data are derived primarily from producer rate change filings, rate schedules, industry questionnaires, Commission orders and opinions, and data available from the Natural Gas Operating Information File. *Content:* This file contains records of rates applied for by producers for interstate gas sales to pipelines, a copy of each contract under which producer sales are made plus correspondence and other related producer information. These rate filings are made pursuant to Commission opinions establishing nationwide rates or as a result of contractual requirements or State actions affecting rates being charged. *Output:* Opinions which establish just and reasonable rates are produced approximately every two years. Hardcopy is available. Producer rate change filings are reported on summary reports on a continuous basis. Hardcopy reports only are available. *Availability:* National Rate Opinions are available to public in hardcopy form. Producer rate changes are reported on continuous reports for internal distribution only.

Agency Contact: Bureau of Natural Gas; 825 North Capitol St., Washington, DC 20420; (202) 275-4579.

415

Natural Gas Regulation System (Producer Certificate).
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-016

Subject Terms: Government Regulation; Interstate Commerce; Licenses; Natural Gas Pipelines; Natural Gas Sales; Pipelines.

Purpose: Under the Natural Gas Act, producers are required to obtain certificate authorization to sell gas in interstate commerce and to obtain abandonment authorization for the cessation of any sale of gas in interstate commerce. Certificate applications and abandonment applications are filed by producers pursuant to the Commission's Rules and Regulations as set forth in the Code of Federal Regulations, Title 18, Chapter I. The purpose of the file is to provide the Commission staff with adequate information concerning the amount of gas available, terms and conditions of gas sales, and location of gas dedicated to the interstate pipeline system. *Input:* The data necessary to support this system include applications for certificates of public convenience and necessity and gas contracts filed by producers, Commission orders and opinions, and data available from the Natural Gas Operating Information File. *Content:* The files contain a record of all producer certificate applications and contracts which govern the terms and conditions of the sales. Each certificate provides the applicant's name; description of facilities; pipeline locations, length, diameter, daily capacity; any compressor, gas-on-line, dehydration or purification plant; storage facilities; gas supply; and gas contract. Each gas contract contains the name of the purchaser, point of delivery, contract volume, price at time of filing, date and term of contract, and special conditions. *Output:* A semiannual summary of producer certificate filings of various types is prepared by the Bureau of Natural Gas for the Commission's information in hardcopy form with no computer capability. This summary identifies large producer certificate applications, small producer contracts filed by pipelines, applications for limited term certificates and for optional certificates and notifications of 60-day emergency sales by docket number or file number, seller, buyer, field, county, State, price, term, and volume. *Availability:* The summary of producer certificate filings is publicly available upon request, but it is primarily an internal report prepared for the information of the Commission.

Agency Contact: Bureau of Natural Gas; 825 North Capitol St., Washington, DC 20426; (202) 275-4524.

416

Natural Gas Regulation System (Pipeline Rate).
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-017

Subject Terms: Energy Prices; Government Regulation; Natural Gas Pipelines; Natural Gas Prices; Pipeline Rates; Pipelines.

Purpose: Pipeline rate regulation is required by the Natural Gas Act to assure that pipeline rates are just and reasonable. As part of its burden of proof in support of a proposed rate increase, a pipeline company is required to submit cost and financial data including an overall cost of service which is the starting point in determining just and reasonable rates. It represents the revenue requirements that will enable a company to recover its cost and operate profitably in order to attract capital for sustained service to its customers. Formal hearings are usually held on these rate increase proposals. Rulemaking proceedings are also instituted to set standards and new policies and to provide necessary information for effective regulating actions. *Input:* The data necessary to support this system are derived primarily from pipeline rate change filings, rate schedules, tariffs, reports and investigations instituted as a result of rate change filings, and Commission orders and opinions. Data from the Natural Gas Operating Information File are also used. *Content:* The Information File contains a historical record of each individual regulated pipeline's just and reasonable rates, cost of service, plant in service, depreciation rate, gas purchase cost and volume sold, volume of gas sold and rate price, balance sheet data, income statements, transmission line data, gas storage data, a finance payment data, capital structures, and allowed rate of return. *Output:* Opinions which establish just and reasonable rates are issued after the Commission has decided individual pipeline formal rate cases. Hardcopy is available. *Availability:* Pipeline rate opinions are available to the public.

Agency Contact: Bureau of Natural Gas; 825 North Capitol St. Washington, DC 20426; (202) 275-4371.

417

Natural Gas Regulation Systems (Pipeline Certificate).
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-018

Subject Terms: Government Regulation; Licenses; Natural Gas Pipelines; Pipelines.

Purpose: Under sections 3 and 4 of the Natural Gas Act, over 120 jurisdictional natural gas pipeline companies must submit applications to the FPC in order to obtain approval prior to the construction and operation of new facilities, to make connections, to import or export gas, to provide new or modify existing service, and to abandon facilities. These jurisdictional companies transport and sell about 2/3 of the Nation's gas supply. The certification requirement has been placed upon those companies in order to protect the public interest by insuring adequate service, just and reasonable rates, and to prevent the unnecessary duplication of facilities. *Input:* The data necessary to support this system are derived primarily from the certificate application filed by the pipeline company, from Commission orders and opinions, and from data available from the Natural Gas Operating Information File. Supplemental data are frequently requested by staff from the applicant as required. *Content:* This file consists of all certificate applications applied for by Natural Gas Companies. Each application for a certificate by a jurisdictional pipeline company is accompanied by specific data on the project as to the financing, engineering, economics, gas supply, market, State and local authorization, location of facilities, flow diagrams, environmental impact, cost of facilities, construction, maintenance and operation schedules, the impact the projects will have on the entire system's operation, gas volumes to be transported, anticipated startup dates, and other relevant company data. Data on natural gas curtailment plans are also a part of this information source. *Output:* The ultimate output is the Certificate of Public Convenience and Necessity issued by the Commission. Reports at the staff level include internal memos recommending action, exhibits, testimony, and environmental impact statements. *Availability:* The Certificate of Public Convenience and Necessity, Exhibits, Testimony, Environmental Impact Statements, and correspondence to and from the applicant are all available to the public through the FPC, Office of Public Information. Staff memos recommending action are restricted to internal use.

Agency Contact: Bureau of Natural Gas; 825 North Capitol St., Washington, DC 20426; (202) 275-4496.

418

FPC Library.
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interior and Insular Affairs; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-03300-019

Subject Terms: Energy; Information Services; Libraries; Public Utilities.

Purpose: The Federal Power Commission Library maintains materials which relate to certain phases of FPC fiscal and budgetary programs: current and retrospective files relating to congressional reports, hearings, and public laws for the regulatory agencies, as well as several executive departments such as Agriculture, Interior, and Energy Research and Development Administration. *Input:* Materials are derived from internal and external sources. *Content:* The content includes an extensive collection of publications and materials related to general management and accounting functions; the United States budget dating back to 1921; statistics of electric and gas, public utilities, including finance and management; Moody's Public Utilities and Moody's Industrials back to 1913; Standard and Poor's services on companies, stocks and bonds; Ebasco's analyses of public utility financing; Commerce Clearing House services on Federal and State taxation; publications containing data on finance and banking which influence the national economy and hence the use of electric power and natural gas; Federal Power Commission electric rates arranged by State, dating from 1939; and American Gas Association rate service. The remaining bulk of the collection deals with the legal and technical materials directly involved in public utility regulation, including publications on energy, environment, fuels, economics, accounting, and law. *Output:* Normal library products are produced. *Availability:* The library is available for FPC staff use only.

Agency Contact: Office of Administrative Operations; 825 North Capitol St., Washington, DC 20426; (202) 275-4303.

419

Natural Gas Distribution Model.
OMB Funding Title/Code: Salaries and Expenses / 26-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Interstate and Foreign Commerce; *Senate* Committee on Appropriations: Public

Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation.

Data Base Reference: S-03300-020

Subject Terms: Forecasting; Mathematical Models; Natural Gas Demand; Natural Gas Distribution; Natural Gas Pipelines; Pipelines; Simulation.

Purpose: The model is a mathematical program which determines the optimum distribution of natural gas from producing areas to markets through the natural gas pipeline network. *Input:* Input data requirements for the model are the demand for natural gas by State, sector (residential, commercial, industrial, electric utility), and year, and natural gas production (both interstate and intrastate) by FPC producing area. Demand data, by sector, are provided by the Federal Energy Administration. Production data are derived from data prepared by the Future Requirements Committee and published in Future Gas Consumption of the United States, Volume 6, December 1975. *Content:* The model computes the optimum allocation of natural gas to sectors within each State, using goal-oriented techniques of mathematical programming. Optimum allocations are computed in accord with user supplied factors indicating the relative importance of satisfying demand in each of the four sectors in the States. The model determines an optional allocation from a set of potential solutions which are constrained by such factors as pipeline capacity, gas production, and maximum allowable deviation from historical patterns of gas distribution. *Output:* Major hardcopy reports consist of predicted flow of gas from supply areas to market areas on a pipeline-by-pipeline basis and predicted allocations of natural gas to residential, commercial, industrial, and electric utility sectors on a State-by-State basis. As the need for analysis of natural gas distribution arises, the model is run and reports are produced. *Availability:* Sample output from past analyses is available from the Agency contact.

Agency Contact: Pipeline Certificate and Curtailment Division; 825 North Capitol St., Washington, DC 20426; (202) 275-4515.

TENNESSEE VALLEY AUTHORITY

420

Bookkeeping System.

OMB Funding Title/Code: Tennessee Valley Authority Fund / 64-4110-0-3-301.

Congressional Relevance: *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Public Works and Transportation; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Environment and Public Works.

Data Base Reference: S-05700-001

Subject Terms: Accounting; Budget Information Systems; Management Information Systems; Resource Allocation.

Purpose: The system accumulates accounting data and prepares internal reports for accounting and for management to plan, monitor, and control expenditures. *Input:* All internal organizations provide source data. Major input data are distribution of receivables and payments. *Content:* The system provides information that is necessary to prepare and support balance sheets and income statements for TVA on a monthly basis. *Output:* Output includes statement of expenditures by organizations–fiscal year budget allocations are included; financial statement, volume I–corporate type balance sheet and statement of operations and funds and supporting schedules; and financial statement, volume II–budget and related fiscal information. Output is hardcopy and prepared monthly. *Availability:* Information is prepared for internal use.

Agency Contact: Division of Finance; Tennessee Valley Authority, Knoxville, TN; (615) 632-3291.

ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

421

Financial Information System. 383; 384; 385.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-053; Operating Expenses / 89-0100-0-1-251; Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Armed Services; *House* Committee on Science and Technology; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Armed Services; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-001

Subject Terms: Accounting; Budget Information Systems; Financial Management.

Purpose: The system is the primary financial information collection and dissemination mechanism for the Agency. *Input:* The input includes congressional actions, OMB budget decisions, field financial reports, field and headquarters financial plans, program financial status information, and manpower management reports (contractor). *Content:* The financial management system is composed of two primary modules–the accounting module and the budgeting module. The accounting and budgeting modules are interfaced to provide comparisons of actual costs with financial plan estimates. This provides a tool for measuring performance by month. The interface enables much of the past year actual data to be recast into the new budget structure by machine. Data in these modules are organized in a programmatic rather than object class or special analysis structure. The accounting module is designed to collect and disseminate cost and obligation data at varying levels by budget and reporting classification, reporting organization, contractor, and location. The budgeting module is essentially made up of two major submodules–budget formulation and budget execution. Budget execution is built around the Financial Plan, a document which provides guidance and ceilings on costs and obligations at various reporting levels. Each office or organization which receives an allotment also receives a financial plan to provide guidance in expending the allotment. Since ERDA receives two appropriations (one for operating expenses and one for plant and capital equipment), each program is actually controlled by two financial plans. Both financial plans are computer-generated and contain only current year data. The financial plan is organized by office, organization, and program. The operating expenses financial plan is maintained on a cost and obligations basis, while the plant and capital equipment financial plan is on an obligational basis. Budget formulation is primarily a manual system. Budget schedules show a 3-year spread (past year actuals, current year estimates, and budget year estimates) for comparison purposes. Since the budget structure changes somewhat from year to year, past year actuals and the current year estimates are recast into the new budget year structure for comparability. Special analyses of the budget data are also prepared as are certain crosscuts which emphasize computers, laboratories, and personnel. *Output:* The principal output consists of Budget Status Tables, Financial Plans (Cost and Obligation), Manpower Reports (Contractor), Obligation and Cost Accounting Reports (Actual Vs. Planned), and Treasury Schedules and Reports. *Availability:* Output is generally for internal use only.

Agency Contact: Office of the Controller; 20 Massachusetts Ave. NW, Room C-207, Washington, DC 20545; (202) 353-5002.

422

National Solar Heating and Cooling Information Center. Energy (305).
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-002

Subject Terms: Cooling Systems; Heating Systems; Information Centers; Solar Cooling; Solar Heating.

Purpose: The National Solar Heating and Cooling Information Center was established by the Department of Housing and Urban Development in cooperation with the Energy Research and Development Administration, under provisions of Public Law 93-409, to help make everyone aware of the practical feasibility of solar energy and to encourage the public and industry to consider solar energy systems for houses and commercial buildings. *Input:* Information and data (e.g., reports, studies, proposals, grants) from HUD and ERDA laboratories and contractors, universities, consultants, and other contractors from both the public and private sector are sources of input. *Content:* Information is, or will be, available on such subjects as thermal energy for buildings, flat plate solar collectors, thermal storage systems, solar water heating, building heating systems, combined heating/cooling systems, collectors and component materials, focusing collectors, economic analysis of solar systems, and photovoltaic power generation. Other topical areas are electric power generation, methane production, agricultural applications, thermal radiation properties, and solar system models. The Center can provide locations of solar homes and offices for inspection, names of architects who specialize in solar design, builders with solar experience, solar equipment manufacturers, detailed scientific or technical findings, and comprehensive listings of books and periodicals on specific subjects. *Output:* Based on existing and new information from the ERDA Oak Ridge Technical Information Center, the NSH and CIC maintains or is developing a voluminous listing of state-of-the-art reports, periodicals, books, buyers' guides, and a directory of solar energy uses and users. Literature searches will be performed on request. The Center provides exhibits and the names of organizations that will furnish topical speakers. Information on grant applications (e.g., eligibility and timing for application submission) is available. The Center is establishing a centralized data bank of information. *Availability:* All data that are provided directly by the Center are unclassified, nonproprietary, and available to Government agencies, business and industry, and the general public without cost. Information provided by other sources available to the Center may have to be purchased.

Agency Contact: Division of Solar Energy; 20 Massachusetts Ave. NW, Washington, DC 20545; (202) 376-9482.

423

ERDA Headquarters Technical Library.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-053; Operating Expenses / 89-0100-0-1-251; Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Armed Services; *House* Committee on Science and Technology; *Senate* Committee on Agriculture and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Armed Services; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-003

Subject Terms: Energy; Information Services; Libraries.

Purpose: The ERDA Technical Library serves ERDA Headquarters personnel by providing the scientific and technical literature needed to support ERDA's mission. The library maintains an extensive collection of books, reports, public documents, and serials covering all energy-related areas. The library is open to the public, but materials must be used in the library or borrowed through established Interlibrary Loan procedures. *Input:* The input includes MARC (Machine-Readable Cataloging Applications Package); Unclassified Reports Listing program; Headquarters Report Index -2444; KWIC-KWOC (Key Word In Context - Key Word Out-of-Context); and Serial Information Control System (SICS). *Content:* The computerized system contains all books cataloged by the ERDA Library since mid-1974, and includes selected subject areas of L.C. MARC tapes, which are updated monthly. The number of all full size unclassified reports held by ERDA Library are reported and updated every six weeks. The titles and number of ERDA Headquarters reports are updated monthly (Word Processing). The KWOC Index of the titles of ERDA Headquarters reports is updated monthly. All subscriptions handled by the ERDA Library are updated monthly. *Output:* The output consists of: 1) Author-Title Book Catalog, Subject Book Catalog, KWIC Index to Book Catalog, Shelf List to Book Catalog - Selected Dissemination of Information output from MARC tapes; 2) Unclassified Reports List; 3) ERDA 76-41; 4) ERDA Headquarters Reports; and 5) Accessions and Holdings List, KWIC Index, Routing slips, Serial Expiration Report, Routing List by Journal, Publisher List, Routing List arranged by recipient, X Cards, Claim Letters, and Serial Expiration Letter. All output is hardcopy. *Availability:* Reports are available through NTIS. Other output is for internal use.

Agency Contact: Division of Administrative Services; 20 Massachusetts Ave. NW., Washington, DC 20545; (202) 376-9015.

424

Energy Films Distribution. 75.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-053; Operating Expenses / 89-0100-0-1-251; Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Agriculture; *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Armed Services; *House* Committee on Science and Technology; *Senate* Committee on Agriculture, Nutrition, and Forestry; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Ar .ations: Public Works Subcommittee; *Senate* Committee on Armed Services; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-004

Subject Terms: Audiovisual Aids; Energy; Films.

Purpose: The purpose of the Energy Film Distribution System (EFD) is to provide teachers, broadcasters and program chairmen of schools, television stations, civic clubs, government and industrial organizations with a means to obtain educational and informational films as well as technical and professional films on energy and energy-related subjects. The EFD is an on-line film booking system which books written or oral requests for motion picture films up to a year in advance and generates appropriate forms and correspondence to confirm booking, daily listings of films to be mailed, mailing labels, a record of the return of films, and subsequent availability for dispatch, and statistics. Information recorded includes that identified on the enclosed form T1-234. *Input:* The input is schools, TV stations, civic clubs, Government, and industrial organizations. *Content:* This is an on-line film booking system which records the availability of educational films on energy and energy-related subjects. The system generates forms to confirm bookings, labels, a record of the return of films, and a daily listing of films to be mailed.

Output: The system generates hardcopy correspondence forms to communicate with film requestors. It also produces status reports on the circulation of films. The frequency is daily. ***Availability:*** The films and related system products are available to the public.

Agency Contact: Technical Information Center, Oak Ridge, TN 37830; (615) 483-8611.

425

Liquid Metal Fast Breeder Reactor Plant Parameter Information System. 40.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-005

Subject Terms: Breeder Reactors; Liquid Metal Fast Breeder Reactors; Reactors.

Purpose: The system provides compilation of LMFBR reactor systems characteristics for use in making management decisions. Data input and retrieval are via an on-line computer system (System 2000). *Input:* The input is from the Division of Reactor Development and Demonstration, contractors, international agencies, and the Assistant Administrator for International Affairs. *Content:* This system is part of the overall LMFBR program of developing a broad technological and engineering base for the LMFBR with extensive utility and industrial involvement so that upon this base a capacity can be established for a competitive commercial breeder industry as a means for meeting national energy needs in the 1990's and beyond. One of the program's overall objectives is to achieve public acceptance of the LMFBR Power Generation System by demonstrating its inherent strategy, economic benefit, and environmental acceptability. *Output:* Output from the system is generally in hardcopy form via System 2000. The frequency of output is on an as-required basis. *Availability:* Output is generally restricted to internal use.

Agency Contact: Division of Reactor Development and Demonstration; 9700 S. Cass Ave., Argonne, IL 60439; (312) 739-7711.

426

Nuclear Material Management Plan. 41.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-006

Subject Terms: Inventories; Nuclear Materials.

Purpose: The system's purpose is the inventory and resource management of nuclear materials. *Input:* The input is from operation offices via contractors. *Content:* The major input document to the system (Form AEC 408) is concerned with the Quarterly Forecasts of Nuclear Material Requirements. Some of the information required on the input document is: Project Number, Project Title, and Material Type. This information is submitted to the system on an annual basis. *Output:* Output is generated annually and represents a summary of the input. *Availability:* Output is generally restricted to internal use.

Agency Contact: Waste, Production and Reprocessing; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4128.

427

Reactor Information File. 289.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-007

Subject Terms: Electric Utilities; Nuclear Powerplants; Nuclear Reactors; Powerplants; Reactors.

Purpose: The Reactor Information File edits and processes parametric, cost, and schedular data received from electric utilities and other sources on civilian nuclear powerplant units. Computer printouts from RIF are used for preparation of ERDA publications ERDA-125, ERDA-30 and TID-8200, as well as reports, analyses, and information responses to other ERDA components, Congress, other agencies, industry, and the public. *Input:* The input comes from electric utilities having nuclear plants ordered or under construction and the Nuclear Regulatory Commission Offices of Public Affairs and Industry Relations. *Content:* The system interfaces with other systems which maintain information (including statistics) in the following areas with respect to central station nuclear powerplants: Number of plants announced, on order, under construction, operable, or terminated; schedules; capacity rating; costs; and operational history. *Output:* The output frequency is monthly, quarterly, or as required. Products of the system are sent to ERDA organizations, other agencies, industry and the public via Publications ERDA 125 and 30; and the Congress (Joint Committee on Atomic Energy and other energy-related committees) receives "update" which is a report on nuclear power. *Availability:* These are publicly available through ERDA distribution.

Agency Contact: Nuclear Energy Assessments; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-3748.

428

National Plan for Energy Research, Development, and Demonstration: Creating Energy Choices for the Future. 123.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Interior and Insular Affairs.

Data Base Reference: S-06000-008

Subject Terms: Budget Information Systems; Energy Planning; Energy Policy; Energy Programs; Research and Development.

Purpose: The National Plan is published yearly in two volumes. Volume 1 presents the energy technology goals, Research, Development, and Demonstration (RD and D) priorities, implementation policies and required resources for the normative and strategic elements of ERDA's plan. Volume 2 details energy R and D activities which are supported in whole or in part by the Federal Government. It highlights specific program goals, objectives, strategies, schedules, problems, and expected results. The plan's primary purpose is to be used as a background for budget preparations and hearings. *Input:* The primary input to the plan comes from the ERDA Program Administrators and ERDA labs and research centers. Programs from other Federal agencies are also presented in Volume 2. *Content:* The documents are updated each year and present the national energy

policies, plans and programs for the Federal Government. Volume 1 defines the national energy problem, presents the nature of its solution, and defines the roles of the private sector and ERDA and the other Federal agencies. The fundamentals of the plan, such as the national energy policy and technological goals, strategies, priorities and supporting technologies are discussed along with a presentation of the current year's energy R and D program. Volume 2 presents the following for each program: objectives, national energy goals it supports; strategy; Federal role; international cooperation; technological, institutional, and environmental status and problems; program implementation; and milestone charts. ***Output:*** The National Energy Plan is published yearly in two parts. These are Volume 1: The Plan; and Volume 2: Program Implementation. Both reports are sent to the President and the Congress early in the calendar year. ***Availability:*** The National Plan is available to the public from NTIS.

Agency Contact: Planning, Analysis, and Evaluation; 20 Massachusetts Ave. NW, Washington, DC 20545; (202) 376-4354.

429

Coupled Energy System - Economic Models. 465.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-009

Subject Terms: Econometric Models; Economic Impact; Energy Policy; Energy Supplies; Environmental Assessment; Forecasting; Simulation.

Purpose: The integrated energy system-economic models are used to evaluate the long run economic, energy, and environmental effects of various combinations of Government energy policies. These include policies relating to research, development, and demonstration of new energy supply, conversion, and end-use conservation technologies both in current and future time periods. ***Input:*** The integrated-uses economic portions of the system rely on largely historical data to project economic levels and inter-industry activity through the year 2000. Energy and technological parameters arise from exogenous forecasts of individual technologies and resources. Data Resources, Inc., Cambridge, MA, shares provision of economic data with the Brookhaven National Laboratory National Center for the Analysis of Energy Systems. The latter provides energy and technology data. ***Content:*** The integrated system consists of four models. The Data Resources Incorporated (DRI) Macroeconomic Growth Model is used to specify the annual values for the Gross National Product (GNP) and its component parts as well as relative prices and shares for capital and labor. The growth model is used to estimate the nominal and real values of consumption, investment, government spending, and net exports over time through the year 2000, given exogenously specified population and productivity estimates, and aggregate production and utility functions. The second model is the Hudson-Jorgenson nine-sector econometric model of interindustry transactions. This model is based on a system of accounts for the private domestic sector of the U.S. economy, including final demand, primary input, and inter-industry transactions in current and constant prices. The U.S. economy is divided into nine industry groups, including five groups within the energy sector – coal mining, crude petroleum and natural gas, petroleum refining, electric utilities, and gas utilities. The model also includes three categories of primary input – capital services, labor services, and imports – and four categories of final demand – consumption, investment, government purchases, and exports. Through this model, the process of production for energy and nonenergy products can be traced from the purchase of primary input through all stages of intermediate processing to deliveries to final demand. ***Output:*** Model output, hardcopy, is used as input to larger analyses such as the annual national plan for energy research, development, and demonstration, topical reports, and special analysis for ERDA units. The model output is rarely the final product in an analysis. ***Availability:*** Analyzed model output is publicly available through the Office of the Assistant Administrator, Planning, Analysis, and Evaluation, ERDA or the Center for the Analysis of Energy Systems, Brookhaven National Laboratory.

Agency Contact: Planning, Analysis, and Evaluation; 20 Massachusetts Ave. NW, Washington, DC 20545; (202) 376-4364.

430

Contracts Information System (CIS). 93.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-053; Operating Expenses / 89-0100-0-1-251; Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Armed Services; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Armed Services; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-010

Subject Terms: Contract Management; Contractors; Contracts; Government Procurement; Procurement.

Purpose: The CIS is a centralized data base which collects and processes contract and procurement data. ***Input:*** The input is derived from headquarters divisions administering contracts and/or interagency agreements, all field offices and energy research centers, and ERDA cost-type prime contractors when total procurement actions under the contract are estimated at $250,000 or more. ***Content:*** Information is used for management purposes, for informational reports, and for furnishing procurement information required by congressional committees, the General Accounting Office, General Services Administration, Small Business Administration, Renegotiation Board, Office of Federal Contract Compliance, Department of Labor, and the proposed Government-wide Federal Procurement Data System (FPDS). ***Output:*** Output relates to contracts and contractors and is generated in response to queries by the Congress, private industry, and other Government agencies. Nine reports pertaining to procurement are updated monthly. A vendor file is also contained in the system. ***Availability:*** Output is generally available to the public through agency distribution.

Agency Contact: Division of Procurement; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-3316.

431

A Computer Code for Conceptual Cost Estimates of Steam Electric Power Plants (Concept). 468.
OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.
Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-012

Subject Terms: Construction Costs; Nuclear Powerplants; Powerplants; Thermal Powerplants.

Purpose: The CONCEPT computer package was developed to provide conceptual capital cost estimates for nuclear and fossil-fueled powerplants. Cost estimates can be made as a function of plant type, size, location, and date of operation. The output includes a detailed breakdown of the estimate into direct and indirect cost according to the accounting system described in the cost model. Cost models based on 1973 technology are currently provided in CONCEPT IV for first and second unit PWRS, BWRS, HTGRs, and coal, oil, and gas-fired plants. PWR, BWR, and coal cost models are currently being updated. *Input:* The input is derived from Union Carbide General Offices - Oak Ridge, IAEA, external utilities, and miscellaneous sources. *Content:* The system collects semiannual data on construction labor and material costs relating to powerplants. Some of the materials factored in are concrete ply-form, three types of structural steel, reinforcing steel, lumber, and land. One of the major system files contains data on cost models representing 48 different types of plants. *Output:* The system generates daily output in two major areas. One area represents the development and testing of various methods and models; the other one is associated with providing special assistance for construction estimates. *Availability:* Details on the system (including the computer programs) are available to the public through the Argonne National Code Center. A reference manual (ERDA-108) is also available through NTIS.

Agency Contact: Office of Nuclear Energy Assessments; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-3748.

432

U.S. Uranium Resources and Supply.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-013

Subject Terms: Nuclear Energy; Power Resources; Uranium.

Purpose: The purpose of this data acquisition system is to gather information on domestic uranium ore reserves and resources, economics, and production capability as a basis for Agency and industry planning for nuclear energy and alternative system development. Data are gathered and published in a wide ranging variety of uranium raw materials related subjects, including efforts of Government and Government contractors and the private sector. *Input:* Information is developed by gathering the results of industry activities in uranium exploration and mining. The basic data are used to prepare estimates of U.S. uranium reserves and resources. Analysis of the data by ERDA personnel results in projections of uranium supply. Statistics on exploration and mining activity and future plans are also provided by industry. ERDA is generating additional information under a National Uranium Resource Evaluation program which is a systematic reconnaissance survey using various methods to identify areas favorable for the occurrence of uranium leading to preparation of national uranium resource appraisal. *Content:* Information covers all aspects of uranium raw materials area for the United States, including Alaska. Data are released routinely through press releases and papers and annually through publication of "Statistical Data of the Uranium Industry" and a Uranium Industry Seminar held in Grand Junction, CO. Similar data are gathered and reported regarding foreign uranium resources and production capability. *Output:* The principal output is the report GJO-100, "Statistical Data of the Uranium Industry," published annually. Reports on specific areas and topics are published as work is completed. *Availability:* The data and reports are available to the public from ERDA.

Agency Contact: Division of Uranium Resources and Enrichment; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4303.

433

Information Center for Energy Safety (ICES).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-014

Subject Terms: Energy; Information Services; Occupational Health and Safety; Power Resources; Safety.

Purpose: The Information Center for Energy Safety (ICES) was established at Oak Ridge National Laboratory by the Energy Research and Development Administration as a national center for collecting, storing, evaluating, and disseminating safety information essential to the development and use of several nonnuclear forms of energy. *Input:* Energy safety information is collected by information specialists who scan all available sources–literature, meetings, personal contacts among experts in the field, screen out those of pertinence, separate the sources into ICES's subject areas, and abstract and enter into the ICES storage and retrieval system. *Content:* Energy safety is related to the following energy technologies; solar–the energy as derived directly from the sun's radiance; coal–the energy obtained directly from the burning of coal; coal conversion and utilization–the energy and source chemicals obtained by conversion of coal; oil, gas, and shale technology–the energy obtained by conversion of these fuels; magnetohydrodynamics (MHD)–the energy obtained by direct conversion of fuel to electricity; thermonuclear–the engineering, metallurgical, and physical science requirements associated with plasma containment; geothermal–the energy obtained from geothermal sources; wind–the energy obtained from wind sources; electrical energy systems–the storage, transmission, and use of electrical energy; transportation and storage–containment, storage, and transfer of energy other than electricity; and advanced systems–the energy obtained from advanced sources. *Output:* The output consists of answers to technical inquiries, state-of-art reviews, periodic dissemination of information, monthly material in National Safety Council R and D Newsletter, bibliographies and abstracts, and consultation with staff members. *Availability:* Since ICES is currently under development, access to the information is limited to Federal agencies, their contractors, and selected industrial concerns.

Agency Contact: Environment and Safety; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-3562.

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Socio-Economic Environmental Demographic Information System (SEEDIS).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-015

Subject Terms: Demography; Energy Policy; Environmental Assessment; Forecasting; Population Statistics; Socioeconomic Indicators.

Purpose: The purpose of the system is threefold: digitizing census tract maps, creating a geographic data base, and mapping this information. Energy-production decisionmakers and planners are supplied with the capability to manipulate, analyze, display, and map a broad range of socioeconomic, environmental, and demographic data. *Input:* The input is derived from Bureau of Census population and housing data, Bureau of Labor data, San Francisco Bay area data on industrial water use in California, and business, transportation, agriculture, health, environmental, and natural resources data. *Content:* SEEDIS has the following capabilities. It produces high-quality, low-cost maps for graphical display of statistical data by geographical and political area and provides an error free geographical data base for spatial analysis applications. The SIRAP project within SEEDIS provides a central repository for regional and national data bases used by the Army Corps of Engineers in cost-benefit analyses and socio-economic-environmental impact planning for their civil works construction projects. A series of 12 basic demographic profiles containing information useful to planners and researchers in human resources programs was compiled from the 1970 census data and is used for projecting manpower profiles. A specialized data base limited to data items pertaining to the San Francisco Bay metropotitan area is being developed for use by the Association of Bay Area Governments. In collaboration with the Lawrence Berkeley Laboratory Energy and Environment Division, a multiregional input-output model is being developed which utilizes linear programming techniques to analyze U.S. production, employment, and energy use. A project to edit, sort, interpolate, and display the California water use by industries is being completed. The Employment Projections Project has enabled the Bureau of Labor Statistics and State employment security agencies to project employment by occupation and industry to 1980 for States and metropolitan areas with populations of 250,000 and over. The Regional Management Information System and the Computerized Charting for Employment Benchmark Adjustments projects involve data from several Department of Labor automated reporting systems, such as the Employment Security Automated Reporting System (ESARS) and the Employment Security-202 (unemployment insurance) reporting system. *Output:* The output includes maps, bar charts, pie charts, analyses, population studies, manpower studies, input-output studies, California and Bay Area studies, and employment studies. *Availability:* These are available to Federal agencies and their contractors and State and local government agencies.

Agency Contact: Environment and Safety; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-3562.

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Stripmining and Land Reclamation Information System.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-016

Subject Terms: Coal Mining; Environmental Assessment; Land Reclamation; Strip Mining.

Purpose: The system's purpose is to assist the solution of the problems of land reclamation and land management by the organization of a data base and implementation of a data system for its use. The data base is related to assessing the environmental impact of surface mining. *Input:* The input is derived from State extraction and reclamation permits of coal mining States and publications reporting results of R and D. *Content:* The content includes data gathered on State mining permits, including mining and regulatory data; disturbance data, including related geophysical and ecological information which is used to understand the potential problems in each region; mine topography, hydrology, and overburden characteristics; and permit cost effectiveness studies of alternative reclamation techniques, policies, and programs. The initial emphasis is on Illinois, Indiana, Ohio, and Kentucky. *Output:* Queries are answered, and analyses and studies are prepared. *Availability:* This information is available to Federal agencies and their contractors and State and local agencies.

Agency Contact: Environment and Safety; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-3562.

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Fossil Energy Update.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-017

Subject Terms: Energy; Fossil Fuels; Information Services; Research and Development.

Purpose: Fossil Energy Update is a comprehensive current awareness announcement of publications covering fossil energy research, development, and demonstration issued by ERDA and its contractors. *Input:* Fossil Energy Update also contains references to reports, journal articles, conference proceedings, patents, and monographs issued by other U.S. Government agencies, research and industrial institutions, and by foreign countries. *Content:* The subject scope of Fossil Energy Update includes coal and coal products, petroleum, natural gas, oil shales and tar sands, electric power engineering, environmental aspects, power transmission and distribution, and MHD Generators. *Output:* An abstract journal is published monthly in hardcopy form. Each issue of Fossil Energy Update contains the subject, personal author, corporate source, and report number indexes. *Availability:* Fossil Energy Update is available to the public on a subscription basis from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. The annual subscription cost is $27.50. The price covers 12 monthly issues and an annual cumulative index.

Agency Contact: Office of Technical Information; 20 Massachusetts Ave. NW, Washington, DC 20545; (202) 353-4035.

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Solar Energy Update.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-018

Subject Terms: Abstracts; Bibliographies; Energy Research; Photovoltaic Conversion; Power Resources; Research and Development; Solar Energy; Tidal Power; Wind Energy.

Purpose: Solar Energy Update is a comprehensive current awareness announcement of publications covering solar energy research, development, and demonstration issued by ERDA and its contractors. *Input:* Solar Energy Update also contains references to reports, journal articles, conference proceedings, patents, and monographs issued by other U.S. Government agencies, research and industrial

institutions, and by foreign countries. *Content:* The subject scope of Solar Energy Update includes solar energy conversion, photovoltaic conversion, photosynthetic conversion, solar thermal powerplants, ocean thermal gradient powerplants, solar radiation utilization (space heating and air conditioning, cooking, water heating, etc.), solar collectors and concentrators, tidal power, and wind energy. *Output:* An abstract journal is published monthly in hardcopy form. Each issue of Solar Energy Update contains subject, personal author, corporate source, and report number indexes. A cumulative index volume will be published annually beginning in 1977. *Availability:* Solar Energy Update is available to the public on a subscription basis from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. The annual subscription cost is $27.50. The price covers 12 monthly issues and an annual cumulative index.

Agency Contact: Office of Technical Information; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4035.

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ERDA Energy Research Abstracts (ERA).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-019

Subject Terms: Abstracts; Energy Research; Information Services; Nuclear Energy; Research and Development.

Purpose: ERDA Energy Research Abstracts (ERA) provides abstracting and indexing coverage of nonnuclear and nuclear energy scientific reports, patents, journal articles, conference papers, theses, and monographs originated by ERDA and its laboratories, energy centers, and contractors. *Input:* ERA is the prime vehicle for timely announcement, in comprehensive and organized fashion, of the availability of publications reporting the results of ERDA's research, development, and demonstration programs. Dissemination of this information is necessary for the fulfillment of ERDA's mission and is authorized by law (Public Law 93-438, sec. 107e). *Content:* ERA also covers certain other technical information on nuclear fuel cycle technology, foreign reactor and fusion technology, as well as documents received from foreign governments with which ERDA has agreements for technical cooperation. *Output:* An abstract journal is published semimonthly in hardcopy form. Each issue of ERA contains subject, personal author, corporate author, and report number indexes. The latter indicate the availability of each report. Semiannual and annual indexes are provided. *Availability:* ERA is available to the public on a subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. ERA is available on an exchange basis to universities, research institutions, industrial firms, and publishers of scientific information. Federal, State, and municipal agencies concerned with energy development, conservation, and usage may obtain ERA free of charge.

Agency Contact: Office of Technical Information; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4035.

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Technical Information Center (TIC).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-020

Subject Terms: Energy Research; Information Centers; Information Exchange; Information Services; Technology Transfer.

Purpose: The Center (TIC) in Oak Ridge, TN, is the collection, processing, and distribution point for scientific and technical information generated by the ERDA programs. One of the primary objectives of TIC is to insure that ERDA-sponsored research is reported promptly and that reports are distributed within ERDA and to its contractors. When suitable, reports are also made available to the general public. Scientists, linguists, editors, craftsmen, educators, writers, engineers, librarians, computer specialists, and information specialists maintain TIC's strong centralized technical information activity. *Input:* Authority for public availability of ERDA's research and development is derived from the Energy Reorganization Act of 1974. In pursuing its mandate, TIC locates and acquires energy-related scientific and technical information nationally and internationally through bilateral agreements with foreign countries, special exchange programs, and organization-to-organization agreements. *Content:* Selected information items attained through the above means become part of ERDA's science information archives and data base and are retrievable on both a current and retrospective basis. The TIC bases are divided according to broad subject disciplines and are available for use in several ways–batch searching (RESPONSA); on-line interactive searching (RECON); as separate tapes available to others for local application; as tapes representing the U.S. input to the International Nuclear Information System of the IAEA; and for bibliography preparation. Nearly 850,000 citations are subject indexed and machine-searchable, corresponding to ERDA's programmatic interests. *Output:* The TIC publishes the ERDA Energy Research Abstracts, Energy Abstracts for Policy Analysis, Solar Energy Update, Fossil Update, and various bibliographies. TIC also develops and maintains the ERDA data bases, the RESPONSA batch search system, and the RECON on-line search system. TIC maintains a unique publishing capability for preparing, printing, and announcing ERDA prestige publications and any publication of special interest to the ERDA program. The Center provides technical reference services and document and film requests services and carries out an educational services program devoted to aiding students and teachers in their studies of energy. *Availability:* Films and educational materials are available from the ERDA Technical Information Center, P. O. Box 62, Oak Ridge, TN 37830. Other publications are for sale through the U.S. Government Printing Office, Washington, DC 20402, or the National Technical Information Service, Springfield, VA 22161.

Agency Contact: Office of Technical Information; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4035.

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RECON (REmote CONsole).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-021

Subject Terms: Energy; Information Storage and Retrieval; Power Resources; Research and Development.

Purpose: RECON is the ERDA computerized on-line, interactive storage and retrieval system. It is designed to permit scientists, librarians, and information specialists located at various sites across the country direct and fast access to bibliographic records stored in

large files which cover a broad range of energy-related topics. *Input:* The data bases available on RECON include those made available through negotiated agreement with other Federal agencies and companies and the ERDA Energy Data Base (EDB), with TIC providing the total input and evaluation. *Content:* The subject scope of the nearly 850,000 citations includes nuclear science, power reactor licensing and regulation, energy policy, coal technology, solar energy, geothermal energy, oil shale, magnetohyrodynamics, conservation, electric power engineering, direct energy conversion, thermonuclear power, environment and safety, and basic research and development. The indexes available for on-line searching are author, corporate author, country of publication, journal code, patent country, subject categories, and controlled subject descriptors. RESPONSA, a variation of the RECON system, allows searching in the batch mode. *Output:* The principal output of RECON is the capability for computer terminal searching. The output of the ERDA Energy Data Base includes ERDA Energy Research Abstracts, Energy Abstracts for Policy Analysis, Solar Energy Update, Fossil Update, and various bibliographies. *Availability:* RECON is available to ERDA, ERDA contractors, and other Government agencies with which ERDA has agreements.

Agency Contact: Office of Technical Information; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4035.

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Energy Abstracts for Policy Analysis (EAPA).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-022

Subject Terms: Abstracts; Economics; Energy; Energy Policy; Energy Research; Forecasting; Information Services; Power Resources.

Purpose: EAPA is a bibliographic data base sponsored by the Energy Research and Development Administration. EAPA provides abstracting and indexing coverage of selected publicly available nontechnical literature contributing to energy-related analysis and evaluation. The thrust is toward policy issues, economics, supply and demand, and forecasting of major and potential energy sources. The audience includes scientists, policymakers, planners, and economists. *Input:* EAPA covers pertinent material from congressional committee prints; ERDA and other Federal agency and department reports; news reports; regional and State government documents; books; and conference proceedings and papers. In general, only documents considered to have significant reference value and published within the past two years are included. *Content:* Subject areas covered by EAPA are policy; conservation; research and development studies; economics; supply and demand; forecasting; systems studies; and environmental effects. Specific fields of energy sources, including fossil fuels, nuclear fuel, hydrogen and synthetic fuels, and hydroelectric power; unconventional energy sources, including solar, wind, geothermal, tidal, and waste products; energy conversion and storage; and energy consumption, including residential, commercial, industrial, agricultural, and transportation sectors, and intersectional studies; and efficient energy utilization in these sectors. *Output:* EAPA is produced monthly in hardcopy form. It is machine-readable on RECON as a subset of ERDA Energy Data Base. *Availability:* EAPA is available to the public on a subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The annual subscription rate is $20 for domestic subscribers. An annual subscription includes 12 issues plus an annual index.

Agency Contact: Office of Technical Information; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4035.

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Technical Books and Monographs.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-023

Subject Terms: Bibliographies; Catalogs; Energy; Information Services.

Purpose: This catalog is a bibliography of books and monographs sponsored by the Energy Research and Development Administration. *Input:* The books and monographs are grouped under 13 subject categories. Information for each book, published or in press, includes title; author and author affiliation; publisher and publication date; a physical description of the book consisting of page and illustration count; Library of Congress card number; International Standard Book Number; a brief descriptive statement concerning the book; and a list or a description of the contents for more recent books. Recent symposia published as ERDA project reports appear in a special section at the end of each subject category. Additional ERDA publications are described at the end of the catalog. *Content:* The content is a bibliographic listing of books and monographs published by ERDA. *Output:* The output is an annual hardcopy of ERDA-sponsored books and monographs. *Availability:* It is free on request to ERDA Technical Information Center, P. O. Box 62, Oak Ridge, TN 37830.

Agency Contact: Office of Technical Information; 20 Massachusetts Ave. NW, Washington, DC 20545; (301) 353-4035.

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Center for Energy Studies (CES).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-028

Subject Terms: Energy Research; Information Services; Power Resources.

Purpose: The Center for Energy Studies (CES) was established to provide a central liaison for energy research and educational activities and to provide a formal focal point for the collection and dissemination of energy information. *Content:* The Center was given a broad mandate to initiate, stimulate and provide liaison for multidisciplinary energy programs. To date, programs have been initiated or enlarged in the following areas: Geothermal, energy conservation, coal and lignite, solar and wind power, nuclear, oil and gas, new fuels, electric power, and environmental effects. *Output:* The Center has conducted several major policy studies for Federal, State, and local governments. *Availability:* For publications, contact Jerry Matthews, Energy Information Services, ENS 302, The University of Texas at Austin, Austin, TX 78712.

Agency Contact: Center for Energy Studies; The University of Texas at Austin, Austin, TX 78712; (512) 471-3434.

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Controlled Fusion Atomic Data Center.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-029

Subject Terms: Energy; Nuclear Energy; Nuclear Fusion; Particles; Thermonuclear Energy.

Purpose: The Controlled Fusion Data Center was established in 1965 and is sponsored by the Energy Research and Development Administration, Division of Magnetic Fusion Energy. *Input:* Fusion experimenters submit data to the Center. *Content:* The Center produces data on collisions involving charged and neutral particles with gases and surfaces which are directly related to controlled thermonuclear research. *Output:* The Center publishes data compilations and state-of-the-art reviews and maintains a bibliography of collision processes. *Availability:* Government agencies and their contractors, research and educational institutions, and industry may use data produced by the Center. Data compilations are either published commercially by John Wiley and Sons, Inc., or sold by the U.S. Government Printing Office.

Agency Contact: Controlled Fusion Data Center; Oak Ridge National Laboratory; P.O. Box X, Oak Ridge, TN 37830; (615) 483-8611.

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Criticality Data Center.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-030

Subject Terms: Criticality; Fissionable Materials; Information Centers; Nuclear Energy; Nuclear Materials; Safety; Transportation of Hazardous Substances.

Purpose: The Criticality Data Center is sponsored by the Energy Research and Development Administration, Division of Military Applications. The Center was established in 1965 and concerns itself with criticality safety. *Input:* The input is derived from books, monographs, reports, journals, and data in the subject area. *Content:* The content is criticality safety data in transportation, storage, and chemical and metallurgical processing of fissile materials. *Output:* The Center performs analyses of the critical dimensions of accumulations of fissile materials; publishes data compilations, together with necessary correlations, technical guides, and standards; and provides guidance in the preparation of regulations and standards related to criticality safety. *Availability:* Government agencies and contractors, research and educational institutions, and industry may use data produced by the Center.

Agency Contact: Criticality Data Center; Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, TN 37830; (615) 483-8611.

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Ecological Sciences Information Center (ESIC).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305; Operating Expenses / 89-0100-0-1-251.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-031

Subject Terms: Ecology; Electric Powerplants; Entrainment; Environmental Assessment; Fossil Fuels; Nuclear Energy; Thermal Pollution; Transuranics.

Purpose: Established in 1968, ESIC provides information support related to the assessment of the environmental impact of both nuclear and fossil energy. The sources and interactions of radionuclides in the environment, pathways to man, and effects in man and experimental animals are of concern. Information support is provided to the National Uranium Resource Evaluation Project with a computer-searchable file of annotated references to the geochemistry and geophysics of uranium. *Input:* The geology of selected areas within the United States is used in computer mapping procedures. The Nevada Applied Ecology Information Center compiles the data base on the Environmental Aspects of the Transuranics and provides information to the Nevada Applied Ecology Group. References and abstracts originally assembled as the basis for a comprehensive review of radionuclides in soil and uptake by plants are computer-searchable. Transport of uranium and thorium in the environment, as related to the thorium fuel cycle, are the subjects of a data base, annotated bibliography, and critical review. *Content:* Computerized information files are compiled on the environmental impact of cooling electric generating stations. Subjects related to cooling include effects of temperature, chlorine, and other chemicals, impingement, and entrainment. A predictive fish population model on the effects of power station operations is supported by a data base on the life history, biology, population dynamics, and tropic interactions of striped bass. Other data bases are built by the Center for the ORNL Environmental Sciences Division. The journal "Ecology" was searched from 1956 through 1976 for articles pertaining to ecosystem analysis, either subprocesses or total systems, and an annotated and indexed data base is being compiled. Information support is provided to the assessment of cycling of carbon in the biosphere with an extensively indexed and annotated data base. *Output:* Reviews and/or bibliographies on thermal effects of aquatic systems, effects of entrainment, and environmental aspects of the transuranics are published on a regular basis. A number of specialized bibliographies and literature overviews are also published. In-depth literature searches using computerized data bases and extensive library facilities are provided. *Availability:* Bibliographies are available from NTIS. Resources and services in the Center are available to all individuals.

Agency Contact: Ecological Sciences Information Center; Information Center Complex/Information Division, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, TN 37830; (615) 483-8611.

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Energy Research, Development, and Demonstration Inventory.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305 .

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-032

Subject Terms: Energy Research; Information Services; Inventories; Research and Development.

Purpose: The Energy Research, Development, and Demonstration Inventory was established in 1971 and is sponsored by the Energy Research and Development Administration. The Inventory is a computerized file containing descriptions of current energy-related research done or sponsored in the United States. The scope of interest includes all energy sources–fossil fuels, nuclear, and unconventional; electric power generation, transmission, distribution, and storage; energy uses and conservation–heating and cooling, lighting, appliances, industrial processes, transportation, agriculture; economic and legal aspects; and environmental and health effects. In relation to these subjects, information on exploration, mining, processing, resources and reserve studies, and basic or applied research and engineering development is of interest. *Input:* The input is from books, monographs, reports, journals, and data in the subject area. *Content:* The descriptions of energy research projects are arranged by subject categories and consist of (when available) title, research institution and city, sponsor, principal investigator(s), project duration, funding level, description of research, number of technical personnel assigned to the project, type of research (basic, applied, and/or developmental), and publications. Keywords and secondary subject categories, when needed, are also added to the project descriptions. Various statistical summary tables on funding are included in the published version of the Inventory. Statistical studies of the measurement of coverage and the representativeness of the Inventory projects are conducted and summarized in the published Inventory. *Output:* The system prepares inventories of descriptions of energy-related research and development progress. The third and latest issue (in five volumes), dated January 1976, is entitled Inventory of Energy Research and Development: 1973-1975, and is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. *Availability:* The system answers inquiries concerning information in this computer information base. Limited computer searches are performed as time allows.

Agency Contact: Information Center Complex/Information Division; Oak Ridge National Laboratory, Bldg. 3603, P. O. Box X, Oak Ridge, TN 37830; (615) 483-8611.

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Environmental Information Analysis Center (EIAC).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305; Operating Expenses / 89-0100-0-1-251.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-033

Subject Terms: Environmental Health; Information Centers; Information Services; Nuclear Powerplants; Plutonium; Powerplant Siting; Radiation Safety; Tritium.

Purpose: Sponsored by the ERDA Division of Biomedical and Environmental Research, the Battelle-Columbus Laboratories Environmental Information and Analysis Center developed a regionally oriented data system utilizing the resources of the EIAC. *Input:* The input is monographs, reports, journals, books, and data in the subject area. *Content:* Originally, the EIAC played an important role in support of the field data collection requirements for the bioenvironmental and radiological safety feasibility study for a nuclear excavated sea level canal and for support of the AEC Division of Military Applications supplementary test site bioenvironmental study on Amchitka. The cycling and transport of radionuclides in complex ecosystems has received major emphasis, with special consideration given to tritium, plutonium, and nuclear powerplant siting. The operational scope has continued to expand in support of the ERDA program for the development of a new, more comprehensive thesaurus of terms required to identify the broad environmental and technological considerations relevant to this task. *Output:* Currently, EIAC is updating the bibliography on the bioenvironmental effects associated with nuclear powerplants to identify the more recent literature collected and used as background information in the preparation of general environmental siting guides for nuclear powerplants–topics and bases. *Availability:* Requests about output availability must be made to the Center.

Agency Contact: Environmental Information Analysis Center; Battelle-Columbus Laboratories; Columbus, OH 43201; (614) 424-6424.

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Environmental Resource Center (ERC).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-251.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation.

Data Base Reference: S-06000-035

Subject Terms: Energy Research; Environmental Assessment; Environmental Health; Hazardous Substances; Information Centers; Information Services.

Purpose: Sponsored by the Energy Research and Development Administration and the National Science Foundation, Research Applied to National Needs, the Center was established in 1975. The Environmental Resource Center (ERC), Ecological and Environmental Sciences Section of the Information Center Complex, Oak Ridge National Laboratory, extends the expertise and facilities of the section to diverse user groups on both long-range projects and short term or specialized study contracts. *Input:* By adopting a matrix management system based on information system functions and subject specialization, ERC has assembled as its major resource a professional staff of scientists with practical operating experience in monograph preparation, abstracting, tabular data extraction, and computerized information retrieval and manipulation. The ability to quickly mobilize an environmental task force geared to specific tasks is accompanied by strong environmental data bases and extensive information collections ranging from commercially available large-scale disciplinary collections such as Biological Abstracts to in-house collections on environmental health and control data of emerging energy technologies. *Content:* Capabilities range broadly across the environmental damage and control spectrum from energy technologies to hazardous substances. *Output:* Many products and services are available through ERC. These include information overview monographs, abstract journals, newsletters, topical reviews, annotated bibliographies, management information systems, tabular data extraction, data base creation, directory and distribution services, and maintenance of environmental data resource file in hard-copy, microfiche, and magnetic tape form. The ERC also provides response and referral services including in-depth literature services, using computerized data bases and extensive library facilities; answering of specific environmental questions posed by the scientific community, Government agencies, industry, and others; the publication of bibliographies as natural byproducts of the response service; and technical survey activities. *Availability:* Some services are available to everyone; other are available only to funding agencies.

Agency Contact: Environmental Resource Center; Information Center Complex/Information Division, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, TN 37830; (615) 483-8611.

450

Liquid Metal Fast Breeder Reactor Fuel-Cladding Information Center (LMFBR).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305; Plant and Capital Equipment / 89-0103-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-038

Subject Terms: Cladding; Engineering; Fast Flux Test Facilities; Fuels; Information Services; Liquid Metal Fast Breeder Reactors; Nuclear Fuels.

Purpose: The LMFBR Fuel-Cladding Information Center provides nuclear engineers and scientists with a broad base of engineering data on LMFBR nuclear fuels and cladding materials. It maintains a central data source of materials performance from irradiation tests on experimental mixed-oxide fuel elements and FFTF (Fast Flux Test Facility) driver fuel elements. *Input:* In-house experimentation and data collected from outside sources comprise system input. *Content:* The system includes fuels and cladding materials data from LMFBR mixed-oxide fuel element development programs. Data for all experimental mixed-oxide fuel elements irradiated in the EBR-II (Experimental Breeder Reactor) are maintained on magnetic tape and microfilm files. These files are cladding fabrication, cladding properties, irradiation history, postirradiation examination results, and breached cladding files. The Center has data on the manufacturing of driver fuel elements for the FFTF, the fabrication of experimental mixed-oxide fuel elements, and postirradiation examination of materials. *Output:* The system provides traceability to original raw materials with data for each major fabrication step, answers inquiries, and provides data compilations. Data are available directly from the computer in the form of tables, plotted curves, and simple statistical analysis. Summaries are prepared for experimental fuel elements irradiated in the EBR-II. The files contain data only for U.S. technology. *Availability:* Persons so designated by the ERDA Division of Reactor Development and Demonstration have access to the Center.

Agency Contact: LMFBR Fuel-Cladding Information Center, Westinghouse Hanford Company; Hanford Engineering Development Laboratory, P.O. Box 1970, Richland, WA 99352; (509) 942-3284.

451

National Geothermal Information Resource (GRID).

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305; Operating Expenses / 89-0100-0-1-251.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Commerce, Science, and Transportation; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-039

Subject Terms: Environmental Assessment; Geothermal Energy; Information Services; Libraries.

Purpose: Established in 1974, the Center provides information on five major categories of geothermal science and technology–physical chemistry, exploration, utilization, environmental effects, and institutional considerations. *Input:* The input is books, monographs, journals, reports, and data in the subject area. *Content:* The Center provides information on physical chemistry, exploration, utilization, environmental effects, and institutional considerations. *Output:* Output includes publication of Compilation of Geothermal Information; data and bibliographic searches to meet the needs of geothermal scientists and engineers; and preparation of special reviews. *Availability:* Services are available to ERDA and its contractors. There is a nominal charge to other users.

Agency Contact: National Geothermal Information Resource; Lawrence Berkeley Laboratory, University of California, Berkeley, CA 94720; (415) 843-2740.

452

Nevada Applied Ecology Information Center.

OMB Funding Title/Code: Operating Expenses / 89-0100-0-1-305.

Congressional Relevance: *House* Committee on Appropriations: Interior Subcommittee; *House* Committee on Appropriations: Public Works Subcommittee; *House* Committee on Science and Technology; *Senate* Committee on Appropriations: Interior Subcommittee; *Senate* Committee on Appropriations: Public Works Subcommittee; *Senate* Committee on Energy and Natural Resources.

Data Base Reference: S-06000-041

Subject Terms: Environmental Protection; Hazardous Substances; Nuclear Testing; Plutonium; Radiation Safety; Radioactive Contamination; Radioactive Waste Disposal; Transuranics; Uranium.

Purpose: The Center is sponsored by the National Applied Ecology Group, U.S. ERDA, Nevada Operations Office. The Center was established in 1971 and concerned itself with the bioenvironmental data for the nuclear testing site, primarily, plutonium, uranium, and other transuranics, and special emphasis on distribution and movement. *Input:* Data are collected from organizations and publications throughout the world. *Content:* Studies of animals, plants, soil, resuspension, man, exposure, legal and political aspects including regulations and standards for environmental levels, safety, shipping and storage waste disposal, analysis of plutonium and other environmental materials, movement, and the fate of radionuclides in the environment "with emphasis on availability to man" are included. Governmental data on radiation dose, environmental conditions of chemical isotope, organisms used in research, route of intake, roentgen distribution, particle size, and effects are compiled. Other transuranics in the environment due to nuclear testing serve as interface in the scientific and industrial community for the collected compilation and analysis of data relevant to the scope of the Center. The Center provides information on topics within its scope. *Output:* Upon request, Center personnel consult with members of the public, industry, and the scientific community. *Availability:* Specialized bibliographic services, including verified abstract, reprint copies, and data, are available free to ERDA, its contractors, and to others with a professional interest on a cost recovery of information exchange basis. Documents relating to plutonium and other transuranics and their ecological and radiobiological significance are available.

Agency Contact: Director; Nevada Applied Ecology Information Center; Nevada Operations Office, P. O. Box 14100, Las Vegas, NV 89114; (702) 734-3194.

Appendix 4

Major Energy Legislation

To facilitate reference from the index entries, the laws listed in this appendix have been assigned consecutive accession numbers.

456

Federal Water Power Act (P.L. 66-280; 41 Stat. 1063).

This act established the Federal Power Commission (FPC). The original commissioners were from the Executive Branch and had regulatory authority over certain water power projects. In 1930, FPC became an independent regulatory agency.

457

Natural Gas Act (P.L. 75-688; 52 Stat. 821).

This act gave the Federal Power Commission (FPC) jurisdiction over companies which transported and sold natural gas in interstate commerce. Before 1954, FPC construed the Natural Gas Act as authorizing only the regulation of interstate gas sales by pipeline companies. In 1954, the Supreme Court, in Phillips Petroleum Co. v. Wisconsin, held that FPC must also regulate prices charged by gas producers to interstate pipeline companies. FPC is responsible for assuring that the nation has an adequate supply of natural gas and electric power at reasonable rates. FPC's regulatory authority is limited to the wholesale segment rates and services for resale.

458

Trans-Alaska Pipeline Authorization Act (P.L. 93-153; 87 Stat. 584).

This act directed the Secretary of Interior to issue the necessary authorizations for construction of the trans-Alaska pipeline to carry crude oil from Prudhoe Bay to Valdez. This pipeline when completed (sometime in 1977) will have an ultimate design capacity of 2 million barrels of crude oil per day.

459

Emergency Petroleum Allocation Act of 1973 (P.L. 93-159; 87 Stat. 627; 15 U.S.C. 751 et seq. (Supp. III)).

This act directed the President to temporarily impose a mandatory allocation program for oil and oil products so that shortages resulting from the Arab oil boycott would be shared by users. The legislation permitted retailers to pass on to their customers increases in the wholesale price of oil and oil products, and provided for proportional reductions of supplies to each user if the total supply of oil was less than that for a corresponding period of 1972. The mandatory allocation provisions were terminated in 1976, but the pricing allocations are still in effect.

460

Emergency Highway Energy Conservation Act (P.L. 93-239; 87 Stat. 1046; 23 U.S.C. 121 (Supp. IV)).

This legislation provided that the Secretary of Transportation should not approve any interstate or defense highway project within a state which has a maximum speed limit on any of its public highways in excess of 55 miles per hour. The statute stated that in order to conserve fuel, decrease traffic congestion during rush hours, improve air quality, and enhance the use of existing highways and parking facilities, the Secretary should approve projects designed to encourage the use of carpools in urban areas throughout the country while not adversely affecting bus and other mass transportation ridership.

461

Federal Energy Administration Act of 1974 (P.L. 93-275; 88 Stat. 94; 15 U.S.C. 761 et seq. (Supp. IV)).

This legislation created the Federal Energy Administration (FEA) as a temporary agency whose primary responsibility was to manage short-term fuel shortages using allocation and price control authorities. This act transferred to FEA several energy responsibilities previously existing in the Department of the Interior and the Cost of Living Council. FEA's authority was to expire on June 30, 1975, but was extended by the Energy Conservation and Production Act through December 1977. FEA is responsible for work in such areas as energy conservation, petroleum allocation and pricing regulations, strategic petroleum reserves, domestic energy resource development, and energy data and analysis.

462

Energy Supply and Environmental Coordination Act (P.L. 93-319; 88 Stat. 246; 15 U.S.C. 791 (Supp. IV)).

This act's main thrust was to temporarily delay certain clean air standards established under the 1970 Clean Air Act. However, it also had several major energy provisions. FEA was directed to prohibit electric utilities from burning oil or natural gas if their facilities were capable of burning coal. FEA was also given broader power to gather and publish information needed to make energy policy decisions.

463

The Solar Heating and Cooling Demonstration Act of 1974 (P.L. 93-409; 88 Stat. 1069; 42 U.S.C. 5517 (Supp. IV)).

The solar heating act authorized the appropriation of $60 million over a 5-year period to develop solar heating and cooling systems for buildings.

464

Geothermal Energy Research, Development, and Demonstration Act of 1974 (P.L. 93-410; 88 Stat. 1079; 30 U.S.C. 1162 (Supp. IV)).

The geothermal act authorized $50 million to guarantee loans for the acquisition and development of geothermal resources.

465

Energy Reorganization Act of 1974 (P.L. 93-438; 88 Stat. 1233; 42 U.S.C. 5081 (Supp. IV)).

This statute abolished the Atomic Energy Commission (AEC) and transferred its functions to two new agencies–the Energy Research and Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC). The purpose of the reorganization was to separate nuclear regulatory and safety programs from nuclear development and promotional programs. The act also moved to centralize all Federal energy research and development (R and D) activities by transferring to ERDA several energy R and D programs from the Department of the Interior, the Environmental Protection Agency, and the National Science Foundation. This act gave NRC responsibility for licensing and regulating the commercial nuclear energy industry. NRC must also ensure that the public health, safety and environment are protected.

466

Solar Energy Research Development and Demonstration Act of 1974 (P.L. 93-473; 88 Stat. 1431; 42 U.S.C. 5551 et seq. (Supp. IV)).

The solar energy bill authorized $75 million for solar energy research.

467

Federal Non-Nuclear Energy Research and Development Act of 1974 (P.L. 93-577; 88 Stat. 1878; 42 U.S.C. 5901 et seq. (Supp. IV)).

This act established a 10-year $20 billion program of research and development (R and D) in nonnuclear energy sources. It established broad policy guidelines for carrying out nonnuclear R and D to go along with the nuclear energy policy established by the Atomic Energy Act of 1954. Most energy R and D programs were assigned to the Energy Research and Development Administration (ERDA).

468

Energy Policy and Conservation Act (P.L. 94-163; 89 Stat. 871; 42 U.S.C. 6201).

This act established a number of new energy programs, mainly in the conservation area. Among the more significant provisions of the act are the following: (1) establishment of a strategic petroleum reserve, (2) establishment of mandatory automobile efficiency standards, (3) continuation of crude oil price controls through May 1979, and (4) establishment of a $750 million loan guarantee program to develop new underground coal mines. In addition, title V of the act authorized GAO to independently verify energy data, and stated that GAO may use its authority to inspect the books and records of private persons and companies under the following conditions: (1) if a company is legally required to submit energy information to the Federal Energy Administration and the Federal Power Commission, or the Department of the Interior; (2) if a company is engaged in the energy business, other than at the retail level, and (a) furnishes energy information directly or indirectly to any Federal agency, excluding the Internal Revenue Service, and (b) GAO determines that the Federal agency uses this information in carrying out its official functions; and (3) if the energy information is any financial information pertaining to a vertically integrated petroleum company. In carrying out our responsibilities under title V of the Act, the Comptroller General is authorized to: (1) sign and issue subpoenas, (2) require any person to reply to interrogatories, (3) administer oaths, and (4) assess and collect civil penalties not to exceed $10,000 for each violation.

469

Coastal Zone Management Act Amendments of 1976 (P.L. 94-370; 90 Stat. 1013).

This act provided coastal states with funds to cope with the onshore impact of offshore oil and gas exploration and production activities. It created a 10-year $1.2 billion coastal energy impact program, dispensing loans and loan guarantees to States and localities to build additional public facilities needed because of the impact of offshore development.

470

Federal Coal Leasing Amendments Act of 1975 (P.L. 94-377; 90 Stat. 1083).

The act established new policies for leasing coal on Federal lands. It required the Department of the Interior to develop comprehensive land-use plans before the sale of any leases and required coal operators to submit detailed mining and reclamation plans within 3 years of the issuance of the lease. Other major features of the act provided: (1) an increase in the royalty rate from 5 cents per ton to 12-1/2 percent of the value of coal; (2) a requirement that production be started within 10 years; (3) a mechanism for State governors to block surface coal mining leases for 6 months in case problems arise; and (4) a requirement that Interior conduct a comprehensive survey of coal resources on Federal lands.

471

Energy Conservation and Production Act (P.L. 94-385; 90 Stat. 1125; 42 U.S.C. 6801).

This act was originally introduced to extend the life of FEA past its June 30, 1976 expiration date. The act, as passed, not only extends FEA's existence through 1977, but also contains a number of conservation provisions, among them programs to improve energy efficiency in commercial and residential buildings, assist in insulating housing of low-income persons, and improve electric utility rate designs. On the supply side, the act exempts from price controls oil from stripper wells (producing less than 10 barrels a day), and oil from wells using tertiary production techniques. The act also established an Office of Energy Information and Analysis in FEA to coordinate all Federal energy data collection and analysis activities.

472

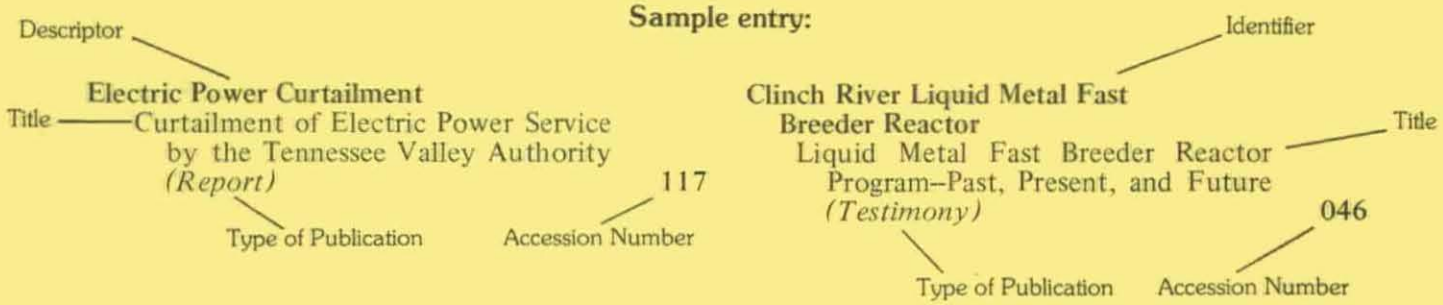
Emergency Natural Gas Act of 1977 (P.L. 95-2; 91 Stat. 5; 15 U.S.C. 717 (a)(w)).

This act permitted the President to declare a natural gas emergency when he found that natural gas supplies are endangered for residential, small commercial, and certain other users. During such an emergency, the President may require: (1) any interstate pipeline or local distribution company to deliver to any other interstate pipeline or local distribution company, and (2) the construction and operation by any pipeline of any facilities necessary to effect such deliveries. No such delivery or transportation may continue after April 30, 1977.

SUBJECT INDEX

Includes entries under both Descriptors (representing subject matter)and Identifiers (representing proper names) dealt with in the document, in one alphabetic sequence.

Sample entry:



Energy Consumption

Energy Conversion

Energy Demand

Energy Policy Project

Energy Prices

Energy Programs

Energy Recovery from Waste

Energy Research

Natural Gas Curtailments

Natural Gas Demand

Natural Gas Distribution

Natural Gas Liquids (NGL)

Natural Gas Pipelines

Natural Gas Prices

Natural Gas Production

Natural Gas Reserves

Natural Gas Sales

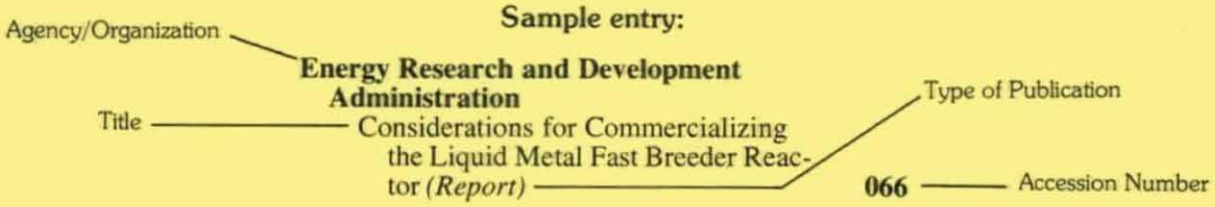
Natural Gas Shortages

Natural Gas Storage

Natural Resources

AGENCY/ORGANIZATION INDEX

Includes both Federal agencies and nongovernmental corporate bodies with which the document is concerned, in one alphabetic sequence.



LAW/AUTHORITY INDEX

Includes entries under the law, or other statutory or nonstatutory authority, referenced in the citations and appendices. Entries are grouped under the following headings:

Law Names
Law Numbers
U.S. Code
Miscellaneous Authorities
U.S. Statutes-at-Large

Sample entry:

Law/Authority — **Coastal Zone Management Act of 1972, as amended**

Title — The Coastal Zone Management Program: An Uncertain Future *(Report)* — Type of Publication

187 — Accession Number

Law Name

Law Number

U.S. Code

U.S. Statutes

Miscellaneous Authorities

CONGRESSIONAL INDEX

Includes entries under relevant congressional bodies and individual Representatives and Senators to whom documents are addressed. Entries are grouped under the following headings:

Congress (as a whole)	Senate	Congressional Agencies
House of Representatives	Joint Committees	Members (Individual)

Sample entry:

Congressional Recipient — **Senate Committee on Government Operations**

Type of Publication — *(Report)*

U.S. Nuclear Non-Proliferation Policy — Title

248 — Accession Number

Congress

House of Representatives

House of Representatives

Clerk of the House

Speaker of the House

House Committees

House Committee on Agriculture

House Committee on Appropriations

HUD Independent Agencies Subcommittee

Interior Subcommittee

Public Works Subcommittee

House Committee on Armed Services

House Committee on Banking, Currency and Housing

Economic Stabilization Subcommittee

House Committee on Banking, Finance and Urban Affairs

Mines and Mining Subcommittee

House Committee on International Relations

Europe and the Middle East Subcommittee

House Committee on Interstate and Foreign Commerce

Energy and Power Subcommittee

Oversight and Investigations Subcommittee

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Senate Committee on Government Operations

Reports, Accounting and Management Subcommittee

Senate Committee on Interior and Insular Affairs

Minerals, Materials and Fuels Subcommittee

Senate Committee on Public Works

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Administrative Practice and Procedure Subcommittee

Joint Committees

Joint Committee on Atomic Energy

Members

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