UNITED STATES
GENERAL ACCOUNTING OFFICE

REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES

Electrical And Hospital Rates Charged By The Panama Canal Company And The Canal Zone Government

Allocating general corporate expenses to the electrical power rates charged other U.S. Government agencies in the Canal Zone is proper. But such rates should be determined on the basis of pooling the cost of generating hydroelectric and thermalelectric power.

Adjustments should be made in hospital rate billings to other U.S. Government agencies to insure full recovery of costs as required by law. GAO belives that the U.S. Government agencies' extensive absorption of civilian employees' hospital cost is unwarranted. All patients concerned are eligible for Government-sponsored health insurance.

FOD-76-14

JUNE 17, 1976

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

B-114839

The Honorable
The Secretary of the Army

Dear Mr. Secretary:

This report summarizes the results of our study of the electrical and hospital service rates charged by the Panama Canal Company and the Canal Zone Government.

We are sending copies of this report to the Director, Office of Management and Budget; Chairmen of the House and Senate Committees on Government Operations and Appropriations; Chairman of the Subcommittee on Panama Canal, House Committee on Merchant Marine and Fisheries; Governor of the Canal Zone/President of the Panama Canal Company; and Commander in Chief of the U.S. Southern Command, Canal Zone.

We would appreciate your comments on the matters discussed in this report.

Sincerely yours,

Elmer B. Staats

Comptroller General
of the United States

Contents

ABBREVIATIONS

GAO General Accounting Office

kwh kilowatthour

OMB Office of Management and Budget

TVA Tennessee Valley Authority

COMPTROLLER GENERAL'S REPORT TO THE SECRETARY OF THE ARMY

ELECTRICAL AND HOSPITAL RATES CHARGED BY THE PANAMA CANAL COMPANY AND THE CANAL ZONE GOVERNMENT

D I G E S T

ELECTRIC POWER RATES

The electric power system in the Canal Zone is operated by the Panama Canal Company. The Company charges three sets of rates for electric power furnished the various Canal organization components and employees and other U.S. Government agencies.

--Commercial rates apply to the military components (Army, Air Force, and Navy), various other U.S. Government agencies (Federal Aviation Administration, Federal Highway Administration, Smithsonian Tropical Research Institute), and private enterprise activities (such as banks, shipping agents, contractors) in the Canal Zone.

--Intra-agency rates apply to components of the Canal organization.

--Residential electric power rates apply principally to Canal organization employees assigned to Canal Zone housing.

Appendixes III thru XI show the procedures used to set electrical power rates for fiscal year 1976.

The commercial rates are higher than intra-agency rates due to two factors. First, commercial rates include direct cost plus a markup (22 percent in fiscal year 1976) to cover a share of the Company's general corporate expenses, whereas the intra-agency rates do not include a markup for the general corporate expenses. Second, the Company reserves for the Canal organization the low cost of hydroelectric power, which means the commercial rates are based mainly on more costly thermalelectric power. GAO concluded that the allocation of general corporate expenses to the commercial rates is proper both from a legal and prudent business standpoint. (See pp. 4 to 6.)

The Congress has indicated that the Company should operate the Canal Zone power system for all U.S. Government agencies to avoid duplicating facilities. (See pp. 11 to 12.) GAO therefore believes the rates for the Canal organization and all other U.S. Government agencies in the Canal Zone should be set on the basis of pooling the cost of generating hydroelectric and thermalelectric power. (See p. 13.)

Since 1962, according to Company officials, residential electrical rates have been structured so they are comparable to Tennessee Valley Authority residential rates. The Company believes this method fully complies with the intent of the applicable Office of Management and Budget instructions. However, since the geographical area used to establish comparable residential electrical rates in the Canal Zone is not the same area used to establish comparable housing rental rates, GAO believes the Company should obtain clarification from the Office of Management and Budget as to whether TVA rates are the appropriate basis for establishing the Company's residential electrical rates. (See pp. 13 and 14.)

The title to a 33-megawatt, U.S. Army-financed powerplant in the Canal Zone has not been transferred to the Company as intended by the Congress because the powerplant has developed certain defects. Provided such a transfer would not affect or relieve the Army of its rights of recovery or responsibility to try to recover damages form the plant manufacturers, GAO believes the Company should initiate action to have the title of the powerplant transferred to the Company. (See p. 15.)

HOSPITAL RATES

The Canal Zone Government operates the hospitals in the Canal Zone. Contrary to public law, the hospital service rates (reimbursable rates) charged other U.S. Government agencies frequently have not been adequate to recover full hospital costs. The Canal Zone Government should therefore recover such deficits in the future either through yearend billings or adjustments in the billings for the following year. On the other hand, GAO believes the

Canal Zone Government should give credit to the other U.S. Government agencies in those cases where the reimbursable rates result in an overrecovery of costs. (See p. 22.)

Regarding hospital rates (employee rates) charged Government civilian employees and their dependents, all U.S. Government agencies in the Canal Zone--the Canal organization, the U.S. military services, and other U.S. Government agencies--have been absorbing a large part of the hospital costs for civilian employees and their dependents. For the Canal Zone's two general hospitals, the costs absorbed for inpatient care alone during fiscal year 1975 were about $2.3 million, almost 50 percent of the cost of services provided to the patients. In GAO's opinion, such extensive absorption is unwarranted, given the fact that all the patients concerned are eligible for Government-sponsored health insurance. (See pp. 19 and 20.) GAO recommends that the Governor of the Canal Zone:

--Change the hospital employee rate policy to require such rates to be set at the lower of (1) actual cost of the services provided or (2) amounts comparable to the average rates in U.S. hospitals similar in size and type to those in the Canal Zone. To accomplish this policy, the Canal Zone hospitals must use some form of cost-finding concepts and departmental revenue and expense accounting. (See p. 22.)

--Revise some of the Canal Zone hospitals' general rates, particularly for laboratory services, to make the rates more specific for individual services. (See p. 22.)

Except for the point on whether TVA residential electric rates are the appropriate basis for establishing the Company's residential electric rates, the Canal organization generally agreed with GAO's conclusions and recommendations. (See app. XV.)

CHAPTER 1

INTRODUCTION

1 Rates and rate-making policies in the Canal Zone are 356
determined by the nature of the Canal organization. 1/ The
2 Panama Canal Company--known as the Panama Railroad Company 318
until it was renamed in 1951 by the September 26, 1950, Act (64 Stat. 1038)--is a wholly owned U.S. Government corporation responsible for operating and maintaining the Canal and its supporting facilities, which include the electric power system. The act also redesignated the Panama Canal (the agency) as the Canal Zone Government, an independent U.S. agency responsible for providing services associated with civil government and community service organizations, including health care.

One purpose of the 1950 reorganization act was to make the Canal organization self-supporting. The Company was expected to reimburse other U.S. Government agencies, including U.S. military components, for goods and services from them and vice versa. A later act, the Civil Functions Appropriation Act, 1955, required all U.S. Government agencies, including U.S. military components, to fully reimburse the Canal Zone Government for its cost in furnishing hospital and medical care to their employees and dependents.

The Company operates under the direction of a Board of Directors appointed by the Secretary of the Army in his independent capacity as stockholder and representative of the President of the United States. The Canal Zone Government is administered by the Governor of the Canal Zone under the supervision of the Secretary of the Army. The Governor of the Canal Zone, who is appointed by the President of the United States, is also president and a director of the Company (ex officio). The Secretary of the Army's responsibilities for the Canal Zone Government are also in an independent capacity from the Secretary's duties as head of
3 the Department of the Army. 20

P. 24 In common usage there is a clear distinction between "rates" and "rate-making policies." Before 1953, deriving his authority from various statutes, executive orders, and corporate bylaws, the Governor-President established rate-making policies and set rates. Effective July 1953, the Board of Directors amended the bylaws so that they had the

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1/"Canal organization" is used throughout the report to refer to the Panama Canal Company and the Canal Zone Government.

authority to establish rate-making policies for the Company; the Governor-President retained the authority to establish rate-making policies for the government and to establish all rates for both the Company and the government within the framework of those policies. In practice, the Company's Financial Vice-President has the responsibility to develop and recommend (1) ratemaking policies to the Board and the Governor for adoption and (2) rates to the Governor-President for appproval.

Electric power and hospital services rates have been a subject of longstanding disagreement and misunderstanding between the Canal organization and the U.S. military components. In a June 18, 1975, letter, the Secretary of the Army commented that components and employees of the Canal organization paid less for electricity and hospital services than did the U.S. Armed Forces and that this disparity has created a management problem requiring resolution. (See app. I.) Other aspects or elements of these rates disagreeable to the U.S. military components were brought out through discussions with military representatives in the Canal Zone and by reviewing correspondence between Canal organization and military officials. We have briefly summarized objections raised by the military in chapters 3 and 4. However, we did not limit our review to these specific objections.

One rate element subject to continuing disagreement is what the Canal organization calls general expense recovery factors. These are percentage markups of direct costs and are used by the organization to set rates for services provided the U.S. military, other U.S. Government agencies, and private businesses in the Canal Zone. Two factors are involved--one is used to recover part of the Company's general corporate expenses; the other is used to recover part of the basic general overhead costs of the Canal Zone Government. Since the factors affect electric power as well as hospital service rates, we have discussed the general recovery factors as a separate chapter.

CHAPTER 2

GENERAL RECOVERY FACTORS

For services furnished the U.S. military, other U.S. Government agencies, and private businesses, the Canal organization sets rates designed to recover direct costs and part of its general or indirect costs. Rates which include a provision for recovering general expenses have been a subject of substantial disagreement between the Canal organization and various military components in the Canal Zone. The U.S. Army, the largest U.S. military component, has been particularly critical of the rate structure, contending that the military services should be treated as internal customers and be charged the same rates as Canal organization components.

DISCUSSION

The Company, under section 66(a)(5), title 2 of the Canal Zone Code, may furnish services to U.S. Government agencies. In furnishing electric power to U.S. Government agencies, the Company sets rates designed to recover its direct costs and part of its indirect or general corporate expenses. Classification of these expenses follows.

General corporate expenses	FY 1975 amounts
	(millions)
General and administrative expenses	$41.1
Interest on the U.S. Government's net direct investment in the Company	14.8
Net cost of the Canal Zone Government	23.5
Total	$79.4

Although most of the general corporate expenses are allocated to the account of tolls, a portion is passed on in rates for services provided to U.S. military components, other U.S. Government agencies, and private businesses.

The Canal Zone Government, under 2 C.Z.C. section 31, is responsible for various duties connected with health and sanitation in the Canal Zone. In providing hospital services to the U.S. military and other U.S. Government agencies, the government attempts to recover direct costs and a share of its general government overhead expenses. Canal organization officials consider the general government expenses associated with services furnished by the government to consist of the following cost elements.

General government expenses	FY 1975 amounts (millions)
General expenses of the Canal Zone Government	$ 4.9
Office of the Civil Affairs Director	0.34
Office of the Health Director	0.34
A share of the government's net cost relating to government employees	5.7
Administrative support furnished to the government by the Company	4.7
Total	$15.98

All funds appropriated to the government for operating expenses and capital outlay are returned to the U.S. Treasury through deposit of user charges and/or reimbursement by the Company.

FINDINGS AND CONCLUSIONS

It is legal and prudent business practice for the Canal organization to recover some general expenses through rates for services provided to the U.S. Armed Forces and others. The legislative history of the September 26, 1950, Act, Public Law 81-841 (see p. 1), makes it clear that sales or services by the Company to U.S. Government agencies should be at prices to cover direct costs and indirect costs proportionately allocable to such services (Comptroller General's Decision, B-116194, Oct. 5, 1953).

What portion of the indirect costs is properly allocable to given services is another question, one which centers around section 412(b) of title 2 of the Canal Zone Code. This section provides the formula the Company must use in computing new tolls:

> "Tolls shall be prescribed at a rate or rates calculated to cover as nearly as practicable, all costs of maintaining and operating the Panama Canal, together with the facilities and appurtenances related thereto, including interest and depreciation, and an appropriate share of the net costs of operation of the agency known as the Canal Zone Government. In the determination of such appropriate

share, substantial weight shall be given to the ratio of the estimated gross revenues from tolls to the estimated total gross revenues of the said corporation exclusive of the cost of commodities resold, and exclusive of revenues arising from transactions within the said corporation or from transactions with the Canal Zone Government."

Exactly what is intended by the term "substantial weight" has never been clearly established. The facilities and appurtenances referred to include docks; harbor terminals; oil handling plants; dry and cold storage plants; retail stores; housing for employees; and electric power, water, and telephone systems. These operations have been characterized by the Supreme Court and congressional committees as auxiliary or supporting activities to aid in managing and operating the Canal. The Company, then, besides carrying out its major mission of transiting ships (i.e., canal activity), also performs a number of auxiliary functions (i.e., support activities). Our position in the early 1950s was that section 412(b) treated the Canal activity and the support activities separately, thereby requiring a fixed share of general corporate expenses to be allocated to the support activities. However, the Supreme Court, in an April 28, 1958, decision (Panama Canal Company v. Grace Line, Inc., et al, 356 U.S. 309), stated that the proper method of allocating general corporate expenses between the Canal activity and the support activities was a matter of agency discretion.

In excersing this discretion in deciding what portion of its general expenses to allocate to support activities (and hence to services such as electricity provided to the U.S. military and other external customers), the Canal organization compares its general overhead expenses to direct operating expenses (i.e., total operating expenses less general overhead expenses) and computes a percentage factor. For example, in fiscal year 1975, general corporate expenses equaled approximately 40 percent of the Company's direct operating expenses, and general government expenses equaled about 26 percent of the government's direct operating expenses.

Both percentages were used as guidelines only. For instance, in setting fiscal year 1976 rates for electric power furnished to the military and other U.S. Government agencies, the Company marked up its budgeted direct expenses by 22 percent--not 40 percent. Similarly, for hospital services, the government marked up its budgeted direct expenses by 15 percent--not 26 percent.

In practice, moreover, the actual percentage recoveries will vary from those used in the rate formulas because the rates are set prospectively on the basis of budgeted costs and estimated workloads. As a case in point, for fiscal year 1975, electric power rates charged the U.S. military components returned 5 percent--not 22 percent--for recovery of general corporate expenses. Hospital rates charged Federal agencies for inpatient services returned only 8 percent--not 15 percent--toward recovery of general government expenses.

The 40 and 26 percent guidelines are difficult to explain to third parties and to independently verify. Some cost elements in the percentages represent individual line items in the Canal organization's accounting records, but others represent allocations of certain overhead expenses from the Company to the government and vice versa. These allocations are based upon management judgment and do not lend themselves to independent verification.

In any event, we feel full verification of the 40 and 26 percent figures is not necessary insofar as fiscal year 1976 rates are concerned, because, as already stated, 22 and 25 percent, respectively, were used to set rates for electric power and hospital services. Also, both of the percentages used to set rates are less than the Company/government's combined or composite overhead factor, which is about 36 percent. This composite percentage was computed without allocating overhead expenses between the Company and the government and, thus, more readily lends itself to independent verification and presentation to third parties.

In the interest of simplicity, Canal organization officials would like to establish one general recovery percentage for the entire Canal organization rather than continue with separate percentage factors for the Company and the government. Canal organization officials are considering a single recovery factor of 26 percent. Since the Canal organization is experiencing a composite overhead factor of about 36 percent, we believe a 26 percent markup is not an excessive percentage to use for allocating overhead expenses in determining rates.

CHAPTER 3
CANAL ZONE ELECTRIC POWER RATES

Certain U.S. military officials in the Canal Zone are concerned that the U.S. Army procures electricity from the Panama Canal Company at rates higher than those the Company charges its own components. Also, the U.S. Army believes it is not receiving any benefit from a 33-megawatt 1/ powerplant in the Canal Zone, construction of which was financed by appropriated funds obtained by the Department of the Army.

DISCUSSION

The Company's Power Branch operates and maintains generating stations, transmission lines, substations, and distribution systems to furnish electric power throughout the Canal Zone. Power is generated by the Company's hydroelectric stations located at Gatun and Madden Dams and by thermal-electric generation stations at Mount Hope and Miraflores. To augment the system's generating capacity, the Company purchases power from (1) the Surgis, a U.S. Army-owned nuclear floating powerplant; (2) the Weber, an Army-owned power barge; and (3) the Instituto de Recursos Hidraulicos y Electrificacion, Panama's electric power agency.

FINDINGS AND CONCLUSIONS

For fiscal year 1975, the Power Branch had an income of $18.0 million and direct expenses (i.e., not including any general corporate expenses) of $20.2 million, leaving unrecovered costs of $2.2 million.

1/A megawatt equals one thousand kilowatts.

		Amount (millions)
Total expenses		$20.2
Cost transfers and revenue:		
Water conservation (see p. 34, note b)	$3.1	
Locks standby charge (see p. 34, note b)	.1	
Power used by Canal organization intra-agency components	3.0	
Total costs transferred to Canal organization components and activities		-6.2
Power sold to U.S. military and other Federal agencies	9.5	
Power sold to Canal organization employees' housing	1.9	
Power sold to others	.4	-11.8
Operating loss		$ 2.2

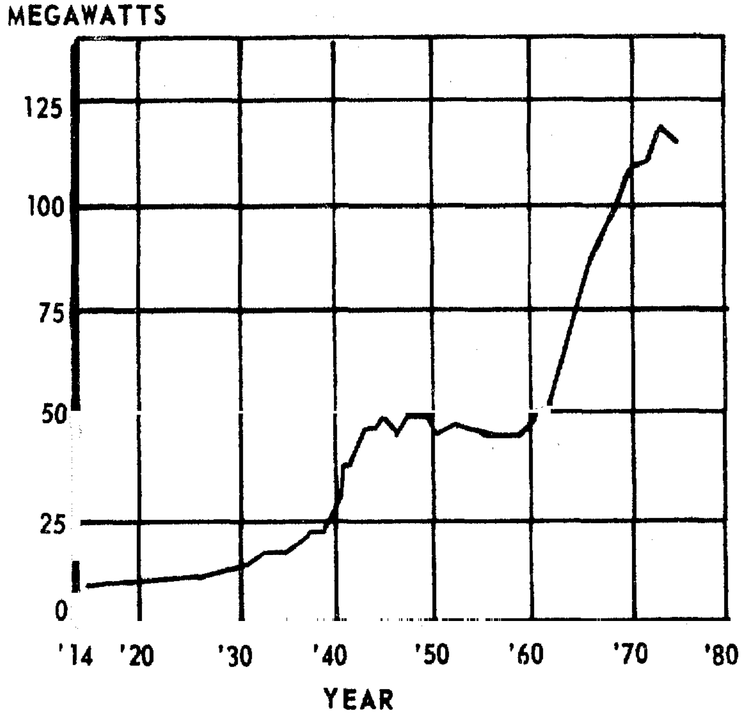
The principal users of electricity in the Canal Zone are the U.S. military components and the Canal organization's operating divisions and employees' housing. Electric power rates for all users are set by the Canal organization's Governor-President and fall into three categories--commercial, intra-agency, and employee rates.

Commercial electric power rates

The U.S. military components (Army, Air Force, and Navy), various other U.S. Government agencies (Federal Aviation Administration, Federal Highway Administration, and the Smithsonian Tropical Research Institute), and private enterprise activities (banks, shipping agents, contractors, etc.) in the Canal Zone are charged commercial rates. Appendix IIA shows Canal organization electric power rates for commercial customers for fiscal years 1953-76. The commercial rates remained unchanged from October 1952 to July 1964. During that period, hyroelectric generation met most of the demand for electricity, and commercial rates were about comparable to rates used within the Canal organization (i.e., intra-agency rates). From 1964 to 1974, the commercial rates increased gradually, but in July 1974, they increased about 60 percent, mainly because of higher fuel costs.

The commercial rate pattern reflects the power system's peak loads over the years. As the following graph illustrates, peak electrical demand increased dramatically during the early 1940s, leveled off during the 1950s, and then once more increased significantly during the 1960s.

ANNUAL PEAK LOADS OF THE CANAL ORGANIZATIONS POWER SYSTEM, 1914-75



Consumption of electricity in the Canal Zône started to increase in 1960 as a result of an almost complete conversion of the power system from 25 to 60 cycles. Before conversion, air-conditioning in residences and public buildings was almost unknown, and use of heavy-duty appliances was limited. Following conversion, which permitted use of standard 60-cycle equipment, electrical power consumption increased rapidly--the peak electrical demand for 1964 was almost 50 percent higher than in 1960 and the 1969 peak was 45 percent higher than the 1964 peak. It was during this period, specifically 1968, that the Canal organization first arranged to purchase power from the U.S. Army Corps of Engineers' floating powerplants Sturgis and Weber. Also, in about the same time-frame, the Department of the Army succeeded in getting funds for the 33-megawatt powerplant now operating within the Canal organization's power complex at Miraflores Locks.

It is true that the U.S. Army procures electricity from the Canal organization at rates higher than those the Canal organization charges its own activities because commercial rates include a factor for recovering general corporate expenses, whereas the Canal organization's intra-agency rates do not. (See p. 12.) A second reason that the Army is paying more for electricity is that the Canal organization reserves for itself most of the low cost hydroelectric power, which means the rates charged commercial customers are based mainly on more costly thermal-electric power.

The Canal organization, in explaining why it has priority in terms of hydroelectric power costs, cites 2 C.Z.C., section 412(b):

> "Tolls shall be prescribed at rates to cover as nearly as practicable all costs of maintaining and operating the Panama Canal, together with the facilities and appurtenances related thereto, including interest and depreciation, and an appropriate share of the net cost of operation of the agency known as the Canal Zone Government."

On the basis of this subsection, the Canal organization states that only those costs related to maintaining and operating the Canal shall be borne by shipping interests; all other costs must be borne in full by those in whose interest the service is rendered. In relating this policy to electric power rates, the Canal organization contends that (1) its own demand for electricity has remained fairly constant, while that of the U.S. military has risen steadily over the years and (2) the costs of plant additions--thermal generation facilities--should be passed on to outside users.

The Canal organization's contention regarding its relatively steady demand for electricity does not appear well founded. In fact, since 1960 the Canal organization's use of electric power has increased almost as much as the U.S. military's.

	Kilowatt-hours (kwh) of electric power consumed		Percent of increase since 1960
	1960	1975	
	(millions)		
Canal organization (intra-agency components and employees' housing)	117.2	287.5	145
U.S. military components	117.1	303.8	159

This raises a question as to whether power facilities and additions serve the Canal organization and other U.S.

Government activities equally. If so, it may be improper for the Canal organization to reserve hydroelectric power for itself. In setting rates, then, for the Canal organization and all other U.S. Government agencies, perhaps the power system's total costs (hydroelectric and thermal) should be averaged or pooled, after deducting expenses incurred primarily for the benefit of shipping interests.

Pooled costs could possibly result in savings for U.S. military components in the Canal Zone. The Company estimates that had electric power costs been averaged on a pooled basis when fiscal year 1975 power rates were set, savings to the military would have been about $925,000 for that year--even with a full 22-percent markup for recovery of general corporate expenses.

Of course, if pooled or averaged costs result in lower rates to the U.S. military and other U.S. Government agencies, the Canal organization's operating expenses would be increased by the amount of the reduction in recoveries. Part of these increased operating expenses would be passed on to the U.S. military and other Federal agencies in rates for various other electricity-using facilities, such as hospitals and schools, furnished by the Canal organization. The $925,000 savings estimate does not reflect these offsetting factors and we did not attempt to quantify them.

Support for using a pooled costs base can be inferred from the rate policy for Canal Zone hospitals. To eliminate duplication of facilities, the Congress, in the Civil Functions Appropriation Act, 1955, stated that no appropriation or fund available to the Department of Defense was to be used after September 1, 1954, for maintaining and operating hospitals in the Canal Zone. As a result, the U.S. Army hospital at Fort Clayton was closed and the U.S. Navy hospital at Coco Solo was transferred to the Canal Zone Government without exchange of funds. However, even though the Canal organization now operates all general hospitals in the Canal Zone, it does not reserve any special category of costs for itself. Instead, the total costs of both hospitals are pooled to establish the reimbursable rates charged the U.S. military and other U.S. Government agencies. (See ch. 4.)

Support for using a pooled costs base can be inferred also from 2 C.Z.C., section 372, which states:

> "In the interest of economy and maximum efficiency in the utilization of Government property and facities, there are authorized to be transferred between departments and agencies, with or without

> exchange of funds, all or so much of the facilities, buildings, structures, improvements, stock and equipment, of their activities located in Canal Zone, as may be mutually agreed upon by the departments and agencies involved and approved by the Director of the Bureau of the Budget."

Pursuant to this section and the expressed desire of the Senate Appropriations Committee (see p. 14), the 33-megawatt powerplant, financed by appropriations made to the Department of the Army, is to be transferred to the Company. From this standpoint, except for certain expenses incurred primarily for the benefit of shipping interests, it seems that the power system is intended to serve the Canal organization and other U.S. Government activities equally and that this intent should be reflected in the rate structure.

The commercial electricity rates (i.e., rates charged the military, other U.S. Government agencies, and private sector businesses) in effect during our review (fiscal year 1976 rates) were set by the Company to cover direct costs of providing the service, plus 22 percent to cover general corporate expenses. The computation process used by the Company for establishing these and other electric utility rates is shown in appendixes III through XI. The process consists essentially of calculating the rate per kWh necessary to recover budgeted or estimated expenses. (See app. IV.) In determining the amount of costs to be recovered, the overall direct costs of operating the power system are first reduced by expenses incurred primarily for the benefit of canal transit operations, such as water conservation and locks standby charges. (See app. VI, note b.) The remaining direct costs are divided between the Canal organization and outside customers on a cost-to-serve or energy usage basis applied to the various expense classifications--hydroelectric and thermalelectric expenses; transmission, distribution, and dispatching expenses; and supervision and general costs. (See app. VII.) As discussed earlier, thermal-electric generation costs are considerably higher than hydroelectric costs, mainly because of fuel costs. (See app. VIII.)

<u>Canal organization intra-agency electric power rates</u>

Intra-agency electric power rates apply to Canal organization components. The rates for fiscal years 1953-76 are shown in appendix IIB. We are limiting discussion here on these rates because (1) they relate principally to cost transfers within the Canal organization and (2) the preceding section compares intra-agency rates with commercial rates. As mentioned previously, intra-agency rates do not include a factor for recovering general corporate expenses. This aspect of intra-agency rates has no effect, however, on the amount of general corporate expenses used in setting commercial rates.

Residential electric power rates

Residential electric power rates apply to Canal organization employees and to employees of social, welfare, religious, fraternal, and other nonprofit employee service organizations within Canal Zone communities. The rates for fiscal years 1953-76 are shown in appendix IIC. According to Canal organization officials, since 1962 power rates charged employees have been structured so they are comparable to Tennessee Valley Authority (TVA) residential rates. Canal Zone residential electricity rates have frequently lagged behind TVA rates. However, since July 1975, the Company has achieved a comparability with TVA on their base rates exclusive of recently established surcharges for increased fuel expenses. At the completion of our study the Company was initiating action to achieve comparability for the increased fuel surcharge.

Furthermore, some doubt exists as to whether TVA rates are the appropriate basis for establishing employee rates. The applicable authority is Office of Management and Buget (OMB) Circular No. A-45, which establishes Federal policy governing charges for rental quarters and related facilities, such as electricity. Paragraph 8 of the circular states that electrical rates will be alined with domestic rates for similar services in the locality used for housing comparison. The community presently used to establish rental rates for Canal organization housing is Mayaguez, Puerto Rico. One can infer from the OMB circular that electric power rates charged to Canal organization employees should be based on Mayaguez utility rates, not TVA rates.

RECOMMENDATIONS TO THE PRESIDENT, PANAMA CANAL COMPANY

The Congress has indicated its desire that the Canal organization operate the Canal Zone's power system for all U.S. Government agencies to avoid duplication of facilities. For this reason, we recommend that the electrical rates for the Canal organization, the U.S. military, and other U.S. Government agencies be set on the basis of pooling the cost of generating hydroelectric and thermalelectric power. As for residential rates, we recommend that specific clarification be obtained from OMB as to whether TVA rates are the appropriate basis for establishing such rates. This latter recommendation will also affect U.S. military civilian employees occupying military family housing because, since October 1975, rates charged these individuals have been based on Canal organization employee rates to insure uniformity among all U.S. Government agencies in the Canal Zone.

ARMY-FINANCED POWERPLANT

Construction of a 33-megawatt powerplant located at Miraflores Locks was financed by U.S. Army construction appropriations. The powerplant, which cost about $8 million, went online in October 1971 and is being operated by the Company as an integral part of the Canal Zone power system. The plant was financed by appropriations made available to the Department of the Army reportedly because other demands on the Company's financial resources had priority at the time construction was required.

In 1970 the Senate Appropriations Committee reported (Senate report 91-1118, 91st Cong., 2d sess., pp. 39-40):

> "Legislation enacted by the Congress soon after reorganization of the Panama Canal Company provides for transfers of property to the Panama Canal Company by other Government agencies in the interest of economy and maximum efficiency in the use of Government property and facilities. The committee considers that such a transfer of the Army powerplant to the Panama Canal Company should be effected under this legislation on a reimbursable basis."

However, even though the Company has been operating the plant since October 1971, title has not been passed because exceptions taken during prefinal inspection in 1971 and subsequent failures of a superheater tube have to be resolved. In a letter, dated August 29, 1975, the Mobile District Engineer, U.S. Army Corps of Engineers, notified the manufacturer that the Corps intended to issue a contracting officer's decision that the superheater tube failure resulted from a latent defect; under such a determination the manufacturer will be held monetarily responsible for repair costs and consequential damages.

The Panama Canal Company is not required to pay interest to the U.S. Treasury for transfers of real property made on a reimbursable basis, since the value of the property is not added to the U.S. Government's interest-bearing investment in the Company. Also, since the Company does not have title to the powerplant, it does not record depreciation on the plant. Instead, since November 1971, the Company has been charging operating expenses for use of the plant by accruing a monthly liability of $25,000 to the U.S. Government. When title passes, the accrued amounts plus any additional amounts required to equal the value or purchase price of the plant should be returned to the U.S. Treasury as miscellaneous receipts.

RECOMMENDATION TO THE PRESIDENT, PANAMA CANAL COMPANY

We recommend that the Company initiate action to have the title to the powerplant transferred to it with the transfer price reduced by any amounts or costs incurred by the Company in remedying defects or deficiencies in the plant. We make this recommendation provided, of course, that the transfer will not affect or relieve the U.S. Army of its rights or responsibility to pursue recovery of damages for defects from manufacturers.

CHAPTER 4

CANAL ZONE HOSPITAL RATES

Some U.S. Army representatives commented that rates charged the Army patients in Canal Zone hospitals were higher than those charged any other user. Also, U.S. Army representatives expressed concern that the Canal organization was not reimbursing the U.S. Army for military personnel assigned to duty in Canal Zone hospitals and that appropriated funds of the U.S. Army, therefore, were being spent to treat civilians not affiliated with the Army.

DISCUSSION

The Health Bureau, a Canal Zone Government component, has responsibility for hospital services (but not rates or rate-setting policy) in the Canal Zone. In addition to various clinics and a mental health center, the Health Bureau operates two general hospitals--Gorgas Hospital and Coco Solo Hospital. The hospitals' services are available to Canal organization employees and their families, U.S. Armed Forces uniformed and civilian personnel and their dependents, other U.S. Government agencies' employees and dependents, and other authorized persons.

Formerly, both the U.S. military and the Canal organization operated hospitals in the Canal Zone. However, the Congress, as a measure to eliminate duplication of facilities, stated in the Civil Functions Appropriation Act, 1955, that no appropriation or fund available to the Department of Defense was to be used after September 1, 1954, for maintaining and operating hospitals in the Canal Zone. As a result, the U.S. Army hospital at Fort Clayton was closed and the U.S. Navy hospital at Coco Solo was transferred to the Canal Zone Government without exchange of funds. Thus, all general hospitals in the Canal Zone are now managed by one agency.

FINDINGS AND CONCLUSIONS

All rates for Health Bureau services are set by the Governor-President. Generally, hospital rates may be basically classified as either reimbursable or employee rates.

Reimbursable rates

Besides requiring consolidation of Canal Zone hospitals, the Civil Functions Appropriation Act, 1955, also required all U.S. Government agencies, including U.S. military components, to fully reimburse the Canal Zone Government for its cost in furnishing hospital and medical care to their employees and dependents. To carry out this policy, the Canal organization sets reimbursable rates for both inpatient days and outpatient visits.

The two rates are established prospectively for each fiscal year on the basis of predicted workloads and budgeted costs. For example, the daily reimbursable rate for inpatient care in the two Canal Zone general hospitals represents the budgeted inpatient costs of the hospitals, plus the factor for recovering general expenses, divided by the projected number of inpatient days. Thus, these are cost-based rates designed to recover all applicable costs of hospital services. A more detailed description of the method use to compute the reimbursable rates for fiscal year 1976 is shown in appendix XII.

For fiscal year 1976, the reimbursable rates for an inpatient day and an outpatient visit are $189 and $17.75, respectively. The computation formula is straightforward and not difficult to follow. However, we did have difficulty finding a basis for the percentage factors used to exclude certain nonhospital costs and to distribute certain departmental costs between inpatient and outpatient services. Canal organization representatives indicated that these areas will be reviewed before fiscal year 1978 rates are set.

Contrary to public law, the reimbursable rates frequently have not been adequate to recover full costs. Such underrecovery is illustrated in appendix XIII which compares the general hospitals' reimbursable rates with actual costs 1/ for fiscal years 1955 through 1975. For example, in fiscal year 1975, the reimbursable inpatient and outpatient rates did not recover unit costs of $10.65 and $0.13, respectively. When extended by actual workload data for the year, this amounts to about $300,000 not collected from the applicable agencies. Given this magnitude and the legal requirement for the government to recover full cost for hospital services provided other U.S. Govenment agencies, the government should recover such deficits in the future through either yearend billings or adjustments in the billings for the following year. On the other hand, a credit should be given the other U.S. Government agencies in those cases where the reimbursable rates result in an overrecovery of cost.

1/Actual costs, like the reimbursable rates, include a factor for general expenses; see note d, app. XIII.

Except as noted above, the reimbursable rates represent a reasonable and equitable attempt by the Canal organization to prorate hospital costs among the various U.S. Government agencies using the facilities. Further, the reimbursable rates do not appear out of line with the average costs of stateside hospitals. A basis for comparison is the Civilian Health and Medical Program of the Uniformed Services, which is a cost-sharing plan for health care provided at civilian medical facilities to uniformed services' dependents and retired members. Claim data for this program shows that $161.18 was the average daily cost of inpatient care in U.S. civilian hospitals for fiscal year 1975. This average is very close to the $160.000 per day reimbursable rate for inpatient care assessed by Canal Zone hospitals during that year.

As a final item, we did not find any basis for the comments that rates charged the U.S. Army are higher than those charged any other user. The Canal organization charges the same reimbursable rates to each U.S. Government agency in the Canal Zone--Air Force, Navy, Federal Aviation Administration, Federal Highway Administration, and others. The confusion probably centers around employee rates because, in billing the U.S. military and other U.S. Government agencies, the reimbursable rates are first reduced by amounts (employee rates) payable by the patients themselves or their insurance. The deductible amounts relate to the civilian employees and dependents of the military and other U.S. Government agencies and are based on the same rates the Canal organization charges its own employees. These rates are discussed in the following section.

Employee rates

Employee rates apply to the Canal organization's, the U.S. military's, and other U.S. Government agencies' civilian employees and their dependents. The Canal organization's policy for these patients has been to achieve rates that will equal amounts payable by the major insurance programs in the United States. Rates not usually covered by insurance, or for which no guidelines are given, are to be set at fair and reasonable levels.

Section 106 of the Civil Functions Appropriation Act of 1954 stated that Canal organization funds were not to be used for providing free medical and hospital care to employees after December 31, 1953. Before this time, Canal organization employees received free medical and hospital care, except for maternity care and for subsistence and private rooms. Dependents of employees received such care at nominal rates.

As a result of section 106, now codified as 2 C.Z.C., section 233, the Canal organization established hospital rates for employees effective January 1, 1954. In reporting on these rates, we said that the rates were low compared with rates for the same or similar services in the United States and that general subsidization in all cases continued in apparent disregard of legislation. 1/

Somewhat earlier, we commented on the desirability of an employees' group hospitalization plan to eliminate all or part of the subsidized health care. During the latter part of 1956, a group health insurance plan was underwritten by a private company. However, hospital rates were maintained at levels below the cost of providing health care, so the plan did not meet the desired objective. 2/

Now, under the Federal Employees Health Benefits Program, as amended, both U.S. and non-U.S. citizen employees of the Canal organization and all other U.S. Government agencies are eligible for Government-sponsored health insurance plans. For fiscal year 1975 the Canal organization alone contributed over $4 million to the program. The most popular plan, the Canal Zone Benefit Plan, was available to employees for only 27 percent of the total premiums cost--the agencies' share was 73 percent.

Yet, despite the substantial insurance sponsorship, the Canal organization and other U.S. Government agencies are still absorbing a large portion of the costs of providing hospital services to civilian employees and their dependents. For the Canal Zone's two general hospitals, the costs absorbed for these agencies' inpatients alone during fiscal year 1975 were about $2.3 million, representing almost 50 percent of the cost of services provided. Of this amount, the Canal organization absorbed $1.8 million, whereas the U.S. military and other U.S. Government agencies absorbed about $500,000.

Such absorption results from inappropriately low employee rates. This situation is illustrated by appendix XIV,

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1/"Report on Audit of Panama Canal Company and the Canal Zone Government for the Year Ended June 30, 1953," 83d Cong. 2d sess. H. Doc. 473.

2/"Audit Report to the Congress of the United States--Panama Canal Company and Canal Zone Government for the Fiscal Year Ended June 30, 1956"; B-114839, July 11, 1957.

which is an analysis for fiscal year 1975 of the hospital fees charged to inpatients eligible for Government-sponsored insurance. These fees averaged only about $75 a day. This seems an unreasonably low amount to charge for a day's stay in a hospital, because this average includes all hospital fees charged, such as room and board and ancillary services, as well as doctor costs. In comparison, the average per day expense in community hospitals (i.e., nongovernmental, not-for-profit hospitals) in the United States for the 12-month period ended September 30, 1974, was about $127, and this figure does not include doctor fees billed in addition to hospital fees. In further comparison, as previously mentioned, claim data for the Civilian Health and Medical Program of the Uniformed Services shows that $161.18 was the average daily cost during fiscal year 1975 of inpatient care provided to uniformed services' dependents and retired members at civilian medical facilities in the United States. Moreover, the employees of the Canal organization and all other U.S. Government agencies in the Canal Zone are eligible for low cost insurance. For self and family protection, the employees' share of the Canal Zone Benefit Plan's biweekly premium was $6.99 in calendar year 1975 and is $6.88 in calendar year 1976. This insurance plan provides coverage for inpatient and outpatient treatment.

Canal organization officials agree that rates charged employees must be increased and have set October 1, 1977, as the target date by which to reach, to the extent practicable, comparability with the average of U.S. rates for similar services. However, establishing comparable rates should not be a goal in itself. It could be that actual costs for certain services in Canal Zone hospitals are less than the rates for similar services in the United States. For example, physicians' salaries in Canal organization hospitals are fixed under Federal pay scales and as such their income may be lower than that of private physicians in the United States. Accordingly, the Canal organization should insure, through accounting systems and cost-finding 1/ concepts, that rates do not exceed the actual costs of providing hospital and medical services. Further, the management tools necessary to implement this principle--cost finding and an appropriate accounting system--can provide information for use in managerial decisionmaking such as in evaluating the operational effectiveness of various departments. Such management tools are endorsed by the American Hospital Association.

Effective January 1976, the Canal organization increased a number of rates--some significantly. However, we are still concerned about the relative percentages of cost borne by patients and the sponsoring U.S. Government agencies. This ratio was about 50:50 in fiscal year 1975 (see app. XIV) and is expected to be about the same for fiscal year 1976. The ratio suggests that employee rates, besides being low, may also be structured too generally or inclusively. A case in point is the patient fee for a general outpatient clinic visit--$7.50 as of January 1976. This rate is supposed to cover the physician's professional services, medicines furnished by the physician, miscellaneous trivial surgical procedures, dressings, suturing, vaccinations and inoculations, and laboratory procedures furnished at the consultation.

Another patient fee which appears too general in nature is the per diem rate for hospital inpatient services of medical staff. Effective January 1976, this rate is as follows:

First day	$20.00
Second day	13.50
Third day forward, per day	6.75

1/Cost finding is a separate function used to supplement accounting systems. Normally, the accounting process records and reports only the direct, controllable costs of each organizational unit or department. Indirect and other noncontrollable costs, such as depreciation and interest, are not recorded by organizational units. Thus, the full costs of operating an organizational unit or department are not shown in departmental expense accounts. Full cost information is developed by a procedure referred to as cost finding--the apportionment or allocation of the costs of non-revenue-producing cost centers to each other and to the revenue-producing centers on the basis of statistical data measuring the amount of service rendered by each center to other centers. In short, cost finding shows the total or full costs of running each revenue-producing center.

For the average stay in a hospital, 7 days, this amounts to about $9.60 a day to cover medical staff services.

Other services subject to general or flat rates include laboratory services. Hospitalized patients are charged for laboratory services on a per diem basis. Effective January 1976, these rates are:

First day	$17.00
Second day	12.00
Third day through 120th day, per day	5.00
121st day forward	no charge

On the basis of the average inpatient stay of 7 days, these employee rates recover just $54.00 per inpatient for laboratory services, an average of only about $7.70 per day. We believe the Canal organization should consider charging patients for individual laboratory tests or services rather than use per diem rates. A common method for determining rates for individual laboratory items is to use weighted or relative values. The method could be used in the Canal Zone.

RECOMMENDATIONS TO THE GOVERNOR OF THE CANAL ZONE

Contrary to public law, the various other U.S. Government agencies have frequently not fully reimbursed the Canal Zone Government for hospital and medical care furnished to their employees and the employees' dependents. We recommend that in the future the government recover such deficits through either yearend billings or adjustments in the billings for the following year. On the other hand, a credit should be given the other U.S. Government agencies in those cases where the reimbursable rates result in an overrecovery of cost.

We also recommend that the employee rate policy be changed to require such rates to be set at the lower of (1) actual cost of the services provided or (2) amounts comparable to the rate average in U.S. hospitals similar in size and type to those in the Canal Zone. To do this, the Canal organization must use some form of cost-finding concepts and departmental revenue and expense accounting. We further recommend that the Canal Zone hospitals' general rates, particularly for laboratory services, be revised to make the rates more specific for individual services.

ARMY MEDICAL PERSONNEL ASSIGNED TO CANAL ZONE HOSPITALS

President Woodrow Wilson, in Executive Order 1885, January 27, 1914, noted that construction of the Canal had been successfully carried out under the supervision of the Secretary of War and that, logically, the Secretary should supervise canal operations under the permanent organization. In this regard, the President directed that military officers be detailed for certain duties with the Canal organization. This practice has continued; at present, most of the detailed military officers are medical personnel assigned to Canal Zone hospitals.

Generally, we did not find any substantial support for comments that the Canal organization was not reimbursing the U.S. Army for military personnel assigned to Canal Zone hospitals. The rates used in computing the cost of military personnel are established by the U.S. Army; the local command renders bills to the Canal organization; and the Canal organization mails checks to Forces Command, Fort McPherson, Georgia, payable to the Treasurer of the United States.

There was a related question regarding reimbursement for military doctors assigned to Canal organization hospitals on weekends to replace off-duty doctors. At first, no additional reimbursement was made for this afterhours work, because the Canal organization felt the military commands had the advantage of no longer having to operate their own emergency outpatient clinics. Nevertheless, effective July 1, 1975, the Canal organization began reimbursing the U.S. military for the physicians' services on weekends and holidays.

CHAPTER 5

SCOPE OF STUDY

Our review of electric power and hospital services rates in the Canal Zone involved analyses of the rates policy and then actual rates. The rates policy was analyzed within the parameters of applicable guidelines such as public laws and directives and views of the Congress and OMB as well as general cost-recovery principles. We interviewed Canal organization officials responsible for formulating and implementing the policies and also interviewed U.S. military officials in the Canal Zone to obtain their views and comments on these matters. We also considered comments on the Canal Zone electrical and hospital service rates that were included in a 1975 report issued by the Department of the Army's Inspector General. 27

Going from policy to practice, we analyzed fiscal year 1976 rates for electric power and hospital services and the computations used by the Canal organization to establish the rates. These rates are based on prior years' cost data which was subject to our review during examination of the Canal organization's financial statements for fiscal years 1974 and 1975.

SECRETARY OF THE ARMY
WASHINGTON

18 JUN 1975

Honorable Elmer B. Staats
Comptroller General of the United States
General Accounting Office
Washington, D. C. 20548

Dear Mr. Staats:

The purpose of this letter is to request the General Accounting Office to examine in-depth the rates the Panama Canal Company assesses the military services in the Canal Zone for electricity and patient services. Now seems an ideal time to review these rates since the GAO is currently conducting the biennial financial audit of the Canal Agency.

The activities and employees of the Canal organization pay less for electricity and patient services than the military services and this disparity has created a management problem that requires resolution. The results of the GAO inquiry would be very helpful toward this end, and I believe, would be of significant value to the House Panama Canal Subcommittee should it later desire to look into this matter as a part of its Canal oversight responsibility.

Sincerely,

Bo Callaway

Howard H. Callaway

ELECTRICITY RATES FOR COMMERCIAL CUSTOMERS (note a)
FISCAL YEARS 1953-76

Fiscal year	Effective date	Rate per kwh (note b)							
		First 150	Next 350	Next 99,500	Next 99,850	Next 400,000	Next 500,000	Next 1,500,000	All additional
1953	10/52	$0.02	-	-	$0.01	$0.008	$0.006	-	$0.005
1954-64	no change								
1965	7/64	.03	$0.015	$0.012	-	.0095	.0075	-	.006
1966	7/65	.03	.0175	.0145	-	.0120	-	$0.0095	.008
1967	7/66	.03	.0175	.0155	-	.0132	-	.0105	.009
1968	7/67	.03	.018	.017	-	.0147	-	.0117	.01
1969	no change								
1970	7/69	.032	.019	.0179	-	.0154	-	.0123	.0105
1971	7/70	.035	.021	.0197	-	.0169	-	.0135	.0116
1972	3/72	.038	.023	.0217	-	.0186	-	.0149	.0127
1973	no change								
1974	12/73	.044	.027	.025	-	.0214	-	.0171	.0146
1975	7/74	.070	.043	.040	-	.0342	-	.0274	.0234
1976	7/75	.0755	.0485	.0455	-	.0397	-	.0329	.0289

Notes:

[a]Commercial rates are charged to military components, other U.S. Government agencies, and private enterprise activities (banks, shippers, contractors, etc.) in the Canal Zone.

[b]The monthly charge for metered electric current is as indicated in the rate blocks; blocks left blank are not applicable to the rate structure for the respective fiscal year(s).

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APPENDIX IIA

ELECTRICITY RATES FOR CANAL ORGANIZATION COMPONENTS (note a)
(INTRA-AGENCY RATES)
FISCAL YEARS 1953-76

Fiscal year	Effective date	Monthly rate per kwh (note b) First 150	Next 49,850	Next 50,000	Next 400,000	Next 500,000	All additional
1953	10/52	$0.02	$0.01	$0.01	$0.008	$0.006	$0.005
1954-61	no change						
1962	7/61	.009	.009	.007	.007	.007	.007
1963-65	no change						
1966	7/65	.0095	.0095	.0075	.0075	.0075	.0075
	1/66	.0114	.0114	.0090	.0090	.0090	.0090
1967	7/67	.0119	.0119	.0094	.0094	.0094	.0094
1968-69	no change						
1970	7/69	.0125	.0125	.0099	.0099	.0099	.0099
1971	7/70	.0120	.0120	.0120	.0120	.0120	.0120
1972	3/72	.0132	.0132	.0132	.0132	.0132	.0132
1973-74	no change						
1975	7/74	.0169	.0169	.0169	.0169	.0169	.0169
1976	7/75	.0196	.0196	.0196	.0196	.0196	.0196

Notes:

[a] Intra-agency rates are assessed to Canal organization components and are treated as cost transfers within the Canal organization.

[b] The monthly charge for metered electric current is as indicated in the rate blocks. Some of the rate blocks were restructured to facilitate comparison between fiscal years.

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APPENDIX IIB

ELECTRICITY RATES TO CANAL ORGANIZATION EMPLOYEES (note a)
FISCAL YEARS 1953-76

Fiscal year	Effective date	Monthly rate per kwh (note b)													
		First 50	First 75	First 150	Next 100	Next 150	Next 170	Next 200	Next 225	Next 230	Next 275	Next 500	Next 750	Next 950	All additional
1953	10/52			$0.02											$0.01
1954-62	no change														
1963	8/62		$0.02		$0.015				$0.01				$0.004		$0.0075
1964	no change														
1965	no change														
1966	7/65	$0.03				$0.02		$0.01				$0.004			.0075
1967	no change														
1968	no change														
1969	no change														
1970	7/69	.0325					$0.0225			$0.01				$0.005	.0075
1971	7/70		.0350			.0250					$0.0106				.0071
1972	no change														
1973	no change														
1974	1/74		.0374			.0265					.0122				.0084
1975	7/74		.0400			.0291					.0140				.0100
	1/75		.0400			.0291					.0155				.0118
1976	7/75		.0421			.0312					.0176				.0139
	1/76		.0444			.0335					.0199				.0162

Notes:
[a]Employee rates apply to Canal organization employees and to employees of social, welfare, religious, fraternal, and non-profit employee service organizations within Canal Zone communities.

[b]The monthly charge for metered electric current is as indicated in the rate blocks; blocks left blank are not applicable to the rate for the respective fiscal year(s).

APPENDIX IIC

COMPUTATION PROCESS USED BY CANAL ORGANIZATION
TO SET ELECTRIC POWER RATES FOR FISCAL YEAR 1976 (note a)

Canal Organization intra-agency electricity rate per kwh			
Rate block	July 1974 rate	Plus rate factor (note b)	Equals July 1975 rate
Per KWH	$0.0169	$0.0027	$0.0196

Canal Organization employees' housing electricity rates per kwh					
Rate block (KWH)	Jan. 1975 rate	Plus rate factor (note c)	equals July 1975 rate	Plus rate factor (note c)	Equals Jan. 1976 rate
First 75	$0.0400	$0.0021	$0.0421	$0.0023	$0.0444
Next 150	.0291	.0021	.0312	.0023	.0335
Next 275	.0155	.0021	.0176	.0023	.0199
All additional	.0118	.0021	.0139	.0023	.0162

Commercial electricity rates per kwh			
Rate block (KWH)	July 1974 rate	Plus rate factor (note c)	Equals July 1975 rate
First 150	$0.0700	$0.0055	$0.0755
Next 350	.0430	.0055	.0485
Next 99,500	.0400	.0055	.0455
Next 400,000	.0342	.0055	.0397
Next 1,500,000	.0274	.0055	.0329
All additional	.0234	.0055	.0289

APPENDIX III

Notes:

a/The Canal organization sets electric power rates for three groups of consumers in the Canal Zone. This appendix, and appendixes IV through XI, show the computation process used by the Canal organization to establish fiscal year 1976 rates for the three groups of consumers.

b/Actually, since there is only one rate block for Canal organization intra-agency components, computation of the rate factor is unnecessary. The fiscal year 1976 rate is simply the estimated average recovery per kwh shown in app. IV, line 6. However, when more than one rate block is involved, the rate factor is computed; see note d below.

c/The Canal organization's policy for employee rates is to make them comparable to TVA rates. The Canal organization's rates analyst, in reviewing the January 1975 rates, determined they were lagging behind TVA rates by about 24 percent. It was decided, therefore, to increase each block rate in July 1975 and again in January 1976 by about 15 percent. To illustrate, the average recovery under January 1975 employee rates was $0.01363 per kwh; an increase of 15.4 percent gives the block rate increase factors, $0.0021. Similarly, the average recovery per kwh under July 1975 rates, $0.01573, increased by 14.6 percent, gives the other rate factor of $0.0023.

d/The fiscal year 1975 rates plus the rate factor equal the fiscal year 1976 rates ($0.0700 + $0.0055 = $0.0755, etc.). Appendix IV shows how the rate factor was derived. The process consists essentially of calculating an average recovery per kwh for fiscal years 1975 and 1976. The difference between the two averages is the rate factor (e.g., $0.0356 - $0.0301 = $0.0055). Actually, the factor should be $0.0056, representing all commercial consumers. The rates analyst stated that the factor for only the military was used because other commercial customers consume considerably less electricity, putting them in higher rate blocks which would distort the average recovery per kwh.

DERIVATION OF FACTORS USED TO INCREASE ELECTRIC
POWER RATES FOR FISCAL YEAR 1976 (note a)
(See app. III, note a)

Line no.	Fiscal year	Electricity distribution and recovery estimates	Canal organization components and employees: Intra-agency units	Canal organization components and employees: Employees' housing	Commercial customers: Military	Commercial customers: Others	Commercial customers: Total	Source of figures presented
1	1975	Estimated recovery	$3,058,900	$1,576,100	$8,992,000	$642,600	$9,634,600	App. V, line 8
2	1975	Estimated electricity distribution (kwh)	181,000,000	121,000,000	299,000,000	17,000,000	316,000,000	Estimated by Canal organization personnel
3	1975	Recovery per kwh	$0.0169	$0.0130	$0.0301	$0.0378	$0.0305	line 1 ÷ line 2
4	1976	Estimated recovery	$3,625,900	$2,081,900	$10,849,900	$826,500	$11,676,400	App. VI, line 4
5	1976	Estimated electricity distribution	185,000,000	123,000,000	305,000,000	18,000,000	323,000,000	Estimated by Canal organization personnel
6	1976	Recovery per kwh	$0.0196	$0.0169	$0.0356	$0.0459	$0.0361	line 4 ÷ line 5
7		Rate increase factors for July 1975	$0.0027	$0.0039	$0.0055	$0.0081	$0.0056	line 6 - line 3
8		Percent of increase	16.0	30.0	18.3	21.4	18.4	line 7 ÷ line 3

[a] Except for employee rates, the factors shown in line 7 of this appendix were used to establish new electric power rates effective July 1975. Employee rates were increased as explained in appendix III, note c.

Generally, as mentioned earlier (app. III, note d), the rate increase factors are the differences between estimated average recoveries per kilowatt hour for fiscal 1975 and those for fiscal 1976.

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APPENDIX IV

RECOVERY ESTIMATES (REVENUE AND COST TRANSFERS) FROM ELECTRIC POWER RATES FOR FISCAL YEAR 1975 (note a)
(See app. III, note a)

Line No.	FY 1975	Canal organ. components and employees			Commercial Customers		Notes
		Intra-agency Units	Employees' Housing		Military	Others	
1	July		$ 108,040		$ 745,285	$ 56,019	b
2	August		125,200		749,985	53,973	b
3	September		133,842		568,109	44,276	b
4	October		118,542		792,200	60,491	b
5	November		128,190		791,645	53,505	b
6	December		118,542		727,764	52,197	b
7	January to June		843,572		4,617,000	322,179	c
8	Total	$3,058,900	$1,576,100		$8,991,988	$642,640	d

[a] These figures were rounded and carried forward to line 1 on app. IV.

[b] These are actual figures, extracted by the Canal organization's rates analyst from accounting reports.

[c] These figures were estimated by Canal organization personnel.

[d] The intra-agency total is the product of estimated electricity distribution and the established rate per kwh. ($3,058,900 = 181,000,000 kwh x $0.0169/kwh).

APPENDIX V

RECOVERY ESTIMATES (REVENUE AND COST TRANSFERS) FROM ELECTRIC POWER RATES FOR FISCAL YEAR 1976 (note a)
(See app. III, note a)

Line no.	Description	Expense and recovery data									
		Expenses				Canal organ. components and employees			Commercial customers		Notes
			Less								
		Total	Water conservation	Locks standby	Net	Electrical outlets	Intra-agency components	Employees' housing	Military	Others	
1	Power Branch total expenses July 1, 1974 to February 28, 1975	$11,845.5	$2,088.0	$54.4	$ 9,703.1	$149.0	$2,207.1	$1,519.8	$ 5,415.1	$412.1	b
2	Customer group expenses as a percent of net					1.54	22.75	15.66	55.80	4.25	c
3	Power Branch budgeted expenses FY 1976	18,945.0	2,900.0	107.0	15,938	245.4	3,625.9	2,495.9	8,893.4	677.4	d
4	Estimated recoveries FY 1976	$20,391.2	$2,900.0	$107.0	$17,384.2	-	$3,625.9	$2,081.9	$10,849.9	$826.5	e

APPENDIX VI

Notes:

a/These are the supporting calculations for line 4 on app. IV.

b/These figures are from app. VII. Notice that total expenses are first reduced by water conservation and locks standby costs to give net expenses which are distributed among customers and to electrical outlets. Water conservation costs represent thermalelectric power generation costs incurred as a result of reserving water during dry seasons to transit ships. Thermal rather than hydroelectric power is generated during such periods to conserve water levels in Madden and Gatun Lakes to insure channel depths sufficient for vessel transits. Similarly, a locks standby charge is assessed because the locks have first priority on the use of power. Electrical outlets cost is that associated with the installation or adaptation of electrical outlets in Canal organization housing.

c/These are electrical outlets and customer group expenses as a percentage of net expenses as shown in line 1; for example, 1.54% = ($149.0 + $9,703.1). These percentages, which are based on actual fiscal year 1975 data, are then used to distribute fiscal year 1976 budgeted net expenses; see note d.

d/Total expenses and water conservation and locks standby charges are budgeted amounts. The net expenses are distributed to electrical outlets and among customer groups as noted above; for example, $245.4 = ($15,938 x 1.54%).

e/Line 4 is derived from line 3 and reflects the pricing policy applicable to each class of consumer:

- --Commercial revenues are estimated to be cost plus a factor (22 percent) to recover part of general corporate expenses:

  $10,849.9 = $8,893.4 x 1.22
  $ 826.5 = 677.4 x 1.22

- --Revenue from employees is related to TVA rates and is not cost-based (see app. III, note c.).

- --Recoveries (cost transfers) from intra-agency components relate to movement of direct costs from one operating activity to another. A factor for general corporate expenses is not included in the intra-agency rates.

DISTRIBUTION OF POWER BRANCH VARIABLE AND FIXED EXPENSES TO CUSTOMER GROUPS

JULY 1, 1974 TO FEBRUARY 28, 1975 (note a)

(in thousands)

(see app. III, note a)

Expense classification		Expenses: Total	Expenses: Less: Water conservation	Expenses: Less: Locks standby	Expenses: Net	Electrical outlets	Canal organ. components and employees: Intra-agency components	Canal organ. components and employees: Employees' housing	Commercial customers: Military	Commercial customers: Others	Notes
Hydroelectric generation	Variable	$ 21.3	-	-	$ 21.3	-	$ 12.5	$ 8.6	$ 0.2	-	b
	Fixed	300.5	-	$ 2.3	298.2	-	175.9	122.3	-	-	c
Thermal-electric generation and purchased power	Variable	7,315.9	$2,088.0	-	5,227.9	-	740.3	514.4	3,766.6	$206.6	d
	Fixed	1,960.1	-	52.1	1,908.0	-	385.4	297.6	1,162.0	63.0	e
Transmission, distribution, and dispatching	Fixed	1,719.9	-	-	1,719.9	$149.0	741.5	471.3	229.3	128.8	f
Overhead	Fixed	527.8	-	-	527.8	-	151.5	105.6	257.0	13.7	g
Total	All	$11,845.5	$2,088.0	$54.4	$9,703.1	$149.0	$2,207.1	$1,519.8	$5,415.1	$412.1	

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Notes:

a/The Canal organization's rates analyst obtained total variable and fixed expenses as indicated in app. VIII. Then the expenses were distributed among customer groups as discused in notes b through g of this appendix. Bottom line results are used in app. VI.

b/Variable expenses are first allocated between the two customer groups--Canal organization and commercial--on the basis of peak load demands upon the power system averaged for a year. Then, allocation of expenses within each customer group is based on actual distribution data. To illustrate, the allocation presented here was derived as presented in the charts below. The resulting figures in the right chart should be $12.4 and $8.7 but were rounded incorrectly by the rates analyst. The rounding errors have no effect on the rates computed.

See app. X, note c
$21.1 = ($21.3 x 99%)
0.2 = ($21.3 x 1%
$21.3

See app. IX, lines 6 and 7
$12.5 = ($21.1 x 59%)
8.6 = ($21.1 x 41%)
$21.1

c/The Canal organization reserves for itself the fixed expenses of hydroelectric generation. The net expenses are distributed between intra-agency components (59 percent) and employees' housing (41 percent) on an energy usage basis; see app. IX, lines 6 and 7.

d/Variable expenses of thermalelectric generation are allocated by same procedure described above in note b.

See app. X, note d	See app. IX, lines 6, 7, 9 and 10
$1,254.7 = ($5,227.9 x 24%)	$ 740.3 = (1,254.7 x 59%)
3,973.2 = ($5,227.9 x 76%)	514.4 = (1,254.7 x 415)
$5,227.9	$1,254.7
	$3,766.6 = $3,973.2 x 94.8%
	206.6 $3,973.2 x 5.2%
	$3,973.2

Notes: (con.)

e/See app. XI.

f/Transmission costs are joint costs applicable to all customers and are allocated on an energy usage basis. Distribution costs are allocated on a cost-to-serve basis determined by the number of lines, transformers, meters, cables, etc., which service each customer group. Since the military maintains a secondary distribution system, it pays only a small part of these costs.

g/These are direct costs (not to be confused with general corporate expenses) associated with operational level management and office force, applicable to all customers, and are allocated on an energy usage basis by the percentages in app. IX, lines 1 to 5. For instance, \$515.5 = (\$527.8 x 28.7%).

VARIABLE AND FIXED EXPENSES OF THE POWER BRANCH
JULY 1, 1974, to FEBRUARY 28, 1975 (note a)

(See app. III, note a)

	Expense classification	Total	Variable (note b)	Fixed (note c)
Hydroelectric generation	Overhaul	$ 19,200	-	$ 19,200
	Fuel	-	-	-
	Payroll	146,200	-	146,200
	Supplies	100	-	100
	Maintenance	71,000	$ 21,300	49,700
	Depreciation	85,300	-	85,300
	Total	321,800	21,300	300,500

Thermal-electric generation	Overhaul	$ 85,800	-	$ 85,800
	Fuel	6,130,400	$6,130,400	-
	Payroll	321,000	-	321,000
	Supplies	97,900	29,300	68,600
	Maintenance	468,100	140,400	327,700
	Depreciation	497,500	-	497,500
	Total	7,600,700	6,300,100	1,300,600

Purchased power	U.S. Army floating powerplant Sturgis	Capacity	$ 246,600	-	$ 246,600
		Energy	-	-	-
		Other	1,500	$ 500	1,000
	U.S. Army Power barge Weber	Capacity	393,700	-	393,700
		Energy	891,000	891,000	-
		Other	11,600	3,500	8,100
	Miscellaneous		14,400	4,300	10,100
	Republic of Panama		116,500	116,500	-
	Total		1,675,300	1,015,800	659,500

Transmission, distribution and dispatching	$ 1,719,900	-	$1,719,900

Overhead	General expense	$ 191,900	-	$ 191,900
	Training program	9,300	-	9,300
	Safety program	2,100	-	2,100
	Supervision and general	324,500	-	324,500
	Total	527,800	-	527,800

Power Branch total	$11,845,500	$7,337,200	$4,508,300

[a]These are the supporting calculations for total variable and total fixed expenses presented in appendix VII. The rates analyst obtains actual year-to-date figures from accounting reports and then distributes the classification totals between variable and fixed by the formulas stated in notes b and c.

[b]Variable expenses consist mainly of fuel and purchased power costs and 30 percent of total maintenance expenses.

[c]Fixed expenses include overhaul, salaries, supplies, capacity charges, and 70 percent of total maintenance expenses.

ELECTRICITY DISTRIBUTED TO CANAL ZONE CUSTOMERS
BY THE POWER BRANCH (note a)
JULY 1, 1974, TO FEBRUARY 28, 1975
(See app. III, note a)

Customer group		Electricity Distributed kwh (in millions)	Electricity Distributed percentage	Line no.
Canal organization	Intra-agency units	117.5	28.7%	1
	Employees' housing	81.8	20.0	2
Commercial	Military	199.6	48.7	3
	Others	10.9	2.6	4
Total		409.8	100.0%	5

Customer group		Electricity distributed kwh (in millions)	Electricity distributed percentage	Line no.
Canal organization	Intra-agency units	117.5	59.0	6
	Employees' housing	81.8	41.0	7
	Total	199.3	100.0	8

Customer Group		Electricity distributed kwh (in millions)	Electricity distributed percentage	Line no
Commercial	Military	199.6	94.8	9
	Others	10.9	5.2	10
	Total	210.5	100.0	11

[a] The electricity distribution percentages (actual for the period July 1, 1974 to February 28, 1975), were used to distribute Power Branch expenses, fixed and variable, among the various customers; see app. VII, notes b, c, d, e, and g.

PEAK HOURLY LOADS OF THE POWER SYSTEM (note a)
FISCAL YEAR 1974
(See app. III, note a)

Hydroelectric generation					
		Total peak hourly loads of the power system (in mw)			
Line no.	Customer group	Wet season (note b)	Dry season (note b)	Total	Percentage (note c)
1	Canal organization	748.2	552.	1,300.2	99
2	Commercial	10.2	-	10.2	1
3	Total	758.4	552.0	1,310.4	100

Thermal-electric generation					
		Total peak hourly loads of the power system (in mw)			
Line no.	Customer group	Wet season	Dry season	Total	Percentage (note d)
4	Canal organization	205.2	436.0	641.2	24
5	Commercial	1,002.4	1,048.9	2,051.3	76
6	Total	1,207.6	1,484.9	2,692.5	100

[a] This analysis of peak hourly loads was developed by the Canal organization's rates analyst from load curve data provided by the Power Branch.

[b] Generally, Panama has two seasons. The wet season figures represent generation from July through December; the dry from January through June. Note that hydroelectric generation is less during the dry season (see app. VI, note b and app. XI, note c).

[c] These percentages were used to distribute the variable expenses of hydroelectric generation between Canal organization and commercial users (see app. VII, note b).

[d] These percentages were used to distribute the variable expenses of thermal-electric generation between Canal organization and commercial users (see app. VII, note d).

APPENDIX XI

FIXED EXPENSES OF THERMAL-ELECTRIC GENERATION
DISTRIBUTED TO CUSTOMER GROUPS (note a)
JULY 1, 1974 TO FEBRUARY 28, 1975
(see app. III, Note a)

Line No.	Description	Total or net	Distribution to customer groups: Canal organization components and employees: Intra-agency units	Employees' housing	Commercial customers: Military	Others	Notes
1	Total peakload demand(mw)	115.0	33.0	23.0	56.0	3.0	b
2	Less hydroelectric capacity reserved (mw)	23.0	14.4	8.6	-	-	c
3	Net peakload demand (mw)	92.0	18.6	14.4	56.0	3.0	d
4	Line 3 in percentages	100.0%	20.2	15.6	60.9	3.3	e
5	Fixed expenses (net) distributed (in thousands)	$1,908.0	$385.4	$297.6	$1,162.0	$63.0	f

a/These are the supporting calculations for app. VII, note e.

b/The Canal organization's rates analyst obtained the total peak load demand (115.0 mw) from Power Branch data and then distributed the total among customers based on the energy usage data in appendix IX, lines 1 to 5. (e.g., 33.0 = 115.0 x 28.7%).

c/The hydroelectric capacity available year around, 23.0 mw, is about equivalent to the capacity of generation facilities at Madden Dam. Hydroelectric generation facilities at Gatun Lake usually are not operated during the dry season in order to conserve water to transit ships (see app. VI, note b and app. X, note b).

d/This line is 1 minus line 2.

e/Line 4 is a percentage presentation of line 3; e.g., 20.2% = (18.6 + 92.0).

f/The fixed expenses of thermal-electric generation are distributed to customers by line 4 percentages; e.g., $385.4 = ($1,908.0 x 20.2%).

CANAL ZONE GENERAL HOSPITALS
REIMBURSABLE RATES COMPUTATION FOR FISCAL YEAR 1976 (note a)

Budgeted costs of general hospitals	$19,432,000.00
Less non-hospital costs (7%),(note b)	1,360,000.00
Plus classified wage increase	559,000.00
Net budgeted costs	$18,631,000.00
Estimated workloads:	
Outpatient (OP) visits	380,000
Inpatient (IP) days	81,030

Reimbursable rates formula:

(OP visits) (OP rate) + (IP days) (IP rate)	=	net budgeted costs
(380,000) (OP rate) + (81,030) (IP rate)	=	$18,631,000.00
OP rate	=	X
IP rate	=	10.63X (note c)
(380,000) (X) + (81,030) (10.63X)	=	$18,631,000.00
OP rate = X	=	$15.01
IP rate = 10.63X	=	$159.56

Plus 15 percent for recovery of general expenses (note d):

OP rate	=	$17.26
IP rate	=	$183.49

Plus 3 percent for contingencies (note e)

OP rate	=	$17.78
IP rate	=	$188.99

Reimbursable rates rounded:

OP rate	=	$17.75
IP rate	=	$189.00

Notes:

[a]The inpatient and outpatient reimbursable rates are established prospectively for each fiscal year on the basis of budgeted costs and estimated workloads. For fiscal year 1976, these rates are $17.75 per outpatient visit and $189.00 per inpatient day. The rates apply to U.S. military uniformed and civilian personnel and their families and to other U.S. Government agencies' employees and dependents who use Canal Zone hospitals.

[b]Certain costs are deducted because they are recovered by other rates and/or they are not applicable to treatment of individual patients. For instance, the cost of ambulance service is excluded.

[c]This algebraic relationship is the ratio of fiscal year 1974's reimbursable costs ($149.78 ÷ $14.09 = 10.63) for inpatient and outpatient care. Since reimbursable rates are set prospectively, full-year cost data for fiscal year 1975 was not available for computing this ratio.

[d]Recovery of general expenses is discussed at length in ch. 2.

[e]Beginning with fiscal year 1976, a 3-percent contingency factor is being added, in view of the consistent underrecovery as indicated in app. XIII.

GENERAL HOSPITAL REIMBURSABLE RATES
COMPARED WITH ACTUAL COSTS (note a)
FISCAL YEARS 1955-75

Fiscal Year	Per inpatient day: Reimbursable rate	Actual cost	Recovered cost over or under(-)	Percent of actual cost recovered	Data per outpatient visit: Reimbursable rate	Actual cost	Recovered cost over under (-)	Percent of actual cost recovered
1955	$ 19.50	$ 21.65	$ -2.15	90.1	5.00	7.22	-2.22	69.3
1956	22.00	23.51	-1.51	93.6	7.00	7.48	-0.48	93.6
1957[b]	24.00	26.65	-2.65	90.1	-	-	-	-
1957[c]	27.50	26.65	0.85	103.2	7.50	7.24	0.26	103.6
1958	28.50	28.56	-0.06	99.8	7.50	7.98	-0.48	94.0
1959	34.00	33.36	0.64	101.9	8.25	8.06	0.19	102.4
1960	35.50	35.76	-0.26	99.3	8.75	8.86	-0.11	98.8
1961	36.00	35.23	0.77	102.2	8.75	8.03	0.72	109.0
1962	36.00	37.49	-1.49	96.0	8.25	7.67	0.58	107.6
1963	38.00	39.94	-1.94	95.1	8.25	7.22	1.03	114.3
1964	41.00	40.40	0.60	102.5	8.50	8.37	0.13	101.6
1965	43.00	45.49	-2.49	94.5	9.00	8.83	0.17	101.9
1966	47.00	51.36	-4.36	91.5	9.50	9.20	0.30	103.3
1967	50.00	57.75	-7.75	86.6	10.00	9.20	0.80	108.7
1968	54.00	58.04	-4.04	93.0	10.00	9.21	0.79	108.6
1969	59.00	66.96	-7.96	88.1	10.00	9.87	0.13	101.3
1970	65.50	82.86	-17.36	79.0	11.00	11.95	-0.95	92.1
1971	81.65	95.12	-13.47	85.8	12.00	11.06	0.94	108.5
1972	95.00	118.38	-23.38	80.3	13.50	12.92	0.58	104.5
1973	112.00	129.82	-17.82	86.3	13.50	13.24	0.26	102.0
1974	135.00	149.78	-14.78	90.1	13.75	14.09	-0.34	97.6
1975	160.00	170.65[d]	-10.65	93.8	14.00	14.13	-0.13	99.1

Notes:

a/See app. XII for computation of the inpatient and outpatient reimbursable rates for fiscal year 1976.

b/First 7 months.

c/Last 5 months.

d/This figure includes a 15-percent factor for recovering general expenses. Without this add-on, the actual unit cost is $148.39 per inpatient day ($148.39 x 115% = $170.65). In effect, then, the $160.00 reimbursable rate contributed only 8 percent towards recovering general expenses:

$$8\% = \frac{\$160.00 - \$148.39}{\$148.39}$$

General recovery factors are discussed in ch. 2.

APPENDIX XIII

APPENDIX XIV

ANALYSIS OF CANAL ZONE GENERAL HOSPITAL FEES FOR INPATIENTS ELIGIBLE FOR GOVERNMENT-SPONSORED INSURANCE FISCAL YEAR 1975

Patient category	Inpatient days	Patient fees (note a)	Sponsor fees	Total fees
Canal organization employees and dependents	26,078	$1,914,465.55	$1,805,738.45	$3,720,204.00
U.S. Army:				
Civilian employees	1,717	$137,566.85	$137,370.00	$274,936.85
Dependents of civilian employees	2,676	215,151.75	213,336.50	428,488.25
U.S. Air Force:				
Civilian employees	475	35,489.25	40,587.25	76,076.50
Dependents of civilian employees	707	53,588.25	59,629.25	113,217.50
U.S. Navy:				
Civilian employees	246	18,898.25	20,471.75	39,370.00
Dependents of civilian employees	261	21,741.00	20,030.00	41,771.00
Total	6,082	$482,435.35	$491,424.75	$973,860.10
Other Government agencies:				
Federal Aviation Administration	103	$ 8,164.25	$ 8,331.75	$ 16,496.00
Middle Americas Research Unit and Smithsonian Tropical Research Institute	57	5,127.25	4,002.25	9,129.50
Others	2	149.50	170.50	320.00
Total	162	$13,441.00	$12,504.50	$25,945.50
Total	32,322	$2,410,341.90	$2,309,667.70	$4,720,009.60
Patient and sponsor fees as a percentage of total fees		51	49	100
Average patient, sponsor, and total fees per inpatient day		$74.57	$71.46	$146.03

Note:

[a]Patient fees are payable by the patient and/or his insurance, whereas sponsor fees are billed to the applicable Federal agency.