

CHAPTER III

POWER CONTRACTS

A. Background

The Bureau of Reclamation of the Department of the Interior has statutory authority to operate major powerplants on the Colorado River and to utilize the power and energy produced therefrom for use by Reclamation and associated projects and to sell any available power and energy. In the sale preference is given to municipalities and public agencies.

A.1 Priorities in the Use of Hoover Dam

Section 6 of the Boulder Canyon Project Act, December 21, 1928, 45 Stat. 1057, 1061, provides:

"The dam and reservoir provided for by section 1 hereof shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River compact; and third, for power..."

Article II (A) of the Decree in *Arizona v. California*, dated March 9, 1964, 376 U.S. 340, repeats these provisions. And, Articles III(a) and (b) of the operating criteria, approved June 8, 1970, provide, respectively, for releases from Lake Mead to meet the Mexican Treaty obligations and the reasonable consumptive use requirements of mainstream users in the Lower Basin.

Pursuant to the foregoing, releases from Lake Mead are made to meet the Mexican Treaty obligations and the consumptive use requirements of mainstream users and, in the process, to generate power. Conversely, at this time water is not released from Lake Mead solely for the purpose of producing power.

A.2 Sources of Federal Power and Energy

Federal power is available in the Lower Colorado River Basin from the following principal sources, each of which is separately discussed:

- Boulder Canyon Project;
- Parker-Davis Project;
- Colorado River Storage Project; and
- Navajo Project.

In addition, there is an extensive transmission system throughout most of the State of Arizona and the Pacific Northwest-Pacific Southwest Intertie which provides transmission service between the Phoenix area and southern Nevada.

A.3 Department of Energy

A new cabinet level United States Department of Energy (DOE) was created on October 1, 1977. This agency absorbed a portion of Interior's Bureau of Reclamation power and energy functions and led to a division of authority in the administration of Interior's power contracts. Reclamation essentially retained responsibility for operation of all the Colorado River dams, including all aspects of Hoover Dam. DOE's Western Area Power Administration (WAPA) assumed administration of Interior's power sales contract functions and the operation and maintenance of the transmission system, including switchyards.

A.4 Contracts Administered by DOE, Interior and Jointly

Lists of the power and power related contracts retained for administration by Interior, those assumed by WAPA, and the four minor power related agreements jointly administered by both Reclamation and WAPA, together with a capsule description of each agreement, respectively, appears herein as Appendix 301.

B. Boulder Canyon Project

B.1 Background

The Boulder Canyon Project was authorized by the Act of December 21, 1928 (45 Stat. 1057), subject to the terms of the Colorado River Compact. The Boulder Canyon Project Adjustment Act (54 Stat. 774), dated July 19, 1940, provided for certain changes in the original plan. The Act of June 29, 1948 (62 Stat. 1112), provided that certain investments and expenditures not related to the construction, operation, or maintenance of the project be removed from the repayable costs of the project.

The project was constructed for the purposes of controlling the floods, improving navigation, regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States, and for the generation of electrical energy. The main features of the project include the dam and reservoir, hydroelectric plant with 1,344,800 kW capacity, and high voltage switchyards. Electrical energy is delivered to the allottees at the high voltage switchyards and transmitted from that point to loads in Arizona, California, and Nevada over facilities which are owned or arranged for by the allottees of electrical energy. The investment of the United States in Hoover Dam and appurtenant works subject to amortization May 31, 1969, was \$145,181,882.

The total estimated cost of the project is \$176,075,663. The final generating unit N-8 was completed and placed in operation on December 1, 1961.

Revenues from Hoover Powerplant are paid into the Colorado River Dam Fund, from which appropriations for operation and maintenance are made by Congress annually.

After making provision for operation, maintenance, and replacement of the project, annual payments of \$300,000 to each of the States of Arizona and Nevada and annual transfers of \$500,000 to the Colorado River Development Fund, the net revenue available for repayment of advances to the Treasury, with interest, amounted to \$191,266,074 at May 31, 1977. With the exception of \$25,000,000 allocated to flood control and the nonproject costs determined in accordance with the act of June 29, 1948 (62 Stat. 1112), the cost of construction, operation, maintenance, and replacement will be repaid to the United States in 50-year periods with interest at 3 percent per annum by the revenues from generating charges, the sale of energy, and other incidental revenues. These revenues are guaranteed by formal contracts with the energy allottees with rates based on the repayment of advances for construction within 50-year periods. The repayment of the advances of \$25,000,000 allocated to flood control has been deferred without interest until June 1, 1987, after which time such advances so allocated to flood control shall be repayable to the Treasury as the Congress shall determine.

The dam and powerplant building and their appurtenances are owned, operated, and maintained by the United States. Generating, transforming, and switching facilities are owned by the United States but are operated and maintained by the Department of Water and Power of the City of Los Angeles and the Southern California Edison Company, Ltd., as agents of the United States.

The background and texts of Interior's "Contract for Lease of Power Privilege" with the Department of Water and Power of the City of Los Angeles and the Southern California Edison Company, Ltd., and the energy contracts of 1930 entered into pursuant to the Boulder Canyon Project Act of December 21, 1928, 45 Stat. 1057, and the later "Contract for the Operation of Boulder Power Plant" with Los Angeles and Edison, and the energy contracts entered into pursuant to the Boulder Canyon Project Adjustment Act, dated July 19, 1940, 54 Stat. 774, and the regulations promulgated thereunder on May 20, 1941, are set out in "The Hoover Dam Documents, Wilbur and Ely, 1948."

B.2 Current Contracts

The basic agency contract, No. 11r-1333, dated May 29, 1941, designated "Contract for the Operation of Boulder Power Plant," between the United States and the City of Los Angeles and its Department of Water and Power, and Southern California Edison Company, Ltd., is operative through May 31, 1987. Administration of the agency contract has been retained by Reclamation.

Nine energy contracts were entered into with the allottees of energy named in the general regulations of May 20, 1941. These collectively dispose of all firm and secondary energy to be generated at Hoover Dam during the period of June 1, 1937, to May 31, 1987.

Early in 1977 Reclamation established a committee to prepare data and criteria for marketing of Hoover energy after termination of current contracts. Following the creation of the Department of Energy on October 1, 1977, the current contracts for electric service and the responsibility for future marketing were transferred to WAPA. The responsibility for operation and maintenance of the powerplant remained with Reclamation.

The allocation of energy (and the allocation of the construction costs of Hoover Dam and Powerplant) is summarized as follows:

Contract No.	Contractor	Firm energy Allocation Percent	Date of Execution	Date of Termination
11r-1334	Dept. of Water & Power	17.5554	May 29, 1941	May 31, 1987
11r-1336	Metropolitan Water Dist.	35.2517	May 29, 1941	May 31, 1987
11r-1455	State of Arizona	17.6259	Nov 23, 1945	May 31, 1987
11r-1338	State of Nevada	17.6259	May 29, 1941	May 31, 1987
11r-1335	So. Calif. Edison Co.	7.0503	May 29, 1941	May 31, 1987
11r-1340	City of Glendale	1.8475	May 29, 1941	May 31, 1987
11r-1337	City of Pasadena	1.5847	May 29, 1941	May 31, 1987
11r-1341	Calif. Electric Power Co.	.8813	May 29, 1941	May 31, 1987
11r-1339	City of Burbank	.5773	May 29, 1941	May 31, 1987

The Metropolitan Water District has the first right to all unused firm and all secondary energy for pumping water into and in its Colorado River Aqueduct. The City of Los Angeles, Southern California Edison Company, and California Electric Power Company are obligated to take and/or pay for, respectively, 55, 40, and 5 percent of all firm energy allocated to the States but unused by them or The Metropolitan Water District. The city and companies have also the right to use, in the same respective percentages, secondary energy unused by The Metropolitan Water District.

The United States reserves up to 20,000 kW, with the associated energy to be deducted equally out of the allotments to the City of Los Angeles and the Southern California Edison Company. The United States can use reserved power for its own use or for resale in its construction or operating camps, or for any purpose within a local area defined in the regulations. This reserved power is currently sold to the city of Boulder City, National Park Service and Bureau of Mines.

Allocation to the cities of Burbank, Pasadena, and Glendale is generated and transmitted by the City of Los Angeles. California Electric Power Company merged with Southern California Edison Company, but for purposes of accounting, contract No. 11r-1341 remains in full force and effect.

B.3 Operating Year Ending May 31, 1976

The following illustrates the kWh sales to these Boulder Canyon Project allottees of electric energy and the income therefrom for the operating year ending May 31, 1976, and the energy reserved by the United States for its own use.

UPDATING THE HOOVER DAM DOCUMENTS

		INCOME		
		Energy Sales kWh	Net Amount	Mills Net Per kWh
	<u>To Municipalities</u>			
City of Burbank				
Firm		21,181,137	40,095.90	
Generating Charge			15,496.00	
Total Burbank		21,181,137	55,591.90	2.62
City of Glendale				
Firm		67,784,775	128,316.58	
Generating Charge			49,580.00	
Total Glendale		67,784,775	177,896.58	2.62
City of Pasadena				
Firm		58,142,643	110,064.03	
Generating Charge			42,524.00	
Total Pasadena		58,142,643	152,588.03	2.62
City of Los Angeles				
Firm		602,010,845	1,139,606.54	
Secondary		-0-	-0-	
Generating Charge			1,435,231.00	
Total Los Angeles		602,010,845	2,574,837.54	4.28
Total		749,119,400	2,960,914.05	3.95
<i>Other Agencies of State Government</i>				
State of Arizona				
Firm		646,694,271	1,224,196.26	
Generating Charge			927,607.00	
Total Arizona		646,694,271	2,151,799.26	3.33
State of Nevada				
Firm		646,694,271	1,224,192.26	
Generating Charge			1,024,757.00	
Total Nevada		646,694,271	2,248,949.26	3.48
Total		1,293,388,542	4,400,748.52	3.40
<i>Privately Owned Utilities</i>				
California Electric Power Co.				
Firm		45,720,000	86,547.96	
Secondary		-0-	-0-	
Generating Charge			211,251.00	
Total CEP Company		45,720,000	297,798.96	6.51
Southern California Edison Company				
Firm		207,969,940	393,687.11	

		INCOME		
		Energy Sales kWh	Net Amount	Mills Net Per kWh
	<u>To Municipalities</u>			
Secondary		-0-	-0-	
Generating Charge			891,375.00	
Total SCE Company		207,969,940	1,285,062.11	6.18
Total		253,689,940	1,582,861.07	6.24
<i>Other Sales to Public Authorities</i>				
The Metropolitan Water District				
Firm		1,293,466,752	2,448,532.57	
Secondary		-0-	-0-	
Generating Charge			1,051,926.41	
Total (MWD)		1,293,466,752	3,500,458.98	2.71
Totals: (including Interdepartmental)		75,849,300	264,782.71	
Regular Firm		3,665,513,934	6,938,817.92	1.89
Secondary		-0-	-0-	
Subtotal Energy		3,665,513,934	6,938,817.92	1.89
Generating Charge			5,770,121.00	
Total Charges		3,665,513,934	12,708,938.92	3.47

The following shows the disposition of energy reserved for United States use during the operating year ending May 31, 1976:

		INCOME		
		Energy Sales kWh	Net Amount	Mills Net Per kWh
	<u>To Municipalities</u>			
Nonutility Expense				
Purchased Power - Energy			143,582.71	
Purchased Power - Generating Chgs.			121,200.00	
Total Purchased Power			264,782.71	
Sales of Electric Energy-Nonutility				
Boulder City:				
Firm		62,948,300	119,161.12	
Generating Charge			101,086.00	
Other Costs			20,466.00	
Total		62,948,300	240,713.12	3.82
National Park Service				
Firm		4,142,805	7,842.30	
Generating Charge			7,136.00	
Other Costs			2,536.00	
Total		4,142,805	17,514.30	4.23

UPDATING THE HOOVER DAM DOCUMENTS

	INCOME		
	Energy Sales kWh	Net Amount	Mills Net Per kWh
<u>To Municipalities</u>			
Bureau of Mines			
Firm	1,385,000	2,621.81	
Generating Charge		3,180.00	
Other Costs		998.00	
Total	1,385,000	6,799.81	4.91
Pumping Energy			
Firm	5,405,190	10,232.03	
Generating Charge		9,798.00	
Other Costs		7,532.00	
Total	5,405,190	27,562.03	5.10
Above energy sales, except powerhouse pumps are delivered at Boulder City substation resulting in transmission losses of	1,968,005		
Total energy reserved for United States use	75,849,300	292,589.26	3.86
Excess of Nonutility Income, from sale of electrical energy to contractors listed over Non-utility Expense of Purchased Power shown above		27,806.55	

B.4 Hoover Powerplant Modification

A "Hoover Powerplant Modification Feasibility Investigation" is underway to determine the optimum feasible increased generating capacity which should be added to Hoover Powerplant. Under consideration are:

- (1) Increasing the capacity of the existing generator units;
- (2) Adding large units to the end of the penstocks; and
- (3) Adding reversible pump generators to the end of the penstocks.

A peaking power needs survey initiated in May 1977, with a questionnaire sent to approximately 90 entities to determine their future peaking requirements, has been completed.

C. Parker-Davis Project

C.1 Background

The Parker Dam and Davis Dam power projects were authorized and constructed separately. The Parker Dam power project was authorized under the Rivers and Harbors Act of August 30, 1935 (Public Law 409, 74th Congress, 1st session, 49 Stat. 1028). The Davis Dam project was authorized under the Reclamation Act of 1939 (53 Stat. 1187), when a finding of feasibility was made by the Secretary of the Interior on April 26, 1941. Their consolidation into the Parker-Davis Project was authorized by Act of May 28, 1954 (68 Stat. 143).

The primary purpose of the Parker Dam was to provide a forebay from which The Metropolitan Water District of Southern California could pump water into its Colorado River Aqueduct. The dam was constructed with funds advanced by The Metropolitan Water District (MWD). Parker Dam Powerplant was later added to provide low cost electrical energy to Arizona and southern California. Power generation started on December 13, 1942. MWD is entitled to one-half of the power generated at Parker Dam.

Davis Dam provides regulation of the Colorado River below Hoover Dam for domestic use, irrigation use, and for delivery of water at the United States-Mexico International Boundary as required in Article 12(b) of the Mexican Water Treaty of November 8, 1945. The Davis Dam project also provides for production and transmission of electric energy.

The major project works include Davis Dam and Powerplant, Parker Dam and Powerplant, and a high voltage transmission system with substations which provide for delivery of energy to the customers and sectionalizing of the long transmission lines. Five generating units rated 45,000 kW each are installed at Davis Powerplant and four units of 30,000 kW each are installed at Parker. The transmission system includes 35 substations and approximately 1,545 miles of high voltage transmission lines.

The total estimated construction cost of the Parker-Davis Project is \$152,859,558. The portion of the cost allocated to power excluding contributions and nonreimbursable costs will be repaid from power revenues with interest at 3 percent. In addition, costs allocated to irrigation pumping and to servicing the Mexican Treaty will be repaid from power revenues without interest.

All project works are operated and maintained by Government forces.

The Parker-Davis Project provides electrical service in various categories as follows:

(1) Wholesale firm power service has been provided under the terms and conditions of contracts with both preference and nonpreference contractors under the existing Schedule LC-F2 which provides an average rate of approximately 6.65 mills/kWh at 60 percent monthly load factor.

(2) The Parker-Davis Project has special rates for Federal irrigation pumping service. Power and energy are supplied at rates based principally on operation and maintenance costs under the terms and conditions of existing contracts with various irrigation districts in the Yuma, Arizona, area to meet Gila Project and Yuma Auxiliary Project irrigation pumping requirements. The rate charged under these contracts is 3.5 mills/kWh for Federal irrigation and drainage pumping, and 6.65 mills/kWh is charged for other project purposes.

(3) Power and energy are supplied from the Parker-Davis Project to meet requirements of the Colorado River Front Work and Levee System at the rate of 6.65 mills/kWh.

(4) The Parker-Davis Project provides domestic retail service at such places as the Parker-Davis Project camps at Parker and Davis Dams under Schedule LC-L3. This schedule provides energy at a rate of 8 mills/kWh. Under recent regulations Reclamation is in the process of developing a camp rate which is consistent with other utility rates in the local area.

(5) The Parker-Davis Project provides transmission service over the facilities of the Parker-Davis Project under several long-term contracts with preference contractors, and also has a number of contracts which provide for use of specific facilities. The rates for transmission service and use of facilities vary between contracts depending on the facilities used.

(6) Under an Agreement with the Colorado River Storage Project, the Parker-Davis Project provided and maintains specific additions to the Parker-Davis Project system which are required for the delivery of Colorado River Storage Project power and energy to Southern Division contractors. Payment is based on annual costs and charges are subject to annual adjustment for operation and maintenance costs, therefore, increased costs are automatically covered.

C.2 Contracts for the Sale of Power

Firm power and energy were marketed from the Parker-Davis Project to both preference and non-preference customers in Arizona, southern California and southern Nevada, under terms and conditions of electric service contracts which terminated March 31, 1976, and December 31, 1977, respectively. The following exhibits summarize as of April 1, 1973, and July 1, 1975, the amounts under contract as firm and recapturable power with 14 preference contractors and two nonpreference contractors which are served by the Parker-Davis Project. The total amount of power under contract during the summer season is 215,025 kW, including 19,500 kW which are subject to recapture. The total amount under contract for the winter season is 161,275 kW, including 14,625 kW of recapturable power. The purposes of recapture, as established in the contracts, are for use in construction, operation, and/or maintenance of projects under the administrative control of the Bureau of Reclamation.

The following Parker-Davis contracts were in effect as of April 1, 1973, and July 1, 1975:

PARKER-DAVIS PROJECT Contract Rates of Delivery As of July 1, 1975						
Preference Customer	Summer			Winter		
	Recapturable ¹	Nonrecapturable	Total	Recapturable ¹	Nonrecapturable	Total
	kW	kW	kW	kW	kW	kW
Arizona Electric Power Cooperative, Inc. (Excluding MEC)	0	19.425	19.425	0	14.570	14.570
Mohave Electric Cooperative, Inc.	0	2.515	2.515	0	1.890	1.890
	0	21.940	21.940	0	16.460	16.460
Arizona Power Authority	3.035	0	3.035	2.275	0	2.275
Colorado River Resources, Division of, State of Nevada	8.080	45.060	53.140	6.060	33.810	39.870
Colorado River Indian Reservation	1.315	2.005	3.320	985	1.505	2.490
Edwards Air Force Base	2.020	15.030	17.050	1.515	11.270	12.785
Imperial Irrigation District	0	30.055	30.055	0	22.535	22.535
Mesa, City of, Arizona	0	9.590	9.590	0	7.190	7.190
Salt River Project	0	30.000	30.000	0	22.500	22.500
San Carlos Irrigation Project	2.020	14.025	16.045	1.515	10.515	12.030
Thatcher, Town of, Arizona	0	310	310	0	230	230
Wellton-Mohawk Irrigation & Drainage District	1.010	2.005	3.015	760	1.505	2.265
Yuma Irrigation District	0	1.500	1.500	0	1.125	1.125
Yuma Proving Ground	2.020	3.005	5.025	1.515	2.255	3.770
TOTAL PREFERENCE CUSTOMERS	19.500	174.525	194.025	14.625	130.900	145.525
Nonpreference Customers						
California-Pacific Utilities Company	0	6.000	6.000	0	4.500	4.500
Citizens Utilities Company	0	15.000	15.000	0	11.250	11.250
TOTAL NONPREFERENCE CUSTOMERS	0	21.000	21.000	0	15.750	15.750
TOTAL PARKER-DAVIS CONTRACT RATES OF DELIVERY	19.500	195.525	215.025	14.625	146.650	161.275

¹Recapturable on 2-years' advance written notice for use in construction, operation and/or maintenance of projects under the administrative control of the Bureau of Reclamation.

PARKER-DAVIS PROJECT
Contract Rates of Delivery
Effective April 1, 1973
Kilowatts

<u>Preference Customers</u>	<u>Firm</u>		<u>Recapturable</u>		<u>Contract No.</u>
	<u>Summer</u>	<u>Winter</u>	<u>Summer</u>	<u>Winter¹</u>	
Arizona Electric Power Cooperative, Inc.	19,425	14,570	0	0	14-06-300-1307
Arizona Power Authority	0	0	3,035	2,275	14-06-300-1311
Colorado River Commission	33,060	34,310	8,080	6,060	14-06-300-1302
Colorado River Indian Reservation	2,005	1,505	1,315	985	14-06-300-1205
Edwards Air Force Base	15,030	11,270	2,020	1,515	14-06-300-1300
Imperial Irrigation District	30,055	22,535	0	0	14-06-300-1301
Mesa City of, Arizona	9,590	7,190	0	0	14-06-300-1309
Mohave Electric Cooperative, Inc.	2,515	1,890	0	0	14-06-300-1308
Salt River Project	42,000	22,000	0	0	14-06-300-1207
San Carlos Irrigation Project	14,025	10,515	2,020	1,515	14-06-300-1204
Thatcher, Town of, Arizona	310	230	0	0	14-06-300-1310
Wellton-Mohawk Irr. & Drain. Dist.	2,005	1,505	1,010	760	14-06-300-1290
Yuma Irrigation District	1,500	1,125	0	0	14-06-300-1295
Yuma Proving Ground	3,005	2,255	2,020	1,515	14-06-300-1293
TOTAL PREFERENCE CUSTOMERS	174,525	130,900	19,500	14,625	
<u>Nonpreference Customers</u>					
California-Pacific Utilities Company	6,000	4,500	0	0	14-06-300-802
Citizens Utilities Company	15,000	11,250	0	0	14-06-300-991
TOTAL NONPREFERENCE CUSTOMERS	21,000	15,750			
TOTAL CONTRACT RATE	195,525	146,650	19,500	14,625	

¹Recapturable on 2-years' advance written notice for use in construction, operation, and/or maintenance of projects under the administrative control of the Bureau of Reclamation.

Parker-Davis Project contracts were entered into with California-Pacific Utilities Company and Citizens Utilities Company to settle disputes which arose between Citizens Utilities Company and California-Pacific Utilities Company and the United States as to the rights of these contractors to renew contracts which provided a power supply from the Boulder Canyon Project. Both contracts provided for termination on December 31, 1972, with an option for renewal for a 5-period. Each entity exercised its option and the contracts remained in force through December 31, 1977.

C.3 Reallocations

On April 4, 1975, a proposed reallocation of Parker-Davis Project power and energy was published in the Federal Register. The effect of this reallocation was to redistribute the Parker-Davis Project power and energy which was under contract to the nonpreference customers. While the nonpreference customer contracts did not terminate until December 1977, arrangements were made with the Colorado River Storage Project to provide additional capacity and energy so that this reallocation could be made effective April 1, 1976.

Their totals of 21,000 kW summer allocation and 15,750 kW winter allocation were made available to increase the allocation to other preference Parker-Davis power customers.

On September 21, 1975, the Department of the Interior approved new allocations of Parker-Davis power to Parker-Davis customers (and for Southern Division customers of Colorado River Storage Project (CRSP) customers) substantially in accordance with Interior's proposal of March 20, 1975, 40 F.R. 66, pages 15101-15104.

Prior to the reallocation, the permanent available Parker-Davis power for the summer season was 195,525 kW to preference customers, 21,000 kW to nonpreference customers, and 38,975 kW for project purposes. The withdrawable allocation was 19,500 kW, so that there was a total of 254,000 kW for the summer season.

Comparable figures for the winter season were 130,000 kW, 15,750 kW, and 38,975 kW for a total of 185,625 kW. The withdrawable allocation was 14,625 kW.

The total summer season Parker-Davis figures were unchanged following reallocation although the amounts available to individual customers were adjusted.

The Parker-Davis permanent winter season reallocated total figures were adjusted slightly to 172,100 kW (from 171,350 kW) as were the withdrawable quantities to 13,900 kW (from 14,625 kW).

The background and reasons for the reallocation are set out in a memorandum of August 20, 1975, from the Commissioner of Reclamation to the Secretary of the Interior.

Lists of the Parker-Davis customers (and the CRSP customers) for both the summer and winter seasons before and after reallocation are as follows:

TABLE I
(Summer Season Allocations)

Customer or Load	PRESENT ALLOCATION					FINAL REALLOCATION (kW)				
	Parker-Davis Project					Parker-Davis Project				
	1. Permanent	2. Withdrawable	3. Total	4. CRSP	5. Total	6. Permanent	7. Withdrawable	8. Total	9. CRSP	10. Total
Ak-Chin Indian Community	----	----	----	----	----	----	----	----	4,500	4,500
Arizona Electric Power Coop.	19,425	----	19,425	12,300	31,725	21,100	----	21,100	13,400	34,500
Arizona Power Authority	----	3,035	3,035	----	3,035	----	3,300	3,300	----	3,300
Chandler Heights Citrus Irr. Dist.	----	----	----	400	400	----	----	----	450	450
Colorado River Indian Agency	2,005	1,315	3,320	750	4,070	5,500	----	5,500	750	6,250
DCRR of Nevada	45,060	8,080	53,140	28,500	81,640	49,050	8,750	57,800	30,900	88,700
Edwards Air Force Base	15,030	2,020	17,050	----	17,050	16,350	2,150	18,500	----	18,500
Electrical District No. 2	----	----	----	10,400	10,400	----	----	----	11,350	11,350
Electrical District No. 3	----	----	----	8,650	8,650	----	----	----	9,450	9,450
Electrical District No. 4	----	----	----	5,250	5,250	----	----	----	5,750	5,750
Electrical District No. 5 (Pinal)	----	----	----	3,250	3,250	----	----	----	3,550	3,550
Electrical District No. 5 (Maricopa)	----	----	----	1,700	1,700	----	----	----	1,850	1,850
Electrical District No. 6	----	----	----	6,250	6,250	----	----	----	6,850	6,850
Electrical District No. 7	----	----	----	4,950	4,950	----	----	----	5,400	5,400
Imperial Irrigation District	30,055	----	30,055	----	30,055	32,550	----	32,500	----	32,550
Littlefield Electric Coop.	----	----	----	200	200	----	----	----	250	250
Maricopa Co. Mun. Water Conservation	----	----	----	5,850	5,850	----	----	----	6,350	6,350
City of Mesa	9,590	----	9,590	4,850	14,440	10,450	----	10,450	5,250	15,700
Mohave Electrical Coop.	2,515	----	2,515	400	2,915	2,700	----	2,700	450	3,150
Navajo Tribal Util. Authority	----	----	----	2,500	2,500	----	----	----	2,700	2,700
Ocotillo Water Conservation Dist.	----	----	----	1,200	1,200	----	----	----	1,300	1,300
Queen Creek Irrigation Dist.	----	----	----	----	----	----	----	----	2,000	2,000
Roosevelt Irrigation Dist.	----	----	----	5,200	5,200	----	----	----	5,650	5,650
Roosevelt Water Conservation Dist.	----	----	----	2,500	2,500	----	----	----	2,700	2,700
City of Safford	----	----	----	1,200	1,200	----	----	----	1,300	1,300
Salt River Project	30,000	----	30,000	101,900	131,900	31,700	----	37,700	111,250	142,950
San Carlos Irrigation Proj.	14,025	2,020	16,045	1,750	17,795	15,250	2,150	17,400	1,900	19,300
San Tan Irrigation Dist.	----	----	----	----	----	----	----	----	950	950
Town of Thatcher	310	----	310	550	860	350	----	350	600	950
Wellton-Mohawk Irr. & Drain Dist.	2,005	1,010	3,015	250	3,265	2,200	1,000	3,200	300	3,500
Williams Air Force Base	----	----	----	2,200	2,200	----	----	----	2,400	2,400
Yuma Irrigation Dist.	1,500	----	1,500	----	1,500	1,600	----	1,600	----	1,600
Yuma Proving Ground	3,005	2,020	5,025	400	5,425	3,300	2,150	5,450	450	5,900
Priority Uses	38,975	----	38,975	----	38,975	42,400	----	42,400	----	42,400
Private Utilities	21,000	----	21,000	----	21,000	----	----	----	----	----
Total	234,500	19,500	254,000	213,350	467,350	234,500	19,500	254,000	240,000	494,000

TABLE II
(Winter Season Allocations)

Customer or Load	PRESENT ALLOCATION					FINAL REALLOCATION (kW)				
	Parker-Davis Project					Parker-Davis Project				
	1. Permanent	2. Withdrawable	3. Total	4. CRSP	5. Total	6. Permanent	7. Withdrawable	8. Total	9. CRSP	10. Total
Ak-Chin Indian Community	----	----	----	----	----	----	----	----	3,300	3,300
Arizona Electric Power Coop.	14,570	----	14,570	100	15,070	16,200	----	16,200	1,400	17,600
Arizona Power Authority	----	2,275	2,275	----	2,275	----	2,650	2,650	----	2,650
Chandler Heights Citrus Irr. Dist.	----	----	----	150	150	----	----	----	200	200
Colorado River Indian Agency	1,505	985	2,490	100	2,890	4,200	----	4,200	400	4,600
DCRR of Nevada	33,810	6,060	39,870	11,450	51,320	36,300	6,000	42,300	17,600	59,900
Edwards Air Force Base	11,270	1,515	12,785	----	12,785	13,450	1,500	14,950	----	14,950
Electrical District No. 2	----	----	----	5,850	3,850	----	----	----	4,500	4,500
Electrical District No. 3	----	----	----	1,400	1,400	----	----	----	1,650	1,650
Electrical District No. 4	----	----	----	2,100	2,100	----	----	----	2,450	2,450
Electrical District No. 5 (Pinal)	----	----	----	1,500	1,500	----	----	----	1,750	1,750
Electrical District No. 5 (Maricopa)	----	----	----	700	700	----	----	----	800	800
Electrical District No. 6	----	----	----	----	----	----	----	----	----	----
Electrical District No. 7	----	----	----	700	700	----	----	----	800	800
Imperial Irrigation District	22,535	----	22,535	----	22,535	26,300	----	26,300	----	26,300
Littlefield Electric Coop.	----	----	----	100	100	----	----	----	150	150
Maricopa Co. Mun. Water Conservation	----	----	----	1,300	1,300	----	----	----	1,500	1,500
City of Mesa	7,190	----	7,190	1,650	8,840	8,000	----	8,000	2,300	10,300
Mohave Electrical Coop.	1,390	----	1,890	200	2,090	2,200	----	2,200	250	2,450
Navajo Tribal Util. Authority	----	----	----	1,000	1,000	----	----	----	1,150	1,150
Ocotillo Water Conservation Dist.	----	----	----	500	500	----	----	----	600	600
Queen Creek Irrigation Dist.	----	----	----	----	----	----	----	----	----	----
Roosevelt Irrigation Dist.	----	----	----	1,000	1,000	----	----	----	1,150	1,150
Roosevelt Water Conservation Dist.	----	----	----	950	950	----	----	----	1,100	1,100
City of Safford	----	----	----	350	350	----	----	----	400	400
Salt River Project	22,500	----	22,500	29,350	52,050	22,500	----	22,500	38,250	60,750
San Carlos Irrigation Proj.	10,515	1,515	12,030	350	12,380	11,950	1,500	13,450	1,000	14,450
San Tan Irrigation Dist.	----	----	----	----	----	----	----	----	----	----
Town of Thatcher	230	----	230	200	430	250	----	250	250	500
Wellton-Mohawk Irr. & Drain Dist.	1,505	760	2,265	100	2,365	1,850	750	2,600	150	2,750
Williams Air Force Base	----	----	----	550	550	----	----	----	650	650
Yuma Irrigation Dist.	1,125	----	1,125	----	1,125	1,300	----	1,300	----	1,300
Yuma Proving Ground	2,255	1,515	3,770	200	3,970	2,900	1,500	4,400	250	4,650
Priority Uses	24,700	----	24,700	----	24,700	24,700	----	24,700	----	24,700
Private Utilities	15,750	----	15,750	----	15,750	----	----	----	----	----
Total	171,350	14,625	185,975	60,750	246,725	172,100	13,900	186,000	84,000	270,000

Ten-year power contracts were offered to the 12 Parker-Davis customers who received an allocation of Parker-Davis power. The contracts became effective April 1, 1976. They are not administered by WAPA.

C.4 Other Parker-Davis Revenues

In addition to the revenues received from the foregoing Parker-Davis contracts, other revenues are received by the project from the following sources:

Contract No. 14-06-300-1444

Arizona Power Authority

Wheeling

Facilities Charge

CUC Wheeling, Amend. No. 1

CRSP Transfer of Funds

Contract No. 176r-607

State of Nevada

Wheeling

Amargosa Capacity Charge

Arizona Public Public Service Co.

Wheeling (Letter Agreement dated June 12, 1975, through fiscal year 1976 and expected continuation with either APS or others)

Contract No. 14-06-300-1998

Nevada Power Company

Amargosa Reservoir Capacity Charge

Contract No. 14063002240

Nevada Power Company and Salt River Project

Spinning Reserve Capacity Charge or Emergency Assistance

Contract No. 14-06-300-1318

California-Pacific Utilities Company

Emergency Transmission Service

Contract No. 14-06-300-2335

Arizona Power Pooling Association

Wheeling

Contract No. 14-06-300-1569

Electrical District No. 2

Signal Facilities Charge

Miscellaneous Income

(Includes Contracts Nos. 14-06-300-2550-Bureau of Land Management, 14-06-300-1968-Phelps-Dodge, and 14-06-300-2577-Valley Electrical Association)

C.5 Reclamation's Project Use Loads

The line item designated "Priority Uses" in the aforementioned list of Parker-Davis (and CRSP) customers before and after reallocation refers to Reclamation's Project Use Loads served by the Parker-Davis Project.

A description of those loads as of October 1, 1977, follows:

Gila Project Loads

There are a number of Gila Project loads located within the Wellton-Mohawk Irrigation and Drainage District (WMIDD) area. Among these loads are Pumping Plants Nos. 1, 2, and 3 which have a combined maximum peak demand of around 20 megawatts and a monthly energy use of about 10,000,000 kWh. Relift and drainage pumps scattered throughout the area have a total load of about 5 megawatts and consume approximately 2,500,000 kWh monthly. Energy usage for the preceding loads is billed to WMIDD at 3.5 mills/kWh (S-1) rate. Service to Wellton Camp, which is the Gila Project maintenance base, and to the residences of Wellton-Mohawk ditchriders, who maintain the Gila Project facilities, totals 250,000 kWh monthly and represents approximately a 750 kW load. These loads are also billed to the WMIDD, but at 6.65 mills/kWh (S-1 rate).

On the Yuma Irrigation District (YID) system out of Gila Substation, the Yuma relift pumps comprise a small Gila Project load, 150 kW and 20,000 kWh per month, which is billed to YID at 3.5 mills/kWh (S-1 rate).

On the Yuma Mesa Irrigation and Drainage District (YMIDD) system, combined Gila Project load is approximately 7,000 kW and 2,500,000 kWh monthly, billed to YMIDD at 3.5 mills/kWh (S-1 rate) except for a small amount being supplied to an office building at 6.65 mills/kWh (S-2 rate).

Approximately 35 Gila Project saline and sump pump sites are located in the Wellton-Mohawk area and represent a 1 megawatt (MW) load and an approximate monthly energy consumption of 500,000 kWh. This energy is billed to the Yuma Projects Office at 3.5 mills/kWh (S-1 rate).

Three Gila Project supply wells on the Yuma Projects system served off the 34.5-kV ties at Gila Substation create a load of about 288 kW and 180,000 kWh monthly. An arrangement between the Yuma Projects office and Yuma Irrigation District provides for this load to be billed to YID at 3.5 mills/kWh (S-1), with YID being reimbursed by the Yuma Projects Office.

Some of the numerous Reclamation drainage wells located in the South Gila Valley are also on the Yuma Projects system served off the 34.5-kV ties at Gila Substation and are Gila Project, Wellton-Mohawk Division, loads. The total load for these Gila Project drainage wells is about 304 kW with a monthly energy consumption of around 190,000 kWh. These drainage well loads are billed at 3.5 mills/kWh to the Yuma Projects Office.

Colorado River Front Work and Levee System Loads

The portion of Reclamation's South Gila Valley drainage wells which are not Gila Project loads and are also on the Yuma Projects system served off the 34.5-kV ties at Gila Substation are Colorado River Front Work and Levee System (CRFW&LS) loads. The CRFW&LS drainage well loads total about 208 kW and approximately 130,000 kWh monthly, payable by the Yuma Projects Office at 3.5 mills/kWh (S-1 rate).

Energy used by the CRFW&LS pumped storage facility at Senator Wash varies from 250,000 to 1,000,000 kWh monthly, dependent on the water releases from Parker Dam and the water requirements of Yuma area farmers. This energy is billed to the Yuma Projects Office at 6.65 mills/kWh (S-2 rate).

CRFW&LS wells served off the Yuma County Water Users' Association system have a combined monthly load of 2,500 kW and 1,300,000 kWh. This energy is billed to the Yuma Projects Office at 3.5 mills/kWh (S-1 rate).

Twelve drainage pumps constitute a 700 kW and 500,000 kWh monthly CRFW&LS load fed from the YID system. These loads are billed to the Yuma Projects Office at 3.5 mills/kWh (S-1 rate).

Parker-Davis Project Loads

The Parker-Davis Project employee residential load for Coolidge, Mesa, and Tucson Substations, and for Davis and Parker Dams totals approximately 70,000 kWh monthly and is billed to the employees at the rate of 8 mills/kWh (LC-13 rate).^{*} The Parker-Davis Project Phoenix headquarters building area, which

^{*}This rate is currently under review in accordance with a recent directive to increase Government housing and utility rates to be more in line with costs to the private citizens in the surrounding areas.

includes a small Central Arizona Project load, and the camp lights at Davis and Parker Dams together total to a monthly load of 200,000 kWh. This energy is accounted for at 6.65 mills/kWh (S-2 rate).

Following creation of the United States Department of Energy (DOE) on October 1, 1977, all Parker-Davis power contracts were transferred to DOE's Western Area Power Administration (WAPA) by the Department of the Interior for administration.

Since January 1, 1978, all Parker-Davis power contracts are with preference customers.

C.6 Rate Adjustments

Rate adjustment public information forums were held in Phoenix, Arizona, October 9, 1975. This followed publication and mailing of a "Parker-Davis Project Power Repayment Study - Brochure for Fiscal Year 1974, dated September 1975."

A Public Comment Forum was held in Las Vegas on December 1 and 2, 1975.

Initially, there were separate schedules for Parker Dam Power Project and for Davis Dam Project. From August 1, 1940, to January 1, 1963, the Parker Dam Power Project sold power and energy under Schedule R3-F1 which had an incremental charge for energy which, when averaged with the demand charge at 60 percent monthly load factor, resulted in an average rate variation of 4 mills/kWh to 6.25 mills/kWh.

The initial rate schedule for the Davis Dam Project was Schedule R3-F3, effective February 10, 1948, which had an incremental charge on the energy which, when averaged with the demand charge at a 60 percent monthly load factor, resulted in an average rate of 5 mills/kWh. Schedules R3-F4 effective May 1, 1953, and R3-F5, effective February 1, 1956, did not change the charges on the demand or energy.

On January 1, 1963, Schedule R3-F6 became effective. This rate combined the Parker and Davis Dam Projects rates into one schedule with an average rate of 5 mills/kWh at 60 percent monthly load factor. Schedule R3-F6 provided wholesale firm power service with a capacity charge of \$0.875/kW of billing demand and an energy charge of \$0.003 (3 mills/kWh). The minimum capacity charge was \$0.875/kW per month of contract rate of delivery. Schedule R3-L7, implemented January 1, 1953, provided domestic retail service at a rate which charged \$0.02/kWh for the first 100 kWh, and \$0.005 (5 mills/kWh) for the balance of energy used. The minimum bill was \$1.00 per month.

Effective April 1, 1974, Schedules LC-F1 and LC-L2 were promulgated and superseded Schedules R3-F6 and R3-L7. Wholesale firm power service was provided to both preference and nonpreference contractors at an average rate of approximately 6.65 mills/kWh at 60 percent monthly load factor.

The Parker-Davis Project had a special rate for Federal irrigation pumping services; e.g., 3 mills/kWh for Federal irrigation and drainage pumping, and 6 mills/kWh for other project purposes. Domestic retail service was provided at a rate of 7 mills/kWh; e.g., Parker-Davis Project camps at Parker and Davis Dams.

The following rate increases were made effective as of June 1, 1977, by Schedule LC-F2 (which superseded Schedule LC-F1).

- (1) Increase the existing wholesale firm power rate of 1.35/kW per month and \$0.003/kWh to \$1.39/kW per month and \$0.0035/kWh. This revised rate will provide an average rate of 6.65 mills/kWh at 60 percent monthly load factor.

- (2) Increase the existing rate for domestic retail service from 7.0 mills/kWh to 8.0 mills/kWh.

C.6.1 Fiscal Year 1976 Repayment Study

This study for the Parker-Davis Project showed a need for an increase of approximately 14 percent in firm power revenues to insure the repayment of the Project. Firm power rates were previously set by the fiscal year 1974 Power Repayment Study and became effective on June 1, 1977. The rates included a demand charge of \$1.39/kW per month and an energy charge of 3.5 mills/kWh.

The 1976 Study updated the 1974 Study by including actual OM&R costs and revenues for fiscal years 1975 and 1976, and the transitional quarter.

Rate increase hearings have been held in abeyance in order to permit organization of the Department of Energy.

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C.7 Summary of Energy Deliveries and Income - Fiscal Years 1976, 1977

The following illustrates the kilowatthour sales to the Parker-Davis customers and the income therefrom for the 12-month period ending June 30, 1976.

<u>Contractor</u>	INCOME		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
<i>Municipalities</i>			
Town of Thatcher (Cochise Sub.)	1,578,075	9,378.23	5.94
Total	1,578,075	9,378.23	5.94
<i>Other Agencies of State Government</i>			
Arizona Power Pooling Assn.	149,652,734	917,570.21	6.13
Arizona Power Authority (Maricopa)	15,200,714	90,712.38	5.97
Div. of Colorado River Resources	263,767,572	1,581,471.22	6.00
Imperial Irrigation District	152,589,405	872,907.29	5.72
Salt River Project	145,124,000	877,632.00	6.05
WMIDD (WM Substation)	13,054,799	83,694.16	6.41
Relift and Drainage Pumps	23,164,259	69,492.77	3.00
Wellton Camp	1,319,315	7,915.89	6.00
Ditchriders	307,848	1,847.05	6.00
Pumping Plant No. 1	22,327,260	66,981.78	3.00
Pumping Plant No. 2	51,665,765	154,997.30	3.00
Pumping Plant No. 3	25,609,162	76,827.48	3.00
Yuma Irrigation District	3,417,083	32,425.00	9.49
Yuma Irrigation District (.003)	471,141	1,413.43	3.00
Yuma Irrigation District (.006)	9,600	57.60	6.00
Yuma-Mesa IDD (.003)	19,433,978	58,301.94	3.00
Yuma-Mesa IDD (.006)	97,644	585.85	6.00
Total	887,212,339	4,894,833.35	5.52
<i>Other Agencies of Federal Government</i>			
Bureau of Indian Affairs			
Colorado River Ind. Res. (Total)	24,675,786	240,926.41	9.76
Parker Dam	6,004,187		
Headgate Rock	10,306,324		
Parker, Arizona	8,365,275		
San Carlos Project (Total)	80,609,851	609,533.87	7.56
Coolidge	62,218,175		
Oracle	18,391,676		
Total	105,285,637	850,460.28	8.08
<i>Privately Owned Utilities</i>			
California-Pacific Utilities Co.	28,339,200	172,092.60	6.07
Citizens Utilities Co. (Total)	70,848,000	430,231.50	6.07
Hilltop	30,076,200		

<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
Nogales	35,947,800		
Parker Dam (Havasus)	4,824,000		
Total	99,187,200	602,324.10	6.07
<i>Projects Not Engaged in Electric Operations</i>			
CRFW Drainage Pumps	1,262,294	8,267.54	6.55
Saline Pumps	4,929,911	26,611.69	5.40
Gila Valley Drainage Pumps	2,354,537	11,927.65	5.07
CRFW Senator Wash	8,744,000	52,464.00	6.00
USBR Wells	14,580,743	105,704.83	7.25
Gila Valley Drainage Pumps	1,169,806	3,509.42	3.00
Total	33,041,291	208,485.13	6.31
<i>Other Public Authority</i>			
Air Force (Total)	87,831,800	516,789.15	5.88
Mead	12,239,000		
Blythe	75,592,800		
Army, Dept. of (Yuma Test Station)	22,169,547	142,007.39	6.41
Total	110,001,347	658,796.54	5.99
<i>Domestic</i>			
Camp Residents' Use (Davis Dam)	190,819	1,340.32	7.03
Total	190,819	1,304.32	7.03
<i>Interdepartmental</i>			
Camp Lights (Davis Dam)	177,106	1,239.76	7.00
Headquarters Area Lighting	1,587,900	9,528.20	6.00
Total	1,765,006	10,767.90	6.10
TOTAL FIRM SALES	1,238,261,714	7,236,385.91	5.84

In addition to the total firm sales of 1,238,261,714 kWh resulting in an income of \$7,236,385.91, there were interchanges and other deliveries during this period making a "Grand Total Power Sales" of 1,621,868,375 kWh which did not change the above income figures.

However, there were transmission charges, discounts and other miscellaneous income of \$2,887,777.31, \$10.36, and \$2,161,348.21, respectively, in addition to the aforementioned income of \$7,236,385.91 during fiscal year 1976.

Data comparable to that for fiscal year 1976 follows for fiscal year 1977, ending September 30, 1977:

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<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
<i>Municipalities, Towns & Villages</i>			
City of Mesa	41,705,144	259,379.33	6.22
Town of Thatcher	1,622,160	10,245.98	6.32
Total	43,327,304	269,625.31	6.22
<i>Other Agencies of State Government</i>			
APPA	26,127,000	185,301.00	7.09
DCRR - 2628	270,093,600	1,711,089.53	6.34
ED-3 - 2626	13,446,135	82,590.61	6.14
Imperial Irr. Dist - 2630	157,495,435	997,209.13	6.33
Salt River Project - 2631	146,591,000	929,681.38	6.34
WMIDD - 2634	15,038,533	99,001.19	6.58
Ditchriders - 11r-1591	322,416	1,975.27	6.13
Pumping Plants 1,2,3, 11r-1591	81,091,850	257,624.75	3.18
Relift & Drainage Pumps 11r-1591	21,169,589	66,375.67	3.14
Wellton Camp 11r-1591	1,252,115	7,669.70	6.13
Yuma Irrigation Dist. - 2635	3,122,194	34,155.08	10.94
South Gila Valley			
Irrigation & Drge. Pumps - 1270	617,474	1,995.81	3.23
Other Project Uses - 1270	9,600	58.56	6.10
Yuma-Mesa Irrigation & Drainage District			
Yuma Mesa Division			
Irrigation & Drainage Pumps W102	18,076,962	57,598.19	3.19
Other Project Uses - W102	94,330	578.30	6.13
Total	754,548,233	4,432,904.17	5.87
<i>Rural Cooperatives</i>			
AEP Coop - 2661	95,116,816	591,625.05	6.22
ED-3 2626	2,485,305	18,188.41	7.32
Total	97,602,121	609,813.46	6.25
<i>Other Agencies of Federal Government</i>			
Bureau of Indian Affairs			
Colorado River Ind. Reservation			
Total - 2627	34,041,298	255,062.01	7.49
Bouse Tap	2,940,670		
Headgate Rock	24,352,889		
Parker Switchyard	6,747,739		
San Carlos Project (Total)-2632	83,202,570	538,458.35	6.47
Coolidge	44,040,570		
Oracle	39,162,000		
Total	117,243,868	793,520.36	6.77

<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
<i>Privately Owned Utilities</i>			
Cal-Pacific Utilities Co.-802	28,274,400	178,128.60	6.30
Citizens Utilities Co. (Total)-991	71,551,515	452,062.11	6.32
Hilltop	39,770,100		
Nogales	21,540,500		
Parker Switchyard	3,435,100		
Black Mesa	6,805,815		
Total	99,825,915	630,190.71	6.31
<i>Projects Not Engaged in Electric Operations (Reclamation Project Loads)</i>			
<i>Yuma Projects</i>			
CRFW Drainage Pumps	1,828,241	8,760.42	4.79
CRFW Saline Pumps	1,344,009	6,696.92	4.98
S.G.V. Drge. Wells	2,166,738	9,483.77	4.38
S.W. P.G. Plant	9,068,000	55,522.50	6.12
YM&YV Drge. Wells	14,392,557	75,020.41	5.21
Gila Project WM Div. Drge. Wells (Delivery of Water to Mexico)	3,677,640	16,449.10	4.47
SGV Drainage Wells	1,225,741	3,846.10	3.14
Total	33,702,926	175,779.22	5.22
<i>Other Public Authorities</i>			
Dept. of Army (Yuma Proving Gd) 2636	20,826,652	149,672.88	7.19
Edwards Air Force Base (Total) 2629	89,118,400	564,072.85	6.33
Blythe	83,182,400		
Mead	5,936,000		
Total	109,945,052	713,745.73	6.49
<i>Domestic</i>			
Coolidge, Mesa, Tucson, (Res.)	90,268	511.39	5.67
Davis Camp (Gov. Employees)	477,117	3,398.70	7.12
Davis Camp (Non-Gov. Employees)	250,080	1,784.13	7.13
Parker Camp (Gov. Employees)	382,164	2,699.36	7.06
Parker Camp (Non-Gov. Employees)	550,580	3,867.84	7.03
Total	1,750,209	12,261.42	7.01
<i>Interdepartmental</i>			
<i>Used by the United States</i>			
Camp Lights (Davis Dam)	150,094	1,067.77	7.11
Camp Lights (Parker Dam)	486,685		
Headquarters Area Lighting	1,474,900	9,037.53	6.13

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<u>Contractor</u>	INCOME		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
Total	2,111,679	10,105.30	4.79
TOTAL FIRM SALES	1,260,057,307	7,647,945.68	6.07

In addition to the total firm sales of 1,260,057,307 kWh resulting in an income of \$7,647,945.68, there were interchanges and other deliveries during this period, making a "Grand Total Power Sales" of 1,567,868,804 kWh which did not change the above income figures.

However, there were rents, discounts, other miscellaneous income and Power Pool Sales of \$3,127,070.61, \$51.67, \$30,598.23, and \$851,004.38, respectively, in addition to the aforementioned income of \$7,647,945.68 during fiscal year 1977.

D. Colorado River Storage Project

D.1 Background

The Colorado River Storage Project (CRSP) and 11 participating projects were authorized April 11, 1956, by Public Law 84-485. Ten additional participating projects were authorized as follows: two by the Act of June 13, 1962, 76 Stat. 96; three by the Act of September 2, 1964, 78 Stat. 852; and five by the Act of September 30, 1968, 82 Stat. 886.

The Colorado River Storage Project as outlined in 1950 included 10 storage units. Four of these were authorized for construction by the Act of April 11, 1956 (flaming Gorge, Glen Canyon, Curecanti and Navajo). Together the four units provide 33,600,000 acre-feet of reservoir storage capacity and about 1,266,000 kW of installed generating capacity. About three-fourths of both capacities will be provided by the Glen Canyon Unit.

The storage units will perform two major essential functions. They will regulate streamflow so that water commitments to the Lower Colorado River Basin can be met in dry periods without curtailment of the development of water uses allotted the Upper Basin. Also, they will produce hydroelectric energy. The participating projects consume water of the Upper Colorado River System for irrigation, municipal and industrial purposes and participate in the use of revenues in the Basin Fund.

Revenues from the sale of the electric energy left after payment of the operating costs and the reimbursable construction costs of the storage units will be available for assistance in the repayment of costs of participating projects; namely, the irrigation costs of these projects that are beyond the payment ability of the irrigation water users. Transmission of the electric power to load centers will be a cooperative effort of existing public and private utilities and the Bureau of Reclamation. The storage Project reservoirs will also directly supply some water for irrigation and municipal and industrial uses. Extensive power transmission lines and facilities have been and are being constructed in conjunction with the Storage Project.

Participating projects are Reclamation projects consuming water apportioned to the Upper Colorado River Basin and requiring storage replacement and revenue assistance from the storage units in the repayment of irrigation costs. Twenty-one participating projects (and units) have been authorized to date. They will provide water for irrigation on about 900,000 acres of land, over 400,000 acre-feet of water annually for municipal and industrial uses, about 166,000 kW of electric power, and will provide recreation, fish and wildlife, flood control, and miscellaneous benefits.

D.2 Storage Projects

Curecanti Unit

The Curecanti Unit develops storage and power possibilities along a 40-mile stretch of a deep canyon section of the Gunnison River above the Black Canyon of the Gunnison National Monument and below the town of Gunnison, Colorado. The facilities include three dams and reservoirs with powerplants. The developments, in order moving downstream, are Blue Mesa, Morrow Point, and Crystal.

The Blue Mesa Dam, Reservoir, and Powerplant are constructed. Initial power was produced September 1967. The reservoir's total capacity is 941,000 acre-feet. The powerplant contains two 30,000 kW generators.

Morrow Point Dam and Reservoir, about 11 miles downriver from Blue Mesa Dam, is complete. The total storage capacity of the reservoir is 117,000 acre-feet. The powerplant contains two 60,000 kW generators.

Crystal Dam and Reservoir, about 8 miles below Morrow Point Dam, is complete. The capacity of the reservoir is 27,240 acre-feet. The powerplant will house a single 28,000 kW generator and is under construction.

Flaming Gorge Unit

Flaming Gorge Dam is on the Green River, a major tributary of the Colorado River, in northeastern Utah about 20 miles west and 6 miles south of the corner common to Utah, Wyoming, and Colorado. The dam is a concrete, thin arch structure, 502 feet high and 1,285 feet long and was completed in 1963. The reservoir has a total storage capacity of 3,789,000 acre-feet. The powerplant contains three 36,000 kW generators, the last one installed February 1964. Initial power was produced November 1963.

Glen Canyon Unit

Glen Canyon Dam is on the Colorado River in northern Arizona, about 13 river miles upstream from Lees Ferry and was completed in 1964. It is the only one of the authorized dams on the mainstream of the Colorado River. Glen Canyon Dam is a gravity arch concrete structure, 710 feet high and 1,560 feet long. The dam is one of the highest in the world and, of the Federally constructed dams, is second in height only to Hoover Dam in the United States (Oroville Dam in California is higher). The reservoir has a maximum capacity of 27,000 acre-feet. When full, it will cover about 163,000 acres and extend 186 miles up the Colorado River, nearly to the mouth of Green River, and 71 miles upstream on the tributary San Juan River. About 1,998,000 acre-feet of reservoir capacity is inactive and is useful for sediment accumulation, protection of fish, and helps provide the power head at the dam whose minimum power pool is 6,124,000 acre-feet of water. A powerplant and a switchyard have been constructed at the dam. The powerplant includes eight generating units with a total installed capacity of 950,000 kW. Storage of water in the reservoir was initiated January 23, 1963. Initial power was produced September 1964. The last generator was installed in February 1966.

Navajo Unit

Navajo Dam is on the San Juan River in New Mexico about 35 miles east of Farmington and was completed in 1963. The Navajo Reservoir has a total capacity of 1,709,000 acre-feet, of which about 12,600 acre-feet are inactive.

Transmission Division

The authorizing Act of April 11, 1956, provides that project powerplants and transmission facilities shall be operated in conjunction with other Federal powerplants, present and potential, so as to produce the greatest

practicable amount of power and energy that can be sold at firm power and energy rates. To carry out the provisions of the law, a high voltage transmission grid is largely completed which interconnects the plants of the authorized units and participating projects of the Storage Project and effects interconnection with other Bureau projects and with public and private utility systems in the market area, which includes Arizona, Colorado, New Mexico, Utah, Wyoming, and parts of California and Nevada.

Major transmission lines consist of approximately 476 miles of 345-kV transmission lines, 814 miles of 230-kV transmission lines, 315 miles of 138-kV transmission lines, and 117 miles of 115-kV transmission lines. Thirteen substations have been constructed as well as additions to three existing substations.

The constructed features of the Transmission Division will be operated and maintained by the United States.

Contracts covering interconnections and transmission service are in effect between the United States and the principal utilities in the Colorado River Storage Project marketing area. The utilities with which contracts are in effect consist of Arizona Public Service Company, Public Service Company of Colorado, Public Service Company of New Mexico, Pacific Power and Light Company, Utah Power and Light Company, California-Pacific Utilities Company, Colorado-Ute Electric Association, and Salt River Project Agricultural Improvement and Power District.

The contract with the Utah Power and Light Company contains wheeling arrangements under which preference customers receive storage project power over the facilities of the company. The contract with California-Pacific Utilities Company also provides for use of company facilities for wheeling.

Under agreements with Arizona Public Service Company, Pacific Power and Light Company, and Public Service of Colorado, the Bureau and the companies are coordinating the use of transmission facilities to provide for the interchange and transmission of power. The contracts with Colorado-Ute and Salt River provide for interconnection of facilities, interchange of electric power and energy, and for wheeling of power and energy by the United States for these two organizations.

In addition to the interconnection with the utilities, the storage project is also interconnected in Colorado and Wyoming to the Bureau's Western Missouri River Basin Project transmission system and in Arizona to the Bureau's Parker-Davis Project transmission system.

D.3 Powerplants and Reservoir Capacity

The installed powerplant nameplate capacity (in MW), the maximum and the live reservoir storage capacity (in acre-feet), respectively, for the following four storage units are:

		Maximum	Live
		(1000)	(1000)
	MW	Acre-Feet	Acre-Feet
Glen Canyon, Arizona-Utah	950	27,000.0	25,000.0
Flaming Gorge, Utah-Wyoming	108	3,788.9	3,749.0
Navajo, New Mexico-Colorado	0	1,708.6	1,696.0
Curecanti, Colorado	180	1,085.2	
	1238	33,582.7	

Comparable total figures for the 21 participating projects (10 of which were authorized by the CRSP Act of April 11, 1956, and 11 by subsequent acts of Congress) are 10 MW (Seedskadee) and 3,499,100 acre-feet. Additional powerplant capacity is authorized but not yet constructed; e.g., 133,500 kW of power on the Bonneville Unit of the Central Utah Project and a 23 MW powerplant is being planned at the Navajo Dam (see pages 65 and 81, Twenty-Eighth Annual Report of the Upper Colorado River Commission, September 30, 1976).

D.4 Participating Projects

The authorized participating projects are:

<u>Name</u>	<u>Completed</u>	<u>Location</u>
Paonia	January 1962	Colorado
Smith Fork	Fall 1962	Colorado
Florida	November 1963	Colorado
Silt	June 1967	Colorado
Fryingpan, Arkansas	97 percent complete 1976	Colorado
Fruitland Mesa	-	Colorado
Bostwick Park	-	Colorado
Dallas Creek	-	Colorado
Dolores	-	Colorado
San Miguel	-	Colorado
West Divide	-	Colorado
Animas-LaPlata	-	Colorado and New Mexico
Savory-Pot Hook	-	Colorado and Wyoming
Hammond	1962	New Mexico
Navajo Indian Irrigation	-	New Mexico
San Juan Chama	-	New Mexico
Central Utah		
Vernal Unit	1962	Utah
Bonneville Unit	1962	Utah
Upalco Unit	1962	Unit
Uinto Unit	1962	Utah
Jenson Unit	1962	Utah
Emery County	1966	Utah
Lyman	-	Wyoming
Seedskaadee	1964	Wyoming
Eden	1960	Wyoming

D.5 CRSP Power Rates

Public Law 84-485, which authorized the Colorado River Storage Project and participating projects on April 11, 1956, specifies that all reimbursable costs must be repaid within 50 years after the completion of each separable feature, with the provision that the irrigation features of a participating project may have a development period of up to 10 years.

Power rate schedule R4-F1, with demand restrictions for the summer and winter seasons, was established on March 6, 1962, with a \$1.275/kW per month demand rate and 3 mills/kWh energy rate, averaging 6 mills/kWh at a load factor of 58.2 percent, the maximum load factor of the firm energy that the Bureau then contracted for.

A repayment study based on the July 1972 projections of future investment and operating costs indicated that the 6 mill rate no longer met the repayment requirements. The principal reasons for the lack of sufficient revenues appeared to be the increases in operation and maintenance costs, the fact that the water supply has been considerably below average, except for 3 years, since the initial inservice date of the first power feature, the higher than expected cost of firming energy purchases, and the steadily rising price levels which result in higher than expected future investment costs.

On June 1, 1977, Schedule UC-F2 became effective, superseding Schedule UC-F1 and the old rate R4-F1. It established the following monthly rates:

Capacity charge:	\$1.34/kW of billing demand
Energy charge:	3.4 mills/kWh

D.6 Reallocation of CRSP Power

On September 21, 1975, the Department of the Interior approved new allocations of CRSP power for both Northern and Southern Division CRSP customers (part of the Southern Division includes Parker-Davis Project customers) and for the Parker-Davis Project customers. The allocations were substantially in accordance with Interior's proposal of March 20, 1975, 40 F.R. 66, pages 15101-15104.

Prior to the reallocation, the CRSP power available to Southern Division customers was 213,350 kW during the summer season. The largest single summer allocation was 101,900 kW to the Salt River Project. The second and third largest allocations were 28,500 kW to Nevada's Division of Natural Resources and 12,300 kW to the Arizona Electric Power Cooperative. The remaining 70,650 kW was divided among 23 customers in quantities ranging from 200 to 10,400 kW.

Of the 60,750 kW of CRSP power available during the winter season, the largest allocations were 29,550 kW to Salt River Project, 12,450 kW to Nevada and 5,850 kW to Arizona's Electrical District No. 2. The remaining 12,900 kW was divided among 22 customers in quantities ranging from 10 to 2,100 kW.

The reallocation of September 21, 1975, divided 240,000 kW during the summer season and 84,000 kW during the winter season. In addition to generally larger allocations to the 26 prior customers, one new customer was added, the Ak-Chin Indian Community.

Short-term allocations to Queen Creek Irrigation District and San Tan Irrigation District were extended.

The reallocation of 84,000 kW during the winter season went to the existing 25 customers with only the Ak-Chin Indian Community receiving a new allocation of 3,300 kW.

In addition to the 213,350 kW of summer allocation and the 60,760 kW of winter allocation, there were available to Southern Division customers an additional 26,650 kW and 23,240 kW during the summer and winter seasons, respectively. These additional kW's were originally allocated to preference customers but not placed under contract with those preference customers to whom they were allocated.

In 1975 these additional kW's were reallocated to the preference contractors and to a single new preference customer, the Ak-Chin Indian Community.

Lists of the CRSP customers (and the Parker-Davis customers) for both the summer and winter seasons before and after reallocation are set out in the chapter dealing with reallocation of the Parker-Davis Project power and are not repeated here.

The background and reasons for the reallocation are set out in a memorandum of August 20, 1975, from the Commissioner of Reclamation to the Secretary of the Interior.

Firm Electric Service Contracts

Contract offers were made to all entities in the Southern Division which received an allocation of CRSP firm power on September 24, 1975, from the Secretary of the Interior.

There are 25 CRSP contracts (including the Arizona Power Pooling Association (APPA) integrated contract) of which 14 were signed as of July 1, 1977, and 11 had not been signed (six are litigants in the Arizona Power authority (APA) withdrawal suit.) Seven Letter Agreements were signed as of July 1, 1977.

D.7 CRSP Withdrawal Suits

A lawsuit in opposition to the withdrawal of CRSP power was filed by Arizona Power Authority, Electrical District No. 3, Electrical District No. 4, Electrical District Number 5, Pinal County, Electrical District Number 6, Wellton-Mohawk Irrigation and Drainage District, Roosevelt Irrigation District, and the City of Safford, in December 1971. At a later date Electrical District Number Two intervened on behalf of APA, et al., and the Northern Division Power Association intervened on behalf of the United States.

In March 1975, a decision was rendered in favor of the United States. In September 1975, an appeal was filed by the Plaintiffs. The first hearing of the appeal was held December 19, 1975. The Plaintiffs still contend that the Secretary was not acting within his authority when he made an allocation which contained a preference based on geographical boundaries.

In March 1976, the Plaintiffs requested an injunction against withdrawal of the Southern Division CRSP power and energy pending a final decision on the court action. The request for injunction was granted, subject to the posting of a bond to cover the cost to Reclamation of purchasing energy to meet the increased commitments. CRSP had sufficient capacity to meet the increased commitment. Maricopa County Municipal Water Conservation District (MCMWCD) Number One, filing for intervention, has been rejected. MCMWCD subsequently filed a separate suit.

As of this writing, the Circuit Court of Appeals has ruled in favor of the Bureau. The Plaintiffs moved for a Writ of Certiorari from the Supreme Court, but this was denied.

Following creation of the United States Department of Energy on October 1, 1977, the CRSP power contracts were transferred to its Western Area Power Administration (WAPA) by Interior for administration.

D.8 Summary of Energy Deliveries and Income - Fiscal Years 1976, 1977

The following illustrates the kWh sales of CRSP power to Parker-Davis customers and the income therefrom for the 12-month period ending June 30, 1976.

<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
<i>Sales to Municipalities</i>			
City of Safford (Cochise)	12,907,973	72,443.33	5.61
Town of Thatcher (Cochise)	2,598,170	15,575.96	5.99
Ak-Chin Indian Community	5,595,258	34,605.78	6.18
Total	21,101,401	122,625.07	5.81
<i>Sales to Other Agencies of State Government</i>			
Arizona Power Pooling Association	223,232,637	1,289,651.77	5.78
Div. of Colorado River Resources	81,990,295	624,820.41	7.62
Imperial Irrigation District	59,686,707	311,079.93	5.21
Imperial Irrigation District	21,435,000	257,220.00	12.00
Salt River Project	231,130,306	1,775,460.92	7.68
Salt River Project	239,875,000	2,988,931.32	12.46
Wellton-Mohawk IDD	6,587,676	51,588.23	7.83
Arizona Power Authority	1,800,000	20,000.00	11.11
Total	865,737,621	7,318,752.58	8.45
<i>Sales to Rural Cooperatives</i>			
Chandler Heights Citrus Irr. District	1,225,679	7,241.04	5.91
Chandler Heights Citrus Irr. District	120,000	1,440.00	12.00
ED-3 Pinal County (APS)	67,543,981	377,109.54	5.58
ED-3 Pinal County (APS)	18,570,000	222,840.00	12.00
ED-4	23,347,590	140,253.57	6.01
ED-5 Pinal County	13,797,939	78,433.02	5.68
ED-5 Maricopa County	5,086,545	29,713.64	5.84
ED-6 Pinal County (SRP)	76,650,000	427,950.00	5.58
ED-6 Pinal County (SRP)	5,000,000	60,000.00	12.00

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<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
ED-7 Maricopa County (APS)	14,010,493	83,017.48	5.93
ED-7 Maricopa County (APS)	6,000,000	72,000.00	12.00
Littlefield Elec. Cooperative	975,400	5,764.20	5.91
Maricopa Co. Water Conserv. Dist. 1 (APS)	38,553,239	212,085.72	5.50
Ocotillo Power Coop., Inc.	4,019,531	25,403.79	6.32
Queen Creek Irr. District	8,080,726	48,026.50	5.94
Queen Creek Irr. District	515,000	6,180.00	12.00
Roosevelt Water Conserv. District	11,752,165	71,688.50	6.10
Roosevelt Irrigation District	19,974,990	111,523.78	5.58
San Tan Irrigation District	2,978,172	17,468.32	5.87
San Tan Irrigation District	150,000	1,800.00	12.00
Total	318,360,450	1,999,939.10	6.28
<i>Other Agencies of the Federal Government</i>			
Colorado River Indian Reser.	41,052,316	270,012.23	6.58
San Carlos Project	83,138,195	662,562.38	7.97
San Carlos Project	4,500,000	54,000.00	12.00
Total	128,690,511	986,574.61	7.67
<i>Privately Owned Facilities</i>			
Nevada Power Company	98,642,000	1,783,616.93	18.08
Arizona Public Service Company	180,298,000	2,613,550.43	14.50
Southern California Edison Company	71,468,000	714,980.00	10.00
Total	350,408,000	5,112,147.36	14.50
<i>Other Sales to Public Authorities</i>			
U.S. Department of Defense, WAFB	29,462,800	162,176.40	5.50
U.S. Department of Defense, YPG	2,666,391	25,024.30	9.37
Total	32,132,191	187,200.70	5.83
TOTAL FIRM SALES	1,068,057,174	6,930,680.74	6.49
TOTAL NONFIRM SALES	648,373,000	8,796,558.68	13.57

In addition to the above total firm sales of 1,068,057,174 kWh resulting in an income of \$6,930,680.74 and total nonfirm sales of 648,373,000 kWh and an income of \$8,796,588.68, there were interchanges and other deliveries (including 199,148,400 kWh for Hoover deficiencies) during this period making a "Grand Total Power Sales" of 2,102,258,475 kWh and an increase of \$172,344 in income for a total of \$15,899,583.23.

Data comparable to that for fiscal year 1976 follows for fiscal year 1977 (12 months ending September 30, 1977).

<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
<i>Sales to Municipalities, Towns and Villages</i>			
Ak-Chin Indian Comm. - 2637	17,985,710	119,195.99	6.63
City of Mesa - 2661	16,539,787	104,449.72	6.32
City of Safford - 2653	8,842,375	54,510.79	6.16
Town of Thatcher - 2657	1,928,081	12,935.45	6.71
Total	45,295,953	291,091.95	6.43
<i>Sales to Other Agencies of State Government</i>			
Chandler Heights Citrus Irr. D - 2638	1,538,214	10,137.51	6.59
DCRR - 2640	123,675,000	779,502.79	6.30
ED-2 - 2661	36,927,070	230,390.60	6.24
ED-3 (APS) Pinal - 2641	27,024,222	176,175.73	6.52
ED-4 Pinal - 2642	19,209,700	127,408.84	6.63
ED-5 Maricopa - 2643	6,622,900	42,371.81	6.40
ED-5 Pinal - 2644	13,151,184	84,127.56	6.40
ED-6 (SRP) Pinal - 2645	17,467,500	111,870.35	6.40
ED-7 Maricopa - 2646	15,302,308	99,188.37	6.48
Maricopa Co. Water Conserv. Dist. 1 - 2648	19,563,088	125,874.57	6.43
Ocotillo WC Dist - 2650	4,059,249	28,238.49	6.96
Queen Creek Irrig. District - 2649	5,100,000	32,700.80	6.41
Roosevelt Irrig. District - 2651	16,618,056	108,109.79	6.51
Roosevelt Water Conserv. District - 2652	9,690,000	61,278.33	6.32
Salt River Project - 2654	381,285,000	2,420,069.09	6.35
San Tan Irrigation District - 2656	2,422,500	15,550.21	6.42
Wellton-Mohawk Irrig. Dist. - 2658	1,693,726	23,784.95	14.04
Ariz. Power Pooling Assn.	14,220,078	84,953.04	5.97
Total	715,569,795	4,561,732.83	6.37
<i>Sales to Rural Cooperatives</i>			
AEP Coop - 2661 (APPA)	37,584,177	239,909.80	6.38
Littlefield Elec. Coop. - 2647	968,788	6,268.67	6.47
Total	38,552,965	246,178.47	6.39
<i>Sales to Other Agencies of Federal Government</i>			
Colorado River Indians - 2639	2,444,470	14,498.67	5.93
San Carlos Indians - 2655	7,395,000	46,647.88	6.31
Total	9,839,470	61,146.55	6.21

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Contractor	INCOME		
	Energy Sales kWh	Net Amount	Mills Net Per kWh
<i>Other Sales to Public Authorities</i>			
U.S. Dept. of Defense WAFB-2659	7,190,637	47,739.43	6.64
U.S. Dept. of Defense YPG-2660	1,613,072	11,639.70	7.22
Total	8,803,709	59,379.13	6.74
TOTAL FIRM SALES	818,061,892	5,219,528.93	6.38

In addition to the "Total Firm Sales" of 818,061,892 kWh and an income of \$5,219,528.93, there were interchanges and other deliveries and sales during this period making a "Grand Total Power Sales" of 1,805,247,216 kWh which did not change the above income figures.

However, there was other income (including \$575,504.53 paid under protest and carried in a suspense account) of \$417.97, \$7,200.82, and \$574,750.12, in addition to the aforementioned income of \$5,219,528.93 during fiscal year 1977.

E. Navajo Project

E.1 Background

The Navajo Project (or Navajo Generating Station and Transmission System) was developed as a result of the authorization of the Central Arizona Project (CAP) as a part of the Colorado River Basin Project Act, Public Law 90-537, dated September 30, 1968, 82 Stat. 885.

CAP requires the pumping of water from the Colorado River some 200 miles to the Phoenix area and an additional 100 miles to the Tucson area. For that purpose an annual average quantity of 1.2 million acre-feet would be pumped from Lake Havasu behind Parker Dam, which alone involves an initial lift of approximately 800 feet, and a total pump lift of 1,200 feet to the Phoenix area, and would require approximately 500,000 kW of power. The failure of the proponents of CAP to obtain Congressional authorization of new hydroelectric projects, such as Bridge Canyon and Marble Canyon Dams, due to concern over the impact of the scenic qualities of the Grand Canyon and other environmental factors, forced consideration of other alternatives to obtain the needed energy. The most promising was Federal acquisition of a share of the generating capacity in a large thermal plant to be constructed by a group of public and private utilities.

Hence: Section 303 of the Colorado River Basin Project Act provided:

"Sec. 303. (a) The Secretary is authorized and directed to continue to a conclusion appropriate engineering and economic studies and to recommend the most feasible plan for the construction and operation of hydroelectric generating and transmission facilities, the purchase of electrical energy, the purchase of entitlement to electrical plant capacity, or any combination thereof, including participation, operation, or construction by non-Federal entities, for the purpose of supplying the power requirements of the Central Arizona Project and augmenting the Lower Colorado River Basin Development Fund: *Provided*, That nothing in this section or in this Act contained shall be construed to authorize the study or construction of any dams on the main stream of the Colorado River between Hoover Dam and Glen Canyon Dam.

"(b) If included as a part of the recommended plan, the Secretary may enter into agreements with non-Federal interests proposing to construct thermal generating powerplants whereby the United States shall acquire the right to such portions of their capacity, including delivery of power and energy over appurtenant transmission facilities to mutually agreed upon delivery points, as he determines is required in connection with the operation of the Central Arizona Project. When not required for the Central Arizona Project, the power and energy acquired by such agreements may be disposed of intermittently by the Secretary for other purposes at such prices as he may determine, including its marketing in conjunction with the sale of

power and energy from Federal powerplants in the Colorado River system so as to produce the greatest practicable amount of power and energy that can be sold at firm power and energy rates. The agreements shall provide, among other things, that—

“(1) the United States shall pay not more than that portion of the total construction cost, exclusive of interest during construction, of the powerplants, and of any switchyards and transmission facilities serving the United States, as is represented by the ratios of the respective capacities to be provided for the United States therein to the total capacities of such facilities. The Secretary shall make the Federal portion of such costs available to the non-Federal interests during the construction period, including the period of preparation of designs and specifications, in such installments as will facilitate a timely construction schedule, but no funds other than for preconstruction activities shall be made available by the Secretary until he determines that adequate contractual arrangements have been entered into between all the affected parties covering land, water, fuel supplies, power (its availability and use), rights-of-way, transmission facilities and all other necessary matters for the thermal generating powerplants;

“(2) annual operation and maintenance costs shall be apportioned between the United States and the non-Federal interests on an equitable basis taking into account the ratios determined in accordance with the foregoing clause (1): *Provided, however,* That the United States shall share on the foregoing basis in the depreciation component of such costs only to the extent of provision for depreciation on replacements financed by the non-Federal interests;

“(3) the United States shall be given appropriate credit for any interests in Federal lands administered by the Department of the Interior that are made available for the powerplants and appurtenances;

“(4) costs to be borne by the United States under clauses (1) and (2) shall not include (a) interest and interest during construction, (b) financing charges, (c) franchise fees, and (d) such other costs as shall be specified in the agreement.

“(c) No later than one year from the effective date of this Act, the Secretary shall submit his recommended plan to the Congress. Except as authorized by subsection (b) of this section, such plan shall not become effective until approved by the Congress.

“(d) If any thermal generating plant referred to in subsection (b) of this section is located in Arizona, and if it is served by water diverted from the drainage area of the Colorado River system above Lee Ferry, other provisions of existing law to the contract notwithstanding, such consumptive use of water shall be a part of the fifty thousand acre-feet per annum apportioned to the State of Arizona by article III (a) of the Upper Colorado River Basin Company (63 Stat. 31).”

In June 1968, the Secretary of the Interior met with representatives of various utilities which had expressed an interest in additional electric generating capacity in the Southwest (see elaboration herein on the negotiations leading up to the execution of Contracts for the Interim Sale of United States Entitlement of Navajo Project).

On September 30, 1969, the Secretary filed with Congress a report required by the Colorado River Basin Project Act, advising Congress of his findings that participation in the Navajo Project represented the most suitable alternative for supplying the power requirements of CAP.

The site of the Navajo Generating Station near Page, Arizona, was selected for the following reasons:

- (1) it was approximately 80 miles from a reliable coal supply on the Black Mesa on the Hopi and Navajo Indian Reservations;
- (2) Cooling water was available from nearby Lake Powell;
- (3) It was near the town of Page, Arizona, and its support facilities; and
- (4) It was close to load centers in Arizona, Nevada, and southern California to minimize transmission costs.

E.2 Physical Features

The Navajo Project consists of: the 2,310 MW *Navajo Generating Station* whose construction started in April 1970 on land leased from the Navajo Tribe near Page, Arizona. Its major feature (three units - each 750,000 kW (nameplate rating) coal fired steam electric generating units, were completed May 1974, 1975, and 1976, respectively); the *Black Mesa and Lake Powell Railroad*, constructed by the Project, which delivered coal mined by Peabody Coal Company from Reservation lands leased from the Navajo and Hopi

Tribes; the *Southern Transmission System*, two 500-kV transmission lines which connect the generating station with the Westwing Switchyard in the Phoenix Area; and the *Western Transmission System*, a single 500-kV line, which connects the generating station with the McCullough Switchyard of the Department of Water and Power of the City of Los Angeles in the Las Vegas area.

The Bureau of Reclamation is a participant in the Navajo Project pursuant to Section 303 of the Colorado River Basin Project Act (82 Stat. 885) dated September 30, 1968, and the determination by the Secretary of the Interior that such participation is the most practicable means of supplying the power requirements of the Central Arizona Project and augmenting the Lower Colorado River Basin Development Fund. The Central Arizona Project, consisting of pumping plants, canals, dams and holding reservoirs, is designed to deliver water from Lake Havasu behind Parker Dam on the Colorado River to the Phoenix and Tucson areas.

E.3 Participants

The participants in the project and their percentages of participation are as follows:

	<u>Percentage of Participation</u>	<u>Approx. Kilowatts to be Received</u>
Salt River Project ¹	21.7	501,000
Los Angeles Dept. of Water & Power ²	21.2	490,000
Arizona Public Service Co. ³	14.0	323,000
Nevada Power Co. ⁴	11.3	261,000
Tucson Gas & Electric Co.	7.5	173,000
Bureau of Reclamation ⁵	24.3	561,000
(The only Federal participant)		

¹The Salt River Project is Project Manager and Operating Agent for the Navajo Generating Station.

²The Los Angeles Department of Water & Power is Project Manager for the Western Transmission System and Operating Agent for the McCullough Substation of the Western Transmission System.

³The Arizona Public Service Company is Project Manager and Operating Agent for the Southern Transmission System.

⁴The Nevada Power Company is Operating Agent for the Navajo-McCullough 500-kV line of the Western Transmission System.

⁵Salt River Project, in addition to owning 21.7 percent in its own name, owns 24.3 percent of the generating station and railroad and varying percentages of the features of the transmission systems for the use and benefit of the United States.

E.4 Navajo Project Documents and Contracts

The basic contractual framework for the project is as follows.

(1) The Indenture of Lease, Navajo Units, 1, 2 and 3, among the Navajo Project Cotenants (the participants other than the United States) and the Navajo Tribe, dated as of September 29, 1969. The Indenture of Lease provides the land and land rights for the plantsite, pumping plantsite, rail loading site, and ash disposal area, transmission communication, railroad rights-of-way on Navajo Reservation lands and related rights.

The Lease provides for a term of 50 years with an option to extend for an additional 25 years at an annual rental of \$90 an acre, subject to adjustment. The annual rental for the plantsite, rail loading site, and ash disposal area is \$160,000 a year.

The Lease covers air and water pollution; e.g., precipitators must have a design efficiency of 99.5 percent, the Tribe's consent that the 34,100 acre-feet of water from Arizona's Upper Basin allocation of 50,000 acre-feet shall be available for station uses, and preference in employment to qualified Navajos. During the first 35 years of its term the Tribe is not to impose taxes and thereafter it may impose taxes at a rate not in excess of one-half of the amount of property taxes imposed by the State of Arizona. Coverage is provided in the event the State of Arizona is found to be without authority to tax property located on the Reservations.

(2) Grant of Right-of-Way and Easements, with the consent of the Tribe, pursuant to 25 U.S.C. Sec. 323, from the Secretary of the Interior to the Navajo Project Cotenants, dated December 10, 1969, for the plantsite, rail loading site, ash disposal area, and related facilities, approved January 19, 1971.

(3) Contract for Water Service from Lake Powell for the Generating Station, between the United States and Salt River Project, dated January 17, 1969, No. 14-06-300-5033. It provides that the Salt River Project may divert up to 40,000 acre-feet a year from Lake Powell and may consumptively use up to 34,100 acre-feet a year in the Generating Station at an annual charge of \$7 per acre-foot. A 40-year term is provided, with options to extend. The Navajo Tribal Council has enacted two resolutions relating thereto, CD 108-68, dated December 11, 1968, and CJW-69, dated June 3, 1969. The contract was assigned by the Salt River Project to the other non-Federal participants on December 22, 1969.

(4) Navajo Project participation agreement, No. 14-06-300-2131, among the Navajo Project Cotenants and the United States, dated as of September 30, 1969. This agreement sets forth the ownership interests in the Generating Station and the Transmission System. It covers the relationship between the Salt River Project and the United States and requires the consent of the United States to all Project agreements which the Salt River Project may enter into where the United States is not a party; sets the basic terms and conditions and the obligations of the parties for construction, operation and maintenance of the Navajo Project; and may be superseded, in whole or in part, by subsequent project agreements.

The Participation Agreement provides that if the Salt River Project should incur any liability or burden because of its relationships with the United States, they shall be shared among all the coowners on the basis of their ownership interests in the Generating Station. It also provides clauses with regard to defaults, resolution of disputes, insurance coverages, and the division of any liabilities due to property damage or personal injuries which may exceed or may not be covered by the insurance required.

The term of the Participation Agreement is for the period needed for completion of all the Project agreements or, lacking completion, for a 50-year term.

(5) Contracts dated September 30, 1969, between the United States and each of the cotenants and between the United States and Southern California Edison Company for "Interim Sales of United States Entitlement in the Navajo Project." These contracts, which are listed below and are also termed "layoff contracts," dispose of the United States Navajo Project entitlement of power and energy through September 30, 1989, subject to termination by the United States upon 5 years written notice effective on or after January 1, 1980, if the power and energy sold thereunder is required by the United States for the other purposes of the Colorado River Basin Project Act. The background and scope of these contracts are more fully covered hereinafter.

Contracts for "Interim Sales of United States Entitlement
in the Navajo Project"
(Layoff Contracts)

<u>Contract No.</u>	<u>Contractors</u>	<u>Percentage of U.S. Entitlement</u>	<u>*Capacity</u>
No. 14-06-300-2136	Salt River Project	19.6%	for 107.2 MW
No. 14-06-300-2137	Arizona Public Service Company	3.0%	for 16.4 MW
No. 14-06-300-2134	Nevada Power Co.	2.5%	for 13.7 MW
No. 14-06-300-2138	Tucson Gas & Electric Company	1.6%	for 8.7 MW

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Contracts for "Interim Sales of United States Entitlement in the Navajo Project" (Layoff Contracts)

<u>Contract No.</u>	<u>Contractors</u>	<u>Percentage of U.S. Entitlement</u>	<u>*Capacity</u>
No. 14-06-300-2133	City of Los Angeles Dept. of Water & Power	13.4%	for 73.3 MW
No. 14-06-300-2135	So. Cal. Edison Co.	59.0%	for 327.5 MW
		100.0%	for 546.8 MW

*Based on nameplate capacity of 750 MW per unit.

(6) Memorandum for Recordation of Navajo Station Coal Supply Agreement and Imposition of Equitable Servitude and Covenant Running with the Land, dated December 1, 1970, and Navajo Station Coal Supply Agreement, dated September 30, 1969, between the Navajo Project Cotenants and Peabody Coal Company, providing for a coal supply for the Generating Station for a term of 35 years subject to extension by the Cotenants for up to an additional 15 years conditioned upon Peabody having adequate reserves of suitable coal available at its Black Mesa Mine 80 miles away. Approximately 234 million tons of strip reserves and 34 million tons of deep reserves were dedicated by Peabody Coal Company to the Navajo Project. The Coal Supply Agreement was amended February 18, 1977, to provide greater assurance of a coal supply and increased prices. The failure of Peabody Coal to provide the quantities of coal needed to operate the project at its full capacity led to damage claims and several contracts for the purchase of supplemental coal. However, Peabody is expected to have adequate equipment at its coal mine in 1978 to deliver adequate coal for three unit operations at the Generating Station.

(7) Grant of Federal Rights-of-Way and Easements pursuant to 25 U.S.C. Sec. 323, dated January 19, 1971, from the Under Secretary of the Interior to the Navajo Project Cotenants for the railroad and related facilities.

(8) Power Coordination Contract, No. 14-06-300-2132, dated as of September 30, 1969, among the Navajo Project participants. This contract sets the method of determining rates for sales, purchases, and exchanges of energy between the parties. The United States waived its usual "wheeling stipulation."

(9) Interim Arrangement for Interconnected Operations, No. 14-06-300-2139, dated as of September 30, 1969, among the Navajo Project participants and Southern California Edison Company. This Agreement covers forecast capacity resources margins, spinning reserve capacity, emergency service, interruptible load as a substitute for spinning reserve capacity, and system operations.

(10) Multiparty Agreement dated December 1, 1970, among the Navajo Project Cotenants, Peabody Coal Company, Green River Coal Company, C. Chesney McCracken and Frank J. Keller, as trustees, St. Louis Union Trust Company, and Morgan Guaranty Company. This Agreement embodies certain understandings of the parties in the event of a default by Peabody under the Navajo Project Coal Supply Agreement.

(11) Cotenancy Agreement dated March 23, 1976, No. 14-06-300-2271, the basic title agreement between the participants. This established the terms and conditions relating to the respective interests and obligations of the parties.

(12) Southern Transmission System Construction Agreement between the participants dated March 23, 1976, No. 14-06-300-2272. Arizona Public Service Company was named Project Manager.

(13) Western Transmission System Construction Agreement between the participants dated March 23, 1976, No. 14-06-300-2273.

(14) Navajo Generating Station Construction Agreement between the participants dated March 23, 1976, No. 14-06-300-2274. Salt River Project was named Project Manager.

(15) Edison-Navajo Transmission Agreement, dated May 21, 1973, No. 14-06-300-2299, between the participants and southern California Edison Company. This covers the interconnection of the Navajo Transmission System with the 500 kV transmission line from Four Corners to the Mohave Project of the Moenkopi switching station and the operation of the two 500 kV transmission lines. It also covers installation of series capacitors on the Navajo-McCullough 500-kV transmission line and the Moenkopi-Eldorado 500-kV transmission line.

The following contracts have been completed in draft form:

(a) East Wing - West Wing Rights-of-Way Agreement. The principles for interconnection of the United States Navajo Project West Wing facilities with the 230-kV Liberty-Pinnacle Peak transmission facilities and the principles for necessary amendments to existing contracts have been informally agreed to with Salt River Project;

(b) Navajo Generating Station Operating Agreement;

(c) Southern Transmission System Operating Agreement;

(d) Western Transmission System Operating Agreement;

(e) Interconnection Agreement, Four Corners - Navajo-Mohave. Draft is in substantially final form but execution has been postponed indefinitely due to basic disagreement regarding Bureau of Reclamation reserves; policy question remains as to whether the Bureau of Reclamation will agree to a mutual release of liability provision.

E.5 Litigation

The Navajo Project has given rise to the following litigation:

(1) *The Jicarilla Apache Tribe of Indians et al. v. Morton et al.*, consolidated with *National Wildlife Federation et al. v. Morton et al.*, Civil No. 71-566-PHX-WCF (D.C. Ariz.), alleging violation of the National Environmental Policy Act, 42 U.S.C. Sections 4321 et seq. The District Court held for the defendants. Oral argument of Plaintiffs' appeal to the Ninth Circuit was held on July 13, 1972.

(2) *Lomayaktewa et al. v. Morton et al.*, Civil No. 72-106 PCT-WCF (D.C. Ariz.), attacking the validity of the Black Mesa strip mining lease between Peabody Coal Company and the Hopi Tribe. This action, originally filed in the District of Columbia, was transferred to the United States District Court for the District of Arizona on March 3, 1972.

(3) *Arizona Power Pooling Association et al. v. Morton et al.*, Civil No. 72-125-PCT-WPC, filed in August 1971, challenging the validity of the contracts for interim sale of the United States Navajo Project entitlement to Southern California Edison Company, Nevada Power Company, and Tucson Gas and Electric Company, all nonpreference customers. Arizona Power Authority Intermountain Consumer Power Association, and Bountiful, Utah, have intervened on behalf of the Plaintiff.

The District Court held in favor of the United States. Plaintiff's appeal was heard in September 1975. The Appellate Court reversed the District Court and remanded the case for further proceedings.

A clarification of the order was requested and issued in December 1975. A Petition for a Writ of Certiorari, filed by the Private Utility Defendants with the Supreme Court, was, however, denied. In the meantime, the Plaintiffs are exploring the possibility of arriving at a settlement with the nonpreference layoff contractors.

The City of Anaheim filed for an injunction against the sale of United States entitlement power to Edison Company pending resolution of existing court actions. The preliminary injunction was denied, but the Plaintiffs have appealed the decision.

A similar suit has been filed by the cities of Riverside, Anaheim and Banning, California. The court has delayed review of this suit pending final action on the APPA suit.

E.6 Committees

The Navajo Project participants (includes the United States) established two major committees. These were a Legal and Negotiating Committee, composed of their legal, engineering, and administrative represent-

atives, which drafted the foregoing agreements, and the Coordinating Committee, composed of the heads of the respective groups or their representatives, which establishes policy for the Project.

E.7 Department of Energy

Creation of the new United States Department of Energy on October 1, 1977, which absorbed a portion of Reclamation's power and energy functions, led to a division of authority in administering Interior's power contracts. The Navajo Project basic agreements remained with Interior, although Reclamation's contracts for the interim sale of the United States entitlement in the Navajo Project (also termed "layoff contracts") and the Navajo power coordination contract became the responsibility of the Department of Energy, Western Area Power Administration.

E.8 Navajo Project Precipitators

Work is continuing on improving the performance of the precipitators. The State of Arizona is requiring additional air quality monitoring and reports when the State standards are exceeded. SRP is continuing to work with the precipitator manufacturer and consultants to bring the precipitator and performance and availability up to acceptable standards.

Still unresolved is whether the Environmental Protection Agency (EPA) and the State of Arizona will require installation of additional equipment for the control of SO₂. Monitoring performed jointly by EPA and SRP indicated that both Federal and State standards have been met with the use of the existing installed equipment. Neither EPA nor the State of Arizona has officially advised SRP that additional equipment will not be required.

E.9 Review of Negotiations and Circumstances Leading Up To The Execution of the Contracts for Interim Sale of United States Entitlement of Navajo Project

The Colorado River Basin Project Act, Public Law 90-537, dated September 30, 1968, authorized the construction, operation, and maintenance of the Central Arizona Project. With regard to a power supply for operation of the project, Section 303(b) provided as follows:

"If included as a part of the recommended plan, the Secretary may enter into agreements with non-Federal interests proposing to construct thermal generating powerplants whereby the United States shall acquire the right to such portions of their capacity, including delivery of power and energy over appurtenant transmission facilities to mutually agreed upon delivery points, as he determines is required in connection with the operation of the Central Arizona Project. When not required for the Central Arizona Project, the power and energy acquired by such agreements may be disposed of intermittently by the Secretary for other purposes at such prices as he may determine, including its marketing in conjunction with the sale of power and energy from Federal powerplants in the Colorado river system so as to produce the greatest practicable amount of power and energy that can be sold at firm power and energy rates."

Negotiations looking toward contractual arrangements for the purchase of entitlement to electric power and transmission capacity in non-Federal facilities were initiated in June 1968 with Secretary of the Interior Udall. Public and private utilities in the Southwest were invited to participate, and a steering committee was formed consisting of a representative from each interested utility and the Bureau of Reclamation. The initial non-Federal parties were: San Diego Gas & Electric Company; Southern California Edison Company (SCE); Department of Water and Power of the City of Los Angeles (LADWP); Nevada Power Company; Salt River Project Agricultural Improvement and Power District (SRP); Arizona Public Service Company (APS); Tucson Gas and Electric Company (TG&E); El Paso Electric Company; and Public Service Company of New Mexico. While others attended the June meeting, the above group constituted the core of those interested.

The steering committee, through several task forces, studied the problems involved in the construction and operation of the power generation and transmission facilities, including design, costs, legal and tax considerations, coal leases and other property agreements, socioeconomic aspects, loads and resources.

At this point, the proposed project consisted of two powerplants, one near Page, Arizona (Navajo), and one near Farmington, New Mexico (Four Corners), with six 820 MW units and a total capacity of 4,920 MW.

In February 1969, the El Paso Electric Company and the Public Service Company of New Mexico decided not to participate in the joint project. This decision necessitated modification of the initially contemplated development. Negotiations continued.

Efforts were made to reach preference customers who might be interested and offer them a chance to participate. These included: Intermountain Consumer Power Association, Salt Lake City, Utah; City of Farmington, New Mexico; City of Anaheim, California; Arizona Power Authority, Phoenix, Arizona; Plains Electric B & T Cooperative, Albuquerque, New Mexico; and Rawlins, Ellis, Burrus and Kiewit, Phoenix, Arizona.

In May 1969, the San Diego Gas & Electric Company and the Southern California Edison Company each decided that it did not desire to participate in the joint effort. This decision required a new look at the proposed joint development, since some 2,000 MW, or about 40 percent of the total generating capability, was destined for these two utilities.

A smaller joint participation project of 2,310 MW was proposed in June 1969, consisting of one powerplant near Page, Arizona (Navajo), with three units having an expected effective output of 770 MW each and a transmission system consisting of a 500-kV line from the plant to the Colorado River near Boulder City, Nevada, and two 500-kV lines to the Phoenix area. The City of Anaheim, California, and the Arizona Power Authority indicated an initial interest in the project, but decided later not to participate.

The participation by the United States in the Navajo Project provided the United States a share (24.3 percent) of the generation available from the Navajo Generating Station, and a share of the transmission facilities which were to be constructed as a part of the Navajo Project.

Under the terms and conditions of the contracts for participation in the Navajo Project, the availability of the United States share of generation was contingent upon the operation of the Navajo Generating Station. Under this condition, power is available only when the generating units are operating. Therefore, each utility participant had to make its own arrangements for reserves and for an alternate source of power during periods of time when the Navajo Generating Station units are out of service for maintenance or other reasons. Similarly, the ability to receive this power at the project delivery points which are located in Phoenix, Arizona, and the Boulder City, Nevada, areas is contingent on the operation of the Navajo Project transmission system. This contingent operation presents a similar requirement for each utility participant to provide its own reserves. In the event of an outage of the transmission system, the power being supplied from the Navajo Project may or may not be available to the participants. In the event delivery cannot be completed, a utility participant must have its own alternate power source to replace the Navajo generation.

The Navajo Project contracts also provide that when transmission capacity available to the participants is insufficient to accommodate all of the firm use of the transmission system, the use of available capacity will be allocated proportionately to each participant. This creates another situation which requires each utility to provide its own reserves.

Public Law 90-537, which was effective September 30, 1968, provided that the Secretary was to submit his recommended plan to the Congress within 1 year from the effective date of the Act, that is, by September 30, 1969. With this deadline in mind, Reclamation, in order to present a complete and viable proposal, was faced with the necessity of assuring contractual arrangements for the sale of the United States entitlement to Navajo Project during the period beginning with the April 1974 anticipated inservice date of Unit No. 1 of the Navajo Generating Station and ending with the estimated time of requirement for pumping power for the Central Arizona Project, which then was January 1980. It was necessary, therefore, to complete assured arrangements by September 30, 1969, with customers who would agree to take and pay for the United States share during the interim period, subject to the reserve and transmission requirements applicable to all participants.

The first draft of a Proposed Contract for the Sale of Interim Power for United States entitlement of Navajo Project was prepared by representatives of the Lower Colorado Region, Bureau of Reclamation, and by letter dated May 1, 1969, was distributed to the members of the Committee on Interim Use of United States Entitlement of Navajo-Four Corners Project.

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The second draft of Proposed Contract for the Sale of Interim Power dated July 22, 1969, was prepared by representatives of the Lower Colorado Region and was distributed to members of the Committee on Interim Use of the United States Entitlement of Navajo-Four Corners Project by memorandum dated July 23, 1969.

Other possible customers for the purchase of interim power, including preference customers, were canvassed. These included: Arizona Electric Power Cooperative, Inc. (AEPKO); Imperial Irrigation District (IID); El Paso Electric Company; R. W. Beck and Associates; Plains Electric G & T Cooperative, Inc.; and the Colorado River Commission of Nevada.

Because the availability of power and energy from the Navajo Project is contingent upon the operation of the generating units and the associated transmission system, the purchasers were required to provide reserves. Therefore, drafts of the contracts for interim sale were submitted to each preference customer having its own generation or an alternate source of power to provide such reserves, and which was accessible to adequate transmission network capable of delivering the power. The preference customers in this category were Los Angeles, Salt River, Imperial Irrigation District, Plains Electric, and AEPKO (a member of Plaintiff Arizona Power Pooling Association).

Except for LADWP, IID, and SRP, none of the above preference customers indicated positive interest in the proposal for the interim purchase of the United States entitlement. AEPKO did not respond at all. IID responded that it would be interested if economical and practical transmission arrangements could be developed, but the problems involved in working out such arrangements within the necessary time frame were insurmountable.

Because of the lack of response, except from the participants and SCE, a concerted effort was made to obtain sale contracts with the participants and with Southern California Edison Company.

The negotiations of the contracts for interim use of United States entitlement continued among representatives of APS, LADWP, NPC, SRP, SCE, TG&E, and USBR. The form of contract which was agreed upon by all representatives was prepared and distributed by letter dated October 2, 1969. The contract, in essentially the same form, was executed shortly thereafter by the purchasers. Each purchaser executed a separate contract with the United States. All of the contracts were then executed on behalf of the United States in December 1969, effective as of September 30, 1969.

E.10 Summary of Energy Deliveries and Income - Fiscal Year 1977

The following illustrates the kWh sales to the "layoff" contractors and the income therefrom for the 12-month period ending September 30, 1977.

<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
<i>Municipalities, Towns and Villages</i>			
City of Los Angeles Department of Water and Power (Contract No. 14-06-300-2133)	<u>479,111,000</u>	<u>\$ 5,867,509.18</u>	<u>12.15</u>
Total	479,111,000	5,867,509.18	12.25
<i>Other Agencies of State Governments</i>			
Salt River Project Agricultural Improvement and Power District (Contract No. 14-06-300-2136)	<u>698,193,000</u>	<u>8,614,559.84</u>	<u>12.34</u>

<u>Contractor</u>	<u>INCOME</u>		
	<u>Energy Sales kWh</u>	<u>Net Amount</u>	<u>Mills Net Per kWh</u>
Total	698,193,000	8,614,559.84	12.34
<i>Privately Owned Utilities</i>			
Arizona Public Service Company (Contract No. 14-06-300-2137)	107,067,000	1,313,510.74	12.27
Nevada Power Company (Contract No. 14-06-300-2134)	88,400,000	1,095,268.90	12.39
Southern California Edison Company (Contract No. 14-06-300-2135)	2,140,451,000	25,677,647.38	12.00
Tucson Gas and Electric Company (Contract No. 14-06-300-2138)	<u>57,106,000</u>	<u>700,749.27</u>	<u>12.27</u>
Total	2,393,024,000	28,787,176.29	12.03
 TOTAL FIRM POWER SALES	 <u><u>3,570,328,000</u></u>	 <u><u>\$43,269,245.31</u></u>	 <u><u>12.12</u></u>
<i>Penalties</i>			
Tucson Gas and Electric Company (Contract No. 14-06-300-2138)		677.30	
Southern California Edison Company (Contract No. 14-06-300-2135)		<u>13,409.12</u>	
		\$ 14,086.42	
<i>Miscellaneous Electric Income</i>			
Arizona Public Service Company (Contract No. 14-06-300-2137)		834.54	
Nevada Power Company (Contract No. 14-06-300-2134)		<u>20,930.00</u>	
Total		21,764.54	
 GRAND TOTAL	 <u><u>3,570,328,000</u></u>	 <u><u>\$43,305,096.27</u></u>	

F. Pacific Northwest - Pacific Southwest DC Intertie

F.1 Background

The Pacific Northwest-Pacific Southwest DC Intertie began in 1961 when President Kennedy, in his message to Congress on natural resources, directed the Secretary of the Interior to develop plans for interconnection of the areas served by the Department's power marketing agencies. The first Intertie proposal consisted of four major high voltage lines:

- (1) A 750-kV DC line from The Dallas Dam, Oregon, via Nevada to Sylmar Substation, Los Angeles, plus a 345-kV AC line from Hoover Dam to Phoenix, Arizona;

(2) A 500-kV AC line from John Day Dam, Oregon, via the Central Valley of California to Vincent Substation, Los Angeles, California;

(3) A 750-kV DC line from The Dallas Dam, Oregon, to Hoover Dam, connected to Los Angeles by a 750-kV DC line, and to Phoenix, Arizona, by a second 345-kV AC line; and

(4) A 500-kV AC line from John Day to Table Mountain in the Central Valley of California, and thence to Vincent Substation, Los Angeles, California.

The physical detail and economic data on this proposal were submitted to the Appropriations Committees of the Congress by the June 1964 Report of the Secretary of the Interior to the House and Senate Appropriations Committees on the Pacific Northwest-Pacific Southwest Intertie. Congressional authority for construction of the Intertie was provided in the 1965 Public Works Appropriations, the Act of August 14, 1964, 78 Stat. 756. This authority was conditioned, however, by the report by the Senate Appropriations Committee which provided that construction of the Intertie lines was not to commence until a review was completed which found that The Dalles-Hoover Dam would be financially feasible and self-liquidating over its service life.

In October 1964, the Feasibility Report on the Dalles-Hoover DC Intertie was submitted to the Appropriations Committees. As this report supported the economic feasibility of The Dalles-Hoover line, Bonneville Power Administration (BPA) and the Bureau of Reclamation were directed to proceed with construction of the Federal portions of the Intertie Project.

The two 500-kV AC lines and an 800-kV DC line from The Dalles Dam to the southern California area were completed and have been in service since 1963, 1969, and 1970, respectively. A 345-kV line and associated facilities were constructed from Mead Substation, near Hoover Dam, to Liberty Substation near Phoenix with a connecting 230-kV line to Pinnacle Peak Substation north of Phoenix. These facilities were placed in service in 1968.

Contracts were awarded for the construction and installation of the DC terminal at Mead Substation. Preliminary survey and acquisition of right-of-way were completed for The Dallas-Hoover DC line. The initial proposal included an expected inservice date of 1971.

As a result of several delays in appropriation of funds, by 1969 the proposed inservice date of the "Hoover" DC Intertie had been delayed to the extent that the involved entities were forced to make other arrangements for a power supply. This resulted in an announcement by the Assistant Secretary for Water and Power Development, in May 1969, that the construction of the "Hoover" DC line would be postponed.

Since the postponement of construction in 1969, several meetings have been held with the interested entities to reexamine the need for and interest in the Intertie based on updated costs, loads and available resources. During these reviews, both BPA and Reclamation took the position that any action which would involve a significant expenditure of funds must be contingent upon rather firm commitments on the part of the entities which would use the line.

A review, which was initiated in 1975, indicated that there was not adequate interest to justify a complete reanalysis and feasibility study of the "Hoover" DC line.

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F.2 Task Forces

In view of the increased costs of installing generating facilities on both the Pacific Northwest and Pacific Southwest systems, together with the greatly increased fuel costs and the need for conservation of fossil fuels, a review of the interests and need for the "Hoover" Intertie was initiated in August 1975. As a result of this review three task forces were established as follows:

- (1) System Studies Task Force;
- (2) Economic Evaluation Task Force; and
- (3) Environmental Task Force.

The System studies task force was chaired by Bonneville Power Administration, with representation by U.S. Bureau of Reclamation, Arizona Public Service Company, Salt River Project, and Nevada Power Company.

Salt River Project chaired the Economic Evaluation Task Force, with representation from the same entities as the System Studies Task Force.

The Environmental Task Force was chaired by U.S. Bureau of Reclamation and included representatives from Bonneville Power Administration.

F.2.1 System Studies Task Force

The following is a summary of the conclusions reached by the System Studies Task Force:

(1) The technical requirements for a 1,440 MW or 2,200 MW transmission system between Pacific Northwest and Southwest could be most effectively met by a $\pm$ 500-kV bipolar overhead HVDC transmission line; i.e., 1,000-kV DC Intertie.

(2) The best location for the northern terminal is Celilo. The preferred location for the southern terminal is the Phoenix area rather than Mead. The transmission line would be 1,054 miles long.

(3) The system as proposed would enhance the performance of the connected AC systems.

(4) When losses are accounted for, the effective transmission capacity of the DC system, defined as the power delivered to the receiving AC system at rated conditions, for the proposed 1,440 MW and 2,200 MW systems would be 1,326 MW and 1,940 MW, respectively.

(5) Based on the effective transmission capacity, the estimated investment costs for the 1,440 MW and 2,200 MW systems would be \$353/kW and \$296/kW, respectively.

(6) The incremental investment cost for the additional 614 MW transmission capacity available for the 2,200 MW system would be only \$175/kW. Comparison of annual costs show similar potential advantage for the higher capacity system.

(7) The 2,200 MW system could be built in two stages to accommodate potential growth of line loading and to effect additional benefits by deferment of investment costs for part of the terminals.

(8) To meet the January 1984 energization date, award of construction contracts is required by April 1979.

The cost estimates for the 1,400 MW system components are tabulated on Table 1 of "PNW-SW Intertie, dated February 1976."

In order to meet growth of transmission capacity requirements, a viable alternative would be to build a 2,200 MW converter terminal in two stages.

F.2.2 Economic Evaluation Task Force

The evaluation by the Task Forces shows that the Celilo-Phoenix area 1,000 kV DC Intertie is feasible and that it should be completed by January 1984.

The overall annual benefit-to-cost ratio for a 1,440 MW system is approximately 2.1 to 1, based on those benefits which can be evaluated. Total equivalent annual benefits are estimated to be \$84,563,000 and annual costs \$40,950,000. The total investment cost is estimated to be \$467,600,000.

Long-term benefits evaluated in this report are outlined below:

(1) Exchanges of summer-winter surplus peaking capacity between the Northwest and Southwest to reduce capital expenditures for new generating capacity;

(2) Sale of surplus Northwest secondary energy to Southwest utilities; and

(3) Sale of Southwest energy to the Northwest to firm up peaking hydro sources during critical water years.

The proposed Intertie would also provide a means for conservation of significant amounts of fossil fuels by the following:

(1) Use of surplus hydroelectric energy;

(2) Foregoing installation of thermal peaking resources; and

(3) Increased efficiency of operation of hydro and thermal resources.

F.2.3 Environmental Task Force

The Task Force has agreed that environmental studies will be the individual responsibility of the U.S. Bureau of Reclamation and Bonneville Power Administration on those portions of the line under each agency's jurisdiction. However, study methods will be consistent.

UPDATING THE HOOVER DAM DOCUMENTS

The Task Force has submitted an A-95 Notice to be circulated to various Federal, State, and local agencies and clearinghouses in accordance with the provisions of the Office of Management and Budget Circular A-95. The Task Force has also established contact with appropriate Federal, State, and local planning agencies that may have jurisdictional involvement or interest in the project (see "Second Supplemental Report on the Feasibility of the Celilo-Mead (The Dalles-Hoover) DC Intertie," Bonneville Power Administration, U.S. Bureau of Reclamation, February 1976, for Cost Estimates, Financial Information Summary, PNW Surplus Energy Available, Benefits in Dollars, and Present Worth Analysis).

Completion of the studies on feasibility of the Intertie have been held in abeyance since February 1977 pending completion of peaking resource studies in the northwest.

In order to insure completion of the project, two major areas of concern need to be resolved: (1) quantification of available northwest peaking resources; and (2) assurances of future funding.

The WAPA is now responsible for completion of the Intertie.

F.3 Intertie Contracts

The following "Intertie" contracts have been executed by Interior's Bureau of Reclamation. They are now being administered by the United States Department of Energy, Western Area Power Administration, which is administering the Intertie. The contracts involve the use of the Mead-Liberty line and the operation and maintenance of the phase-shifter. Those marked with an asterisk are revenue producing.

<u>Contractor</u>	<u>Number and Date</u>	<u>Description of Agreement</u>
Arizona Public Service Co.	7-07-30-P0009 June 6, 1977	Advancement of funds for use of 230-kV facilities at Liberty Substation
Bonneville Power Adm'n. (Department of Energy)	14-06-300-2329 Bonneville No. 14-03-09239 August 15, 1972	Exchange energy
*City of Los Angeles, Dept. of Water and Power (210 MW - for delivery of purchase from SRP)	14-06-300-1988 December 11, 1967	Mead Interconnection
	14-06-300-2489 December 17, 1973 (also CRSP)	Nonfirm transmission service
Letter Agreement	April 1, 1977	Advancement of funds for proposed Mead Interconnection
*Division of Colorado River Resources, State of Nevada (30 MW Capacity - delivery of purchases from Public Service Co. of New Mexico)	14-06-300-2611 October 29, 1975	Firm transmission service over Mead-Liberty-Pinnacle Peak-Glen Canyon-Four Corners transmission facilities
*Glendale, California	14-06-300-2474 June 1, 1973	Nonfirm transmission service

<u>Contractor</u>	<u>Number and Date</u>	<u>Description of Agreement</u>
The Metropolitan Water District of So. California	14-06-300-2004 March 29, 1968	Mead Interconnection
*Nevada Power Co.	14-06-300-1996 January 1, 1968	Mead Interconnection
*Nevada Power Co.	14-06-300-2248 October 21, 1971	Advancement of funds for purchase, installation and modification; pay- ment for OM&R of transfer-tripping facilities at Mead Substation
*Nevada Power Co.	14-06-300-2698 August 2, 1976 (also CRSP)	Nonfirm transmission services
*Salt River Project Agricultural Improvement and Power District (Revenue) (-160 MW capacity - delivery of Mohave entitlement)	14-06-300-2002 March 11, 1968	Mead Interconnection and firm transmission service
*Salt River Project Agricultural Improvement and Power District	14-06-300-2260 June 30, 1975	Nonfirm wheeling
*Salt River Project Agricultural Improvement and Power District	14-06-300-2391 October 1, 1973	Use and operation of facilities
Southern California Edison Co.	14-06-300-1871 July 31, 1967	Mead Interconnection
Southern California Edison Co.	14-06-300-2496 May 1, 1974	Advancement of funds for installa- tion of digital dispatch security monitoring equipment at Mead Substation
Letter Agreement	May 9, 1975	Amends No. 14-06-300-2496

The following contract is administered by Interior's Bureau of Reclamation:

Nevada Power Co.	14-06-300-2178 June 1, 1970 (Also BCP)	Lease of telephone circuits
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The following contract is under the joint administration of Western Area Power Administration and Reclamation:

Multiparty agreement between Navajo Project participants	14-06-300-2438 February 4, 1974	Operation, maintenance, and replacement of phase-shifting transformer at Liberty Substation
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