

TABLE 6A: RECONCILIATION OF 1984 SWP AND CVP ENERGY

(in millions of kilowatthours)

ITEM	MONTH						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
Harvey O. Banks Delta Pumping Plant							
Energy Metered at Pumping Plant	6.64	34.41	47.24	64.56	49.23	53.11	82.96
Less Energy Scheduled by USBR for CVP Pumping	0.00	-0.10	-1.30	-5.25	0.00	0.00	-12.17
Plus Excess Daily Energy Scheduled by USBR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	6.64	34.31	45.94	59.31	49.23	53.11	70.79
Dos Amigos Pumping Plant							
Energy Metered at Pumping Plant	14.07	26.13	33.57	40.37	52.23	67.92	80.91
Less Energy Scheduled by USBR for CVP Pumping	-10.68	-10.61	-14.57	-19.45	-25.84	-27.75	-38.47
Less Energy Scheduled by USBR for Station Service	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plus Excess Daily Energy Scheduled by USBR	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	3.44	15.52	19.00	20.92	26.39	40.17	42.44
San Luis Pumping Plant							
Energy Metered at Pumping Plant	0.69	39.69	30.78	14.23	14.19	15.44	27.75
Less Energy Scheduled by USBR for CVP Pumping	0.00	-38.70	-24.87	0.00	0.00	0.00	0.00
Less Energy Scheduled by USBR for Station Service	-0.67	-0.70	-0.41	-0.06	0.00	-0.06	-0.04
Plus Excess Daily Energy Scheduled by USBR	0.00	0.38	0.17	0.00	0.00	0.00	0.00
Energy Used for SWP Pumping	0.02	0.67	5.67	14.17	14.19	15.38	27.71
Las Perillas Pumping Plant							
Energy Metered at Pumping Plant	0.50	0.55	1.15	0.91	1.41	1.68	2.04
Less Energy Scheduled by USBR for CVP Pumping	0.00	-0.02	0.00	0.00	0.00	-0.05	-0.02
Energy Used for SWP Pumping	0.50	0.53	1.15	0.91	1.41	1.63	2.02
San Luis Generation Plant							
Energy Metered at Generation Plant	0.45	2.82	2.15	13.34	86.74	107.13	90.76
Less Energy Scheduled by USBR for CVP Use	0.00	-0.47	0.00	-11.23	-48.21	-54.11	-51.26
Plus Excess Daily Energy Scheduled to USBR	0.00	0.00	0.00	0.16	0.09	0.03	0.01
SWP Share of Energy Generated	0.45	2.35	2.15	2.27	38.62	53.05	39.51

This included 19 million kWh of energy that was banked with Nevada Power Company in 1983 during initial start-up of this coal-fired unit. The balance of banked energy due DWR was about 41 million kWh as of December 31, 1984.

DWR also has a contract with TERA Power Corporation for the purchase of energy from two hundred 50-kW wind turbines being constructed at Bethany Wind Park near South Bay Pumping Plant. One hundred wind turbines were operational at the end of 1984, and almost 6 million kWh of wind-generated energy was delivered to DWR during the year. All 200 wind turbines should be completed by the end of 1985.

In addition to contract purchases from specific facilities owned by KRCD, MWDCS, and TERA, DWR purchased 2.42 bil-

lion kWh from various public utilities in 1984. Table 6 shows the amounts of energy purchased, and Table 7 summarizes expenditures for SWP power and transmission services purchased in 1984. Most of the energy purchased in 1984 came from the Pacific Northwest via DWR's contracted 300 MW of transmission capacity in the extra-high-voltage Pacific Northwest Intertie. Although not needed to meet 1984 SWP needs, such energy purchases were made in compliance with contractual requirements or because they were economically advantageous.

Table 6 also summarizes energy transactions under emergency service agreements with PGandE and SCE. Under these agreements, SWP power resources are made available to the utilities in emergencies. Additional energy is included

USE AT SWP PLANTS AND JOINT-USE FACILITIES

(in millions of kilowatthours)

MONTH						ITEM
AUG	SEP	OCT	NOV	DEC	TOTAL	
89.06	39.08	34.48	71.18	82.29	654.24	Harvey O. Banks Delta Pumping Plant Energy Metered at Pumping Plant Less Energy Scheduled by USBR for CVP Pumping Plus Excess Daily Energy Scheduled by USBR Energy Used for SWP Pumping
-20.45	-2.08	0.00	-12.76	-26.26	-80.37	
<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	
68.61	37.00	34.48	58.42	56.03	573.87	
61.19	21.50	10.35	16.32	28.26	452.82	Dos Amigos Pumping Plant Energy Metered at Pumping Plant Less Energy Scheduled by USBR for CVP Pumping Less Energy Scheduled by USBR for Station Service Plus Excess Daily Energy Scheduled by USBR Energy Used for SWP Pumping
-27.37	-6.74	-4.83	-9.07	-20.70	-216.08	
0.00	0.00	-0.04	-0.07	0.00	-0.11	
<u>0.00</u>	<u>0.00</u>	<u>0.17</u>	<u>0.00</u>	<u>0.00</u>	<u>0.22</u>	
33.82	14.76	5.65	7.18	7.56	236.85	
17.10	18.38	43.98	101.48	101.36	425.07	San Luis Pumping Plant Energy Metered at Pumping Plant Less Energy Scheduled by USBR for CVP Pumping Less Energy Scheduled by USBR for Station Service Plus Excess Daily Energy Scheduled by USBR Energy Used for SWP Pumping
0.00	-3.72	-25.31	-59.06	-48.17	-199.83	
-0.09	-0.25	-0.12	-0.13	-0.11	-2.64	
<u>0.00</u>	<u>0.00</u>	<u>0.06</u>	<u>0.00</u>	<u>0.02</u>	<u>0.63</u>	
17.01	14.41	18.61	42.29	53.10	223.23	
1.17	0.53	0.46	0.14	0.28	10.82	Las Perillas Pumping Plant Energy Metered at Pumping Plant Less Energy Scheduled by USBR for CVP Pumping Energy Used for SWP Pumping
-0.13	-0.01	0.00	0.00	0.00	-0.23	
<u>1.04</u>	<u>0.52</u>	<u>0.46</u>	<u>0.14</u>	<u>0.28</u>	<u>10.59</u>	
39.41	8.92	0.72	2.08	1.67	356.19	San Luis Generation Plant Energy Metered at Generation Plant Less Energy Scheduled by USBR for CVP Use Plus Excess Daily Energy Scheduled to USBR SWP Share of Energy Generated
-21.32	0.00	0.00	0.00	0.00	-186.60	
<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.29</u>	
18.09	8.92	0.72	2.08	1.67	169.88	

when the emergency service energy is returned to the SWP. Emergency service transactions were quite limited in 1984.

Power Sales

When three major long-term power related contracts terminated on March 31, 1983, DWR began operating as a bulk power distributor under new short-term power purchase and sales contracts, and longer term power and transmission contracts with utilities in Oregon, Nevada, Arizona, and California. Since the new short-term power purchase contracts ensured more than enough energy and capacity to meet SWP loads, DWR entered into power sales contracts to sell capacity and energy excess to SWP needs, within the limit of SWP's contractual transmission capabilities at

Malin, Tesla, Vincent, Sylmar, and El Dorado Substations.

In 1984, this excess capacity and energy were sold to utilities at current market rates. The determination to sell power at the current market rates or to wait for a more opportune time must take into account the projected SWP operations and changes in the power market, as well as the energy losses, and transmission and dispatching costs. This new responsibility has created an emphasis on an energy accounting system that, through computerization, can quickly monitor the current status of the power purchases and sales operation.

As Table 6 indicates, SWP energy resources exceeded energy requirements by a substantial margin in 1984. In fact,

TABLE 7: SWP POWER AND TRANSMISSION SERVICE PURCHASES IN 1984

Supplier	Services Provided	Invoice Amount
Western Area Power Administration	Interconnection transmission	\$ 1,134,000
Bonneville Power Authority	Nonfirm energy	3,872,012
Pacific Power and Light Company	Firm capacity and energy, wheeling, and losses on third party systems	44,224,719
Portland General Electric Company	Firm energy	25,626,029
Pacific Gas and Electric Company	Transmission and Table Mountain-Tesla reinforcements	28,430,326
Kings River Conservation District	Hydroelectric energy	4,197,803
TERA Power Corporation	Wind energy	486,783
Pacific Gas and Electric Company, Southern California Edison Co., and San Diego Gas and Electric Co.	EHV transmission	1,500,000
Southern California Edison Co.	Transmission and dispatching	13,426,633
The Metropolitan Water District of Southern California	Hydroelectric energy	7,360,770
Los Angeles Department of Water and Power	Transmission, energy, and dispatching	101,582
San Diego Gas and Electric Co.	Energy	1,544
Nevada Power Company	Transmission	990,798
Salt River Project Agricultural Improvement and Power District	Energy	1,151,105
Total		\$132,504,104

in every month but April, energy sales exceeded energy use within the SWP system.

Power sales in 1984 were made under contracts with 13 utilities. The amounts of energy sold and the total amount of sales to each purchaser are shown in Table 8. As noted, Table 8 also includes revenues for certain other power-related services furnished.

The total revenue from power sales during 1984 exceeded expenditures for bulk power purchases and transmission services by about 10 percent. This reflects only the cash transactions during 1984 and is not directly indicative of the true net cost of SWP energy, which includes such other costs as (1) debt service and OM&R costs associated with SWP-owned hydroelectric facilities, and (2) debt service, OM&R, and fuel costs associated with Reid Gardner Unit No. 4.

Transmission Service Agreements

Since termination of the Oroville-Thermalito Power Sale Contract on March 31, 1983, transmission of Hyatt-Thermalito power and power from other SWP resources has been provided through PGandE's system under the 1982 Comprehensive Agreement and through SCE's system under the 1979 DWR-SCE Power Contract. The existing EHV Intertie Contract provides firm transmission service for 300 MW of Pacific Northwest power from the California-Oregon border (Malin) to delivery points on the 500-kV transmission line at Table Mountain, Tesla, Los Banos, Midway, and Vincent Substations. In 1984, contractual options on new interruptible transmission paths between Vincent-San Onofre, Vincent-Sylmar, and Vincent-Midway Substations were exercised in order to make energy sales to utilities in Arizona, Nevada, and Southern California.

TABLE 8: SWP POWER SALES IN 1984

Purchaser	Kilowatthours	Amount of Sale
Portland General Electric Company	13,230,000	\$ 333,470
Northern California Power Agency	7,365,000	247,194
Pacific Gas and Electric Company	1,225,640,000	34,919,888 ^(a)
Southern California Edison Company	2,844,020,000	67,416,049
Los Angeles Department of Water and Power	166,844,000	5,411,434 ^(b)
City of Burbank	93,135,000	2,794,062
City of Glendale	124,101,000	3,681,975
City of Pasadena	274,225,000	7,918,404
City of Anaheim	165,940,000	5,408,816 ^(c)
City of Riverside	96,867,000	3,054,650
City of Vernon	17,823,000	515,233
San Diego Gas and Electric Company	199,880,000	5,963,250
Nevada Power Company	212,005,000	7,682,558 ^(c)
Total	5,441,075,000	\$145,346,983

1416640
3992176

- a) Includes \$15,517 for emergency service.
- b) Includes \$1,347,400 for peaking capacity foregone.
- c) Includes \$584,941 for peaking capacity.

Cap - Total

DWR's participation agreement with Nevada Power Company for construction and operation of Reid Gardner Unit No. 4 also provides for transmission of SWP power from the plant to the SCE transmission line in Nevada south of Las Vegas. The principal bulk-power delivery points and transmission paths used by DWR are shown on Figure 12 in Chapter VI. Table 7 includes DWR's expenditures for transmission services during 1984.

Because of construction delays, PGandE extended completion of the Table Mountain reinforcement project from January 1985 to a date still to be determined. The delay in increasing the capacity of the 500-kV transmission line from Table Mountain to Tesla Substation caused DWR to extend its present transmission contract with the Western Area Power Administration (WAPA). At a monthly cost of \$94,500, the WAPA Contract provides a parallel transmission path from Table Mountain Substation to the Tracy Substation, from which the transmission path is linked to PGandE's backbone. This

parallel transmission path allows the output from Hyatt and Thermalito Powerplants to bypass the power bottleneck between Table Mountain and Tesla Substations; as a result Hyatt-Thermalito generation was curtailed very little in 1984.

Recreation and Visitor Activities

As summarized in Table 9, 6.27 million recreation days of use was recorded at SWP facilities in 1984. This use includes camping, boating, fishing, swimming, bicycling, and other recreation activities, and represents an increase of about 7 percent from 1983.

Most SWP recreation and visitor use continued to be concentrated at the major reservoirs, where well-developed facilities exist to accommodate public use. In fact, about 60 percent of the total SWP recreation use in 1984 occurred at the four major reservoirs in Southern California. Expansion at two of these four reservoirs was under way in 1984.