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Decision No. 89711 DEC 12 1978

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application)
of SOUTHERN CALIFORNIA EDISON)
COMPANY for authority to increase)
rates charged by it for electric)
service.)

Application No. 57602
(Filed October 7, 1977)

(See Decision No. 89130 for appearances.)

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O P I N I O N

Summary of Proceeding

In the subject application, Southern California Edison Company (Edison) seeks authorization to increase its California jurisdictional electric rates by approximately \$315.8 million (14.4 percent) annually at its estimated 1979 level of sales. Edison also requests that the \$11.8 million requested for conservation program costs in the form of a conservation adjustment account revenue clause be made, pursuant to D.88650 dated April 4, 1978 in A.57111, additive to the requested \$315.8 million base rate increase requested herein. Resolution No. E-1766 dated May 16, 1978 in Advice Letter No. 458-E authorized new service connection charges. These charges are estimated to yield approximately \$5.9 million in 1979, which would reduce the required base rate revenues by an equal amount. Edison, therefore, seeks a net increase of approximately \$321.7 million for test year 1979. Edison estimates that its requested rate increase would yield a 1979 rate of return of 10.17 percent on rate base and a return on equity of 15 percent. ✓

After notice, 47 days of public hearings were held before the assigned Administrative Law Judge between December 6, 1977 and May 22, 1978. Public witnesses' testimony and/or statements were made in the cities of Los Angeles, Visalia, Santa Ana, Santa Barbara, Long Beach, Palm Springs, and San Bernardino. Hearings on the case-in-chief were held in the cities of Los Angeles and San Francisco. The matter was submitted on an interim basis on May 22, 1978^{1/} subject to receipt of late-filed exhibits, which have been received, and to the filing of opening

^{1/} The ALJ indicated that submission would be on an interim basis subject to reopening for further testimony on (a) criteria for future rate of return adjustments related to Edison's conservation activities; (b) a staff proposed management survey; and (c) Edison's motion for partial general rate relief. The latter issue is moot because partial rate relief was granted in D.89130. There will be no further hearings on items (a) and (b) which are resolved herein. This decision is the final order in this proceeding.

briefs on June 21, 1978 and closing briefs on July 6, 1978. Opening and closing briefs were submitted by Edison, the Commission staff, the California Farm Bureau Federation (Farm Bureau), the California Retailers Association (CRA), Airco, Inc. and General Motors Corporation (A-GM), and General Services Administration for Executive Agencies of the United States (GSA). Opening briefs were filed by the California State Energy Resources Conservation and Development Commission (Energy Commission), the California Manufacturers Association (CMA), Toward Utility Rate Normalization (TURN), and Robert P. O'Brien. ✓

Edison's application was the first tendered under the Commission's Regulatory Lag Plan authorized by Resolution No. A-4693 dated July 6, 1977. Edison's motion for a partial general rate increase was granted because it did not appear that a decision based on test year 1979 would be issued by October 6, 1978 pursuant to the Plan. A partial general rate increase was authorized in this proceeding by D.89130 dated July 25, 1978. Edison was authorized rate relief in the amount of \$102,129,000. D.89130 provided that the increase authorized is subject to refund at 7 percent interest to the extent that the base rates established for test year 1978 result in an actual gross revenue increase greater than that authorized herein for test year 1979.

Reductions in rates were made by advice letter filings resulting from ad valorem taxes on Edison's property as of July 1, 1978 resulting from the passage of Article XIII-A of the California Constitution (the Jarvis-Gann Initiative).

I. EDISON'S PRESENT OPERATIONS

Edison furnishes electric service to over 309 unincorporated communities and 153 incorporated cities, or portions thereof, and outlying rural areas in 15 counties in central and southern California. The population of the area served was estimated to be 7,765,000 as of December 1976.

Edison also sells electric power for resale to the cities of Anaheim, Azusa, Banning, Colton, Riverside, and Vernon.

Edison's production facilities, classified by plant type in the following tabulation, had a generating capacity totaling 12,502,295 kilowatts (kW) as of December 1976. This total excludes 1,217,503 kW of firm capacity available for Edison's use under purchased power agreements; 100,000 kW from May through September under the provisions of the Portland General Electric Company Assignment Agreement; 18,500 kW from March through September and 14,950 kW from October through February via the United States Bureau of Reclamation at the Parker-Davis sites; and 331,000 kW of operating capacity available under generally prevailing conditions at Hoover Dam through contracts with the United States Government. ✓

Generating Plants/Units

Description	Oil &	Coal	Nuclear	Hydro	Combustion	
	Gas				Turbine	Diesel
	(1)	(2)	(3)	(4)	(5)	(6)
Edison Ownership	12 ^{a/}	-	-	36	6	1
Joint Ownership	-	2	1	-	-	-
Other Ownership	-	-	-	-	-	-
Edison Operator	11 ^{a/}	1	1	36	6	1
Other Operator	1	1	-	-	-	-

a/ Includes two combined-cycle units consisting of two steam turbines and seven combustion turbines.

Edison plans to add 4,789,000 kW of additional generating capacity between 1977 and 1986, 42 percent of which will be through combined-cycle and combustion-turbine generation, 49 percent through nuclear generation, 1 percent through improvements and additions to existing hydro facilities, and 8 percent through fuel-cell installations.

As of December 31, 1976 Edison had approximately 11,439.6 miles of transmission lines, approximately 43,350 miles of overhead distribution lines, (including 2,296 miles of distribution lines on transmission poles), and approximately 24,369 miles of underground distribution cable of 16 kV or less, including 7.7 miles of submarine cable.

At year-end 1976, Edison had a total of 2,856,377 meters supplying 2,814,403 customers of which 2,497,076 were classified as residential customers. Edison projected customer growth of approximately 66,000 in 1977, 60,000 in 1978, and 58,900 in 1979.

II. PUBLIC WITNESSES STATEMENTS AND/OR TESTIMONY

Seven days of public hearings were held at central locations to afford Edison's customers the opportunity to be heard concerning this increase. A total of 62 public witnesses, out of nearly three million customers, either stated their positions or testified at these hearings. Testimony in opposition to the proposed increases included objections based on the impact of the increases on people who were old, poor, and/or on fixed incomes; the higher percentage of increases for domestic customers compared to other customer groups; the inflationary impacts of the increases; and the excessive rate of return requested. There was testimony critical of the wages and fringe benefits enjoyed by Edison's employees. Desert area residents stated that the magnitude of their summer electric bills was equal to or greater than their home mortgage payments. There was testimony in opposition to Edison's rate zone differentials; in opposition to Edison's use of nuclear power for generating electricity; in support of the installation of decentralized fuel-cell and solar energy plants to generate electricity as opposed to constructing large centralized plants and associated large transmission lines

to bring the energy to load centers; and testimony supporting regional interconnections to transmit energy between different regions of the country.

Many of the public witnesses were utility shareholders testifying in support of increasing Edison's rate of return to the requested level. Shareholders testified that their own retirement plans were predicated, in part, on their receipt of reasonable earnings from their utility stock, and that the granting of the requested increase was necessary for them to realize this potential from their investments.

Many of the customers supported the domestic lifeline concept and/or the extension of lifeline benefits.

Witnesses for the Association of California Water Agencies (CWA) presented testimony as to the impact of time-of-use (TOU) power rates on the water and sewer utility operations and on agricultural uses. Another witness presented testimony on suggested TOU rates for agricultural wind machines. The TOU testimony was received subject to further cross-examination and is discussed further in the rate design section of this decision.

Two members of the energy and resources management committee of the city of Santa Barbara, a volunteer group dedicated to promote energy conservation, testified for themselves. They testified that Edison and the Southern California Gas Company (SoCal) had not successfully reduced energy waste; that further efforts were necessary, including an intensive ongoing energy audit to reduce energy consumption; and that Edison's primary concern seemed to be reducing demand rather than energy sales. One of the witnesses submitted the Santa Barbara Energy Conservation Project report (Reference Item G) which will be discussed in the conservation section of this decision.

III. RESULTS OF OPERATION

General

Complete results of operation testimony and exhibits were presented by Edison and the Commission staff. All of the staff witnesses had available later recorded information than the information used in preparing Edison's estimates.

The staff financial examiners proposed certain adjustments not incorporated in the staff results of operation reports which are discussed herein.

The Energy Commission staff presented testimony on policy considerations, on programs, and on the scope of program activity related to Edison's energy management, customer service, and informational expenses.

Modifications of the Staff Position

The table on page 79 of the staff's opening brief modifies the staff showing to delete the conservation adjustment account (CAA) revenues incorporated in its revenue estimates, recognized a 7 percent 1978 wage expense increase, and adds service connection charge revenues.^{2/}

^{2/} The staff opposed inclusion of 1978 wage increases and elimination of CAA revenues in its brief opposing a partial general rate increase. (See mimeo. page 7 of D.89130.)

The Establishment of Base Rates Which Exclude Energy Costs

D.85731 dated April 27, 1976 in C.9886, the Commission investigation into electric utility fuel cost adjustment tariff provisions, states in part:

"We intend to modify the base cost to zero in the pending SDG&E general rate proceeding. The base cost for PG&E, Edison, and Sierra will be modified in new general rate proceedings filed subsequent to our determination on SDG&E."

Edison's results of operation studies (Exhibits 12 and 13) do not develop estimates which eliminate all fuel, purchased power, and energy cost-related expenses from revenues and expenses. Edison reluctantly prepared, but did not sponsor, several exhibits as a Commission requirement for acceptance of its filing in accordance with the Regulatory Lag Plan, including a supplemental exhibit to adjust 1978 and 1979 operating revenues and operating expenses to remove energy costs, including the Energy Cost Adjustment Clause (ECAC) related expenses^{3/} and revenues to arrive at base revenues which exclude energy costs (BR-EC). The comparison of Edison's and the staff's summary of earnings for test year 1979 on a total system basis at BR-EC is contained in Table 18-C (revised) in Exhibit 47-1.

The staff was critical of Edison for not carrying out the Commission directive in D.85731 and requests that Edison be ordered to make subsequent showings in general rate increase proceedings on BR-EC only.

The staff accuses Edison of not using BR-EC costs because it could demonstrate a greater need for domestic increases and a lesser need for industrial group increases using present base rates^{4/}

^{3/} Base rates were not adjusted to delete coal station ash handling, coal weighing and gas facilities, Mono Power Service, fuel administration, and Catalina Island fuel expenses.

^{4/} The reference should have been to BR-EC derived from present rates.

compared to rates including fuel costs (total revenues apportioned by jurisdictional classes). By illustration, the 1979 domestic, large power, and very large power rates of return under the BR-EC concept are 5.0 percent, 6.3 percent, and 6.5 percent, respectively. The corresponding rates of return apportioning total revenues at present rates are 3.48 percent, 7.23 percent, and 8.81 percent.

Edison contends that: (1) this staff criticism is misleading and ignores both testimony used in support of the staff characterization of Edison's motives and of Edison's rebuttal testimony,^{5/} (2) fuel-related revenues are less than fuel-related expenses for the domestic customer group as a result of the implementation of lifeline rates, (3) making the revenue shift on a BR-EC basis while ignoring the fact that fuel-related revenues are frozen for a substantial portion of domestic sales while fuel-related expenses for these customers continue to increase would result in further disproportionate shifts to other customer classes, and (4) Edison is not opposed to a BR-EC concept of rate design so long as all revenues and expenses are properly considered in the determination of total revenue requirements and the cost allocation between customer groups.

^{5/} ECAC charges are based on allowed fuel, energy, and fuel-related costs divided by total sales, except that lifeline ECAC charges may not exceed 0.857 cents-per-kilowatt-hour (kWh). Any ECAC charges greater than 0.857 cents-per-kWh attributable to lifeline consumption are apportioned to nonlifeline sales. Edison's witness testified that this apportionment is \$33 million in 1979; that greater percentage energy losses between its generators and meters occur in providing domestic service at distribution voltages compared to high voltage service provided to many large customers; that the domestic class receives an \$8 million benefit due to greater than average energy losses incurred in supplying domestic customers; and that the SDG&E decision was issued on July 19, 1977, four days after the Notice of Intent (NOI) in this proceeding was first filed, several weeks after the bulk of the application and supporting documents had been completed.

Cost of service is one of the factors considered in the adopted rate design. Cost of service should be based on all costs to determine rate of return by customer classes. Cost of service considerations do not prevent our establishment of BR-EC based rates (and transfer base rate fuel, fuel-related, and energy costs to the Energy Cost Adjustment Billing Factor (ECABF) in this decision). We find that it is reasonable to adopt base rates without energy costs because Edison and its ratepayers will benefit in that we can more expeditiously isolate and investigate the reasonableness of energy costs.

Adopted Summary of Earnings

Table I on the following page contains the 1979 adopted summary of earnings at present rates, modified to reflect the removal of all fuel costs from base rates.

A. ELECTRIC SALES AND REVENUES

Sales - General

D.86794 dated December 21, 1976 in A.54946, Edison's prior general rate increase application, cites D.81919 in discussing differences between revenue classifications and rate schedule estimates as follows:

"It should be noted that all of the customer groups as used by Edison and the staff are not strictly comparable to the classes of service under which Edison reports its revenues under the FPC's Uniform System of Accounts. The customer groups are directly related to the various rate schedules, whereas it is necessary to allocate revenues from some schedules in order to arrive at revenues for classes of service. Sales to public authorities are an example of this. In future rate cases it would be helpful if the presentations were consistent, and customer groups seem to us to be preferable for this purpose."

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TABLE I
 SUMMARY OF EARNINGS
 1979 Test Year at Present Rates

Item	Adopted Results	
	System	CPUC
(Dollars in Thousands)		
<u>Operating Revenues</u>		
Revenues	\$1,180,286	\$1,037,393
<u>Operating Expenses</u>		
Production	241,582	143,963
Transmission	40,532	36,946
Distribution	80,742	80,640
Customer Accounts	43,941	43,905
Conservation and Load Management	20,000	20,000
Administrative and General	125,295	120,667
Subtotal	552,092	446,121
Wage Adjustment	(144)	(138)
Depreciation	175,238	167,058
Taxes Other Than Income	70,877	67,479
Income Taxes	44,253	38,253
Total Operating Expenses	842,316	718,773
Net Operating Revenues	337,970	318,620
Rate Base	4,168,801	3,946,492
Rate of Return	8.11%	8.07%

(Red Figure)

The revenue presentations were made using customer groups. Edison's presentation in future rate cases, (where nonuniform-nonlifeline rate changes are proposed), should contain a discussion of the translation from customer groups to rate schedules to clarify this information for the Commission and for the parties.

The results of operation presentations contain mandated jurisdictional allocations between sales made under this Commission's jurisdiction and those made under the Federal Power Commission (FPC). The FPC jurisdiction has been transferred to the Federal Energy Regulatory Commission (FERC). The jurisdictional mandate is set forth in Federal Power Commission v Southern California Edison (1964) 376 US 205, 11 L ed 2d 638, 84 Sup Ct 644.

Edison's estimates of kWh sales and of numbers of customers were presented by its assistant comptroller, Mr. R. W. Scofield. Edison's revenue estimates and rate design testimony were presented by Mr. W. E. Ferguson, its acting manager of tariffs in its Revenue Requirements Department. The sales estimates were developed by a committee composed of representatives from the following organizations in Edison's structure: comptrollers; conservation, communication, and revenue services; customer service; electric system planning; and power supply. The committee meets periodically to prepare, review, and update estimates of kWh sales and customers. Each committee member, excepting the power supply representatives, prepares sales estimates for residential, commercial, industrial, public authorities-other, and resale customers. The members' estimates are based upon a variety of methods, including a bottoms-up approach based on field information and statistical forecasting methodologies, which include consideration of building activity, past and present growth trends, and economic conditions. An average of the committee estimates is used for each class of service. A committee member sometimes persuades the committee to adopt his estimate. Agricultural sales are based upon average precipitation conditions. Three committee members estimate customers by class of service.

The staff's estimates of sales, numbers of customers, and revenues were presented by Mr. M. G. Lyons, a research manager. His estimates were based upon trended data with primary emphasis given to data from 1973 to 1977. The trended material was modified to reflect national and regional economic variables as they pertain to particular customer groupings. Mr. Lyons' approach parallels that utilized by two of five members on Edison's committee.

Conservation Adjustments

The staff adopted Edison's estimates of reductions in kWh by class of customers for conservation programs, exclusive of voltage reduction impacts. The estimates of sales reductions due to Edison's voltage reduction program are 1,043 million kWh by the staff and 385 million kWh by Edison. The staff's estimates of reduced sales, due to voltage reduction, based on later testimony by Mr. G. A. Amaroli, chief of the Commission's Energy Conservation Team, are reasonable and are incorporated in the adopted sales by class of service.

Comparison of Revenue Estimates

The tabulations on the following pages summarize the estimates of Edison, of the Commission staff, and of the adopted estimates of customers, sales, BR-EC revenues, and total revenues at present rates, as set forth in the subject application, for test year 1979.

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Comparison of Estimates
of Average Customers and Sales

Customer Group	Staff	Utility	Adopted
<u>Average Customers</u>			
Domestic	2,664,306	2,640,606	2,664,306
Lighting and Small Power	290,673	283,816	290,673
Large Power	5,715	5,528	5,528
Very Large Power	122	116	116
Agricultural Power	33,277	32,780	32,780
Street Lighting	7,688	7,547	7,688
SCI	1,658	1,894	1,658
Pool - SWP	1	1	1
Fringe	4	4	4
Off Peak - MWD	1	1	1
Resale (FERC)	12	12	12
Total	3,003,457	2,972,305	3,002,767

<u>Sales (Millions of kWh)</u>			
Domestic	15,055.1	15,197.1	15,055.9
Lighting and Small Power	11,198.8	10,927.8	11,159.4
Large Power	14,873.7	14,817.5	14,530.1
Very Large Power	10,616.3	9,980.7	9,980.7
Agricultural Power	2,099.2	2,074.3	2,055.2
Street Lighting	666.2	683.9	666.2
SCI	11.7	12.1	11.7
Pool - SWP	1,648.0	1,648.0	1,648.0
Fringe	7.4	7.4	7.4
Resale (FERC)	4,232.6	4,232.6	4,232.6
Total	60,409.0	59,581.4	59,347.2

Comparison of Estimates
Of Operating Revenues at
Present Base Rates

Customer Group	:	Staff	:	Utility	:	Adopted
(Dollars in Thousands)						

Operating Revenues (Total System)

Domestic	\$ 509,494.0	\$ 511,424.6	\$ 509,720.0
Lighting and Small Power	359,282.1	351,873.7	358,429.0
Large Power	305,565.4	299,839.2	295,772.0
Very Large Power	169,560.9	158,314.6	158,316.0
Agricultural Power	54,465.2	53,443.6	53,060.0
Street Lighting	33,704.2	34,051.3	33,704.0
SCI	658.5	673.2	659.0
Pool - SWP	5,485.0	5,485.0	5,485.0
Fringe	141.0	141.0	141.0
Resale (FERC Jurisdictional)	137,594.2	137,594.2	137,594.0
Base Rate Revenues ^{1/}	1,575,950.5	1,552,840.4	1,552,880.0
Removal of Fuel Costs ^{2/}	<u>(403,056.0)</u>	<u>(396,931.0)</u>	<u>(395,086.0)</u>
Subtotal	1,172,894.5	1,155,909.4	1,157,794.0
Other Operating Revenues	13,900.0	13,900.0	20,041.0 ^{3/}
FCA/CAA Revenues	16,248.0	14,849.0	2,451.0 ^{4/}
Provision for CAA Bal.Acct.	270.0	438.0	-
Total Oper. Revenues	1,203,312.5	1,185,096.4	1,180,286.0

(Red Figure)

- ^{1/} At base rates established by Decision No. 86794, dated 12/31/76 in A-54946 (last general rate increase). Reflects removal of ECAC revenues.
- ^{2/} Reflects fuel costs priced at 7.39 mills/kWh.
- ^{3/} Includes revenue adjustment of \$5,941,000 for service connection charges authorized by CPUC Resolution No. E-1766, dated 5/18/78.
- ^{4/} Reflects revenue adjustment of \$(11,952,000) for conservation program costs based on Decision No. 88650 in A-57111.

Residential and Commercial Sales

Mr. Lyons utilized sales conservation adjustments developed by the staff conservation team. His estimate reflects a higher number of residential customers and a lower use-per-customer than developed by Edison, which yields lower residential kWh sales and revenue estimates than Edison. His estimate of use-per-commercial customer is lower than Edison's but this differential is more than offset by his higher estimate of numbers of customers, which yields higher sales and revenue estimates than Edison.

The staff's customer estimates for the domestic and commercial classes, based on more recent data, are reasonable and should be adopted. However, recognition should be given to the alternate methodologies used by Edison in projecting use-per-customer. In addition to adoption of the staff's customer and voltage reduction estimates, it is reasonable to adopt sales and revenues to reflect an averaging of the remaining portions of Edison's and the staff's use-per-customer estimates.

Industrial Sales

The staff's estimate of industrial customers exceeds Edison's by 7.1 percent. Its use-per-customer is lower than Edison's resulting in the staff's estimate being 5.9 percent higher than Edison's at present rates.

Mr. Lyons testified that use-per-industrial customer is presently stabilizing; that this may be due, in part, to industrial participation in energy conservation programs; and that industry is expected to be affected by voltage reduction programs.

In rebuttal, Mr. Ferguson testified that the staff's estimate does not recognize that the increase in industrial customers is due to an increase in the number of temporary, low-use construction services classified as industrial customers; that fluctuations in numbers of industrial customers, including temporary services, were not accompanied by changes in industrial sales; and that the key impact on industrial sales levels was caused by variations in sales to the 50 largest customers, and in this group sales variations to eight large oil refineries had the greatest impact.

Edison contends that consideration of the increased number of temporary services together with the staff's higher reduction of use-per-customer, due to voltage reduction, would decrease the staff's sales estimate below Edison's estimate, and that the failure of the staff to recognize any conservation effect from its conservation rate design, including TOU pricing and inverted rate blocks, supports its contention that the staff has overstated sales and revenues for the test year.

Neither Edison nor the staff reduced energy sales estimates at their recommended rates. However, TOU energy shifts were reflected in revenue estimates. Edison's estimates of industrial sales and revenues at present rates modified to reflect the staff's voltage reduction adjustment are reasonable and will be adopted herein. Edison should hereafter record temporary construction sales as a separate subcategory of industrial sales.

Agricultural and Other Pumping Sales

The staff estimates of agricultural sales and revenues are based on a higher estimate of use-per-customer than Edison's. The staff's projection of use-per-customer was modified to reflect an increase in pumping requirements resulting from lower water tables and reduced reservoir storage requiring increased ground water production and/or greater pump lifts.

Heavy rainfall in the winter of 1977-1978 has increased ground water levels within Edison's service area and provided additional storage in reservoirs supplying Edison's service area. We will adopt Edison's sales and revenue estimates which are based on an average year requirement for agricultural uses and Edison's related estimates for nonagricultural water pumping and sewage pumping because it should reflect normal test year conditions.

Public Authority Sales

The recent trend in cutbacks in governmental expenditures resulting from the passage of Article XIII-A of the California Constitution supports our adoption of the staff's estimate for public authority sales and revenues, which are lower than Edison's estimates.

Other Sales

The staff's estimate of Catalina Island sales and revenues based on later information than used by Edison is reasonable.

The staff adopted Edison's resale estimates under FERC, to the State Water Plan, to Metropolitan Water District (none), and for miscellaneous resale sales. Due to drought conditions, Edison's nonjurisdictional special contract resale sales, primarily sales to Pacific Gas & Electric Company (PG&E), were \$11,993,000 in 1976 and \$78,360,000 in 1977. Edison estimates no such sales in 1979 under normal weather conditions.

Base Rate Revenue Adjustments

If present base rates are used, the fuel and purchased power component of staff base rate revenues is higher than Edison's comparable estimate because additional power must be generated, using fuel oil, to provide the energy needed to meet the higher staff sales estimate.

The lower cost fuel and energy resources available to Edison has been used in Edison's estimate. Therefore, the average fuel and purchased power component is higher on the staff basis than on the Edison basis. The adopted base rate adjustment reflects adopted sales levels, system losses, and fuel and energy costs.

In order to eliminate fuel costs from base rates it is necessary to make an adjustment for FERC fuel clause adjustment (FCA) revenues. FCA revenues are based on the average system cost of fuel and purchased power. The adopted FCA reflects adopted sales levels, system losses, and fuel and energy costs.

D.88650 dated April 4, 1978 in A.57111 eliminated separately accounted-for CAA revenues. Therefore, the adopted amount for CAA revenues is zero. The previously segregated CAA revenue requirements are incorporated in the adopted base rates.

Other Operating Revenue Adjustments

Mr. Lyons concurred with Edison's estimate for other operating revenues.

Leasing Revenues

Mr. Hughes, a staff financial examiner, found that Edison was recording leasing revenues on utility property as non-rental revenues. Edison states that it is correcting this error. Mr. Hughes recommends that the revenues be properly recorded, and that as a result Edison's 1979 revenues be increased by \$100,000. We concur.

City of Vernon Adjustment

Mr. Louie, a staff financial examiner, reviewed Edison's subsidiary operations. Energy Services, Incorporated (ESI), a wholly owned subsidiary, engages primarily in providing heating and cooling services. ESI operates facilities furnishing steam, chilled water, and compressed air to a Lockheed-California Company plant, originally owned by ESI. Edison operates and maintains these facilities for ESI. Since ESI does not have its own staff, Edison is reimbursed for its costs by ESI.

The city of Vernon bought all of its electricity from Edison and contracted with Edison to operate and maintain its electric system from 1962 through 1977. Edison recorded net income in Account 456, Other Electric Revenues, thru April 1977. Edison subsequently reclassified revenues and expenses from Vernon as nonutility activities being carried out by ESI. A new agreement is being negotiated between ESI and Vernon, in which ESI agrees to operate and maintain Vernon's electric system. The agreement contemplates that Edison would actually perform all operating and maintenance services on the system for ESI. The staff contends that the operation was marginal under the old agreement but that ESI will now be compensated for the cost of its (Edison's) services plus \$100,000 per year as a management fee. We concur with Mr. Louie's recommendations to include the \$100,000 as net other operating revenues and to have Edison reflect the revenues and expenses on its books. Edison's ratepayers should share the benefits of the marketable expertise developed by Edison's managers in carrying out the business of running Edison's public utility electrical system, which are applied to running Vernon's system. We will reflect the net amount of \$100,000 in Edison's other operating revenues.

Wilmington Oil Field (WF) Profits

Edison acquired seven parcels for its Long Beach steam generating station between 1910 and 1930. Oil and gas were discovered in the WF area in 1936. Edison entered into an agreement with Union Pacific Railroad in 1938 for joint oil and gas development of their combined properties. Other parties also drilled and extracted oil and gas from the WF. This extraction activity caused substantial land subsidence. In 1959 the WF operators entered into a unit agreement for joint development of the oil field to promote conservation and increase the recovery of oil and gas. Injection of water into underground aquifers was commenced to avoid further subsidence and to

increase the recovery of oil and gas. Edison had to construct and maintain dikes to avoid the inundation of its plant site. Edison's personnel advised the staff that these facilities cost approximately \$2.7 million; that operating and maintenance expenses cost \$4.9 million; and that these capital items and expenses were charged to Edison's utility operations. Edison recorded the WF revenues and expenses below the line between 1938 and 1965. In 1965 Edison transferred its mineral rights and oil production facilities to its affiliate, Associated Southern Investment Company (ASIC). Edison transferred the mineral rights at their recorded zero book value at the time of transfer, although an Edison appraisal reflected a mineral rights value of \$2,484,000 at the date of transfer, and transferred oil production facilities at the net book value of \$966,165. Mr. Louie testified that Edison and ASIC have received substantial profits from the WF operation which were recorded as nonutility income; that Edison's ratepayers did not receive any benefits from these oil profits; and that ASIC did not pay Edison a reasonable consideration for the transferred mineral rights. Edison's total net profits through 1965 were \$21,245,078. ASIC's profits through 1977 totaled \$7,539,933. The profit level dropped from \$1,043,000 in 1968, to \$566,000 in 1974, to \$508,000 in 1975, and to a \$61,000 level in 1976 and 1977. Mr. Louie considered the following rate-making treatments:

- a. Treat future oil profits as operating revenues by crediting the ECAC balancing account.
- b. Exclude from rate base plant constructed and other capitalized expenditures resulting from the subsidence problem. In addition, exclude all future operation and maintenance expenses related to the subsidence problem from operating expenses.

- c. Set up past oil profits from WF as accounts receivable from the subsidiary to be amortized over a five-year period by additions to operating revenues.
- d. Set up the fair market value of the mineral rights (\$2,484,000) as accounts receivable from the subsidiary and reduce Edison's rate base by the same amount.

His analysis relating to these treatments are as follows:

Re alternative (a) - Production has been decreasing in the past few years. Consequently, future profits depend greatly on an increase in price of domestic oil from its present level.

Re alternative (b) - Most of the plant was installed in the early 1950's and it is likely that the plant is fully depreciated.

Re alternative (c) - This deals with the treatment of past profits. The oil profits received by ASIC were basically gifts from Edison which should be returned to Edison and passed on to its ratepayers.

Re alternative (d) - Edison should not transfer utility property (including mineral rights) to subsidiaries or other parties without receiving reasonable consideration.

He also testified that it is inequitable, for ratemaking purposes, not to credit all income from utility properties to utility operations; that it is even more inequitable to credit the profits from oil sales to nonutility income, and at the same time charge the ratepayers with both the capital expenditures and the added operation and maintenance expense resulting from the land subsidence; that the oil and natural gas could have been used in Edison's utility operations and, in fact, the refined gas was sold to Edison; that Edison's stockholders have benefited at the expense of its ratepayers by an amount of \$29 million at minimal risk; that there is no easy way of recovering for ratepayers the \$29 million in net profits that have flowed to Edison and ASIC from the WF since 1938, nor to recover the depreciation, operation and maintenance expense, or return on investment that was

earned by Edison as a result of the land subsidence; that when the time value of money is considered these overcharges to ratepayers are larger; that we can only seek to correct these abuses in the future; and that there is little to be gained even by excluding from rate base the capitalized expenditures incurred as a result of the subsidence problem because the bulk of the capitalized expenditures was made about 25 years ago, and subsequently had been fully depreciated. Mr. Louie recommends that Edison should record future profits from the WF in operating revenues by treating profits as an ECAC credit.

Edison's Position on WF

The rebuttal testimony of Mr. Scofield sets forth Edison's position as follows: the site was acquired when there was no known oil in the area; the consideration paid by Edison reflected the surface value of the land; when oil was discovered, the value of the underlying mineral rights could only be qualified and realized through the development and extraction of those minerals; in past periods neither the Commission nor Edison considered development and extraction activities to be of a utility nature; the Commission only recently authorized Edison to engage in exploration and development (E&D) as an adjunct to its electric utility operations in D.83838^{6/} dated December 17, 1974 in A.53488 - and then only to the extent that projects were expressly approved by the Commission; the production equipment to extract the mineral rights was financed by investor-provided risk capital and the oil field operation, including expenses, was accounted for as a nonutility operation from the beginning; it

^{6/} An interim order on this subject, D.83170 dated July 23, 1974, approved Edison's E&D concept.

would be improper for accounting purposes to transfer mineral rights at market (appraisal) value since intercompany transfers have been made on the basis of acquisition costs; the Commission has not, to Edison's knowledge, recognized appraisal values in the ratemaking process and, therefore, Edison properly transferred the assets at the net book values; the construction costs and operational costs to prevent inundation of the plant site or further ground subsidence were necessary to avoid having the generating station become inoperable^{7/} and, therefore, such rate base and expense items are proper ratepayer-related costs; unless the operation were to be carried out at the risk of the ratepayer, it would be improper to credit future profits to the ECAC balancing account; and that in the past Edison has purchased land, including generating sites, from unrelated parties without receiving the appurtenant mineral rights.

Position of TURN on WF

TURN cites the following testimony of Mr. Louie on the issue of disposition of past profits from the WF:

"Q Now, if you were to view your regulatory treatments outlined on page 2-5 by yourself, without consideration to what you think might be a legal restriction, which one or more of the regulatory treatments would you select if you were in the Commission's position, having to make a decision on that particular issue?

"Your personal view is what I want as a professional accountant.

"A If we put aside the question of retro-activeness, I would like to have a combination of a. and c.

^{7/} Mr. Louie contends that Edison could have sought damages if it was not a participant in developing the WF. Edison contends that it would have incurred these expenditures whether or not it was a WF participant.

"That would be set up past profits from the oil field as accounts receivable, and then treat future oil field profits by crediting the ECAC balancing account."

TURN concludes that none of the alternatives proposed by Mr. Louie involves retroactive ratemaking. TURN cites the California Supreme Court in Southern California Edison v Public Utilities Commission (1978) C 3d SF No. 23500. The Court sustained the Commission's order to refund overcollections on the FAC. (The U.S. Supreme Court denied certiorari.) TURN recommends that past profits from the WF be treated as accounts receivable.

Staff's Position on WF

The staff contends that: (1) the transferred mineral rights from Edison to ASIC at zero cost did involve valuable mineral rights which were not made on an arm's-length basis, (2) Edison would not have transferred valuable mineral rights to a third party without commensurate consideration, (3) no value was assigned to the rights only because it was a parent-subsidary transfer, and (4) Edison's ratepayers have borne the burden of ownership costs and now should enjoy the benefits as well.

Discussion on WF

This Commission has analyzed the proper ratemaking treatment for transactions between utilities and their affiliates on a case-by-case basis in the past. D.79751 dated February 23, 1972 in A.53097 authorized the acquisition of an underground gas storage facility (Aliso) by Pacific Lighting Service Company (PLS), a utility

affiliate of SoCal, whose revenue requirements are met by SoCal through a cost of service tariff. The decision notes that the oil rights in the storage field will be purchased by a nonutility affiliate of PLS. In D.83160 dated July 16, 1974 in A.53797 we discussed the assignment of the Aliso oil operations to a nonutility affiliate, ascertained the correct value of the present worth of the oil rights transferred, and stated "...we do not quarrel with the transfer of the oil operations from applicant's operations so long as the objectives of the utility gas field operation continue to be paramount." (See mimeo. page 34.) SoCal operates its facilities and PLS' facilities as an integrated gas utility system. In SoCal's subsequent storage acquisition, Honor Rancho, the net oil field operations are included in other operating revenues.

The San Gabriel Valley Water Company (SG) owned mutual water company stock to obtain water from the mutual. SG was permitted to incorporate the cost of the mutual stock, which included the value of nonoperative mutual lands, in its utility plant. A portion of the mutual's charges to SG was for property taxes and expenses related to the nonoperative lands. The nonoperative lands were subsequently transferred to a subsidiary of the mutual, subsidiary stock was distributed to mutual shareholders, and the nonoperative lands were condemned and sold at a profit. In D.82271 dated December 20, 1977 in A.56714 we reduced SG's rate base by SG's pro rata share of the original cost of the nonoperative lands, since ownership of the nonoperative lands was no longer necessary to obtain water. (See mimeo. pages 10-12.)

Edison's WF mineral rights transfer was at original cost.

The issue of approval of a utility's reclassification of properties from operative to nonoperative status was raised in A.53797, supra. We adopted the staff's recommendation that SoCal notify the Commission, by letter of intent, for proposed reclassifications from operative to nonoperative status of properties if book values for the land were in excess of \$100,000, in time for the Commission to determine if it has any objection to the reclassification. We will adopt a modified procedure of this type to avoid future disputes of this nature. We will require Edison to file a letter of intent to notify the Commission of planned reclassifications or sales of land, improvements, intangibles, or mineral rights with book values or appraised values in excess of \$100,000 indicating the proposed accounting treatment.

It would be inequitable and unreasonable to use hindsight to change the WF accounting rules 40 years later as proposed by TURN. Furthermore, disallowance of return on Edison's expenditures to control subsidence and related expenses together with the transfer of WF profits to the ECAC balancing account would be confiscatory.

If we were to accept Mr. Louie's recommendation regarding future profits (assuming a transfer of the oil field equipment at zero cost) it would be equitable to consider oil field profits and oil field losses. The oil field profits are de minimus in the test year because of the relatively low oil price obtainable for this "old oil" under existing federal regulations. Likewise, the test year operating expenses for controlling subsidence are de minimus.

We will not reverse the nonoperative status of Edison's or ASIC's participation in the WF. However, to the extent that the WF operation resulted in expense and capital expenditures to Edison to control subsidence, these expenses and the capital requirements on this plant should have been and should be below the line items charged against the WF operations in lieu of damages which Edison or ASIC could have sought if they had not participated in the WF operation. Edison's shareholders profited from the WF development and its ratepayers paid the tab for additional costs related to that development. We will disallow any revenue requirement for test year 1979, or in the future, related to controlling subsidence at Edison's Long Beach plant, but we charge Edison with the responsibility of seeing that any necessary work to prevent subsidence is carried out. We will not require Edison to include net profits from the WF in Edison's other operating revenues.

B. EXPENSES

General

Testimony and exhibits of estimates for 1978 and for test year 1979 were presented by Edison and the Commission staff. Energy Commission witness testified on program elements in energy management, customer service, and informational expenses.

Wage Adjustment (for 1979 wage Increase)

Edison's payroll expenses and capitalized labor estimates reflect cumulative 7 percent increments in wages and salaries in 1978 and 1979, which are equal to a 14.49 percent increase over 1977 wage levels. The staff showing included Edison's wage adjustment for comparison purposes in 1978 and 1979, and then backed out the wage adjustments because settlements had not been reached between Edison and the Edison employee unions. The Commission staff did not challenge the reasonableness of the proposed increase or challenge the reasonableness of existing or estimated salary levels.

The staff argues that since wage agreements have not been negotiated for the 1979 test year no allowance should be made for such speculative expenses, which if not incurred, could result in a windfall for Edison. The staff contends that Edison would have no incentive to bargain for increases below the increment and that a 7 percent wage increase in 1979 would be inflationary. Staff counsel argues that supervisory and executive salaries be limited to 5 percent increases in 1978 and 1979 over 1977 levels to be consistent with then announced federal executive salary increase guidelines (President Carter is now proposing no increase for these executives) and that in view of Edison's work force reductions in recent years and the proposed level of employees in 1978 and 1979 there is no basis for adding additional

supervisory level or high level employees beyond 1977 levels; and that no executive salary in excess of \$100,000 should be allowed in Edison's allowed cost of service. Staff counsel cites Pacific Tel. & Tel. Co. v Public Util. Com.^{8/} (1965) 62 Cal 2d 634, 673-674 and a decline in productivity as evidenced by a more rapid increase in expenses compared to revenues, e.g., increases in customer account expenses between 1976 and 1979 of 42 percent^{9/} as the basis for his recommendation. He suggests that the Commission should consider basing Edison's rate increases on proportionate increases in productivity, which is consistent with the staff's recommendation for an outside management audit.

In D.67369 the Commission disallowed supervisory salaries actually paid by PT&T because (a) there was affirmative evidence comparing PT&T's operations with those of other divisions of the American Telephone & Telegraph Company; (b) PT&T declined to furnish GSA with specific information required for GSA's study; and (c) due to the lack of an affirmative showing by PT&T.

^{8/} The California Supreme Court decision on The Pacific Telephone and Telegraph Company's (PT&T) appeal of D.67369.

^{9/} The chairman of Edison's Board of Directors and chief executive officer, Mr. J. K. Horton, testified that certain large increases were very largely uncontrollable by Edison.

In this proceeding Edison's testimony compared its ratio of employees per thousand customers, which dropped from 5.173 to 4.658 between 1972 and 1976, to a drop from 7.075 to 6.959 for 20 of the largest^{10/} electric utilities; illustrated results of its cost-cutting efforts, including work simplification; described specific reviews by outside consultants which reduced its costs; and presented evidence on expanded and/or new (and sometimes conflicting) regulatory requirements, of different agencies, being met by Edison. The testimony covered Edison's public responses on environmental concerns, on questions on future energy supplies, on inquiries involving its operations and the impacts of its operation, on its ongoing and increasing efforts to motivate its customers to adopt a conservation ethic, including good load management practices, and on its research and development (R&D) efforts to achieve breakthroughs in new generating technologies. Edison's testimony discussed its budgeting and internal review processes. The only testimony regarding the reasonableness of executive salary levels was presented by Edison. Edison contends that its payroll tracks inflation, and that it needs to pay prevailing salaries to attract competent personnel, including executive and supervisory personnel, to implement its programs and to meet its obligations.

We are thus persuaded that the treatment accorded the executive salary level issue raised in D.67369 is inappropriate for this proceeding.

^{10/} Large utilities with at least a single A bond rating from Moodys and Standard & Poor's which derive at least 90 percent of their operating revenues from electric utility operations.

Furthermore, it would not be reasonable to require Edison to file a new application to test the validity of this element of Edison's expenses after 1979 contracts are negotiated and/or to create yet another balancing account to make Edison whole. We find it reasonable to incorporate a 7 percent increase, with modifications (discussed below), in 1979 adopted expenses and capitalized payroll. This results in an aggregate expense of \$16,154,000.

It would be appropriate for Edison's executives to set an example of wage and benefit restraints. Therefore, for ratemaking purposes, we will limit the payroll increase over 1978 levels to 5 percent for salaries in excess of \$40,000 reportable to the Commission under General Order No. 77-I. This 2 percent adjustment to reportable salaries of \$144,000 is deducted in Table I, Summary of Earnings. The magnitude of this adjustment does not justify a breakout of the total executive salary adjustment in the major expense categories.

Fuel and Purchased Power Costs (FPPC)

Although fuel and fuel-related expenses are being taken out of base rates by this decision, it is necessary to briefly discuss fuel and FPPC to arrive at working capital, and for use in determining overall cost of service per customer class for rate design purposes.

Mr. M. H. Kent, a general superintendent in Edison's Power Supply Department, testified on Edison's energy costs. Table 8-A of Exhibit 13 sets out his estimates of loads and resources available for meeting Edison's generating requirements and the related costs on an average-year basis. Mr. Hunt's testimony on the methodology he followed in developing Table 8-A provides a reasonable basis for setting rates in this proceeding. He estimated total FPPC of \$1,252,573,000, which are now included in base rates and in the ECABF. This amount does not include all fuel-related expenses contained in base rates. (See Footnote 3.)

The staff results of operation study does not contain estimates comparable to those in Table 8-A. The factors governing the previously described adjustments to remove FPPC from base rates also govern adjustments to FPPC.

The staff's sales estimate is higher than Edison's sales estimate. The staff does not contest Edison's electric system loss factor. Therefore, more system power would be required to meet the staff's sales estimate than to meet Edison's sales estimate. In order to make jurisdictional allocations, it is necessary to quantify FPPC expense related to FERC sales. The staff estimates of FERC fuel and purchased power expenses are based on Edison's methodology, including the assumption that fuel oil is used to generate additional system power.

A similar rationale would govern the calculation of FPPC using adopted sales. A further adjustment to the FPPC is to substitute gas for fuel oil to reflect the sharply increased gas supply estimate^{11/} received from Edison's principal gas supplier, SoCal. SoCal's gas should be priced out at the current effective rate. Air quality considerations will require Edison to use available gas supplies.

Edison's oil expense will be decreased and its gas expense will be increased. These changes will be reflected in Edison's ECABF.

^{11/} The ALJ directed Edison to supply an updated gas supply estimate, if available, in one of its briefs. Edison's closing brief states that the increase in gas supply would be equivalent to approximately 7 million barrels of fuel oil.

TURN's Offer of Proof on FPPC

TURN contends that there are many relevant and material issues relating to fuel costs and effect on operating cost rates that must be determined in the context of this general rate increase application.

At the first day of hearing in the case-in-chief, the ALJ ruled that there would not be cross-examination on the reasonableness of specific items involving fuel costs. The ALJ stated that TURN was advised on the record at the prehearing conference to test the reasonableness of fuel costs at Edison's pending ECAC proceeding (see RT 82).

TURN blamed financial problems, staffing problems, and its inability to participate in all proceedings it was interested in for not appearing at Edison's ECAC hearing.

This decision will exclude all FPPC from base rates. The Commission can adjust and it has adjusted Edison's FPPC in ECAC proceedings. Our staff will and other parties, including TURN, may test the reasonableness of FPPC in an ECAC proceeding. If Edison's costs are unreasonable, we will adjust them. We ratify the ALJ's ruling which precluded the examination of ECAC issues in this proceeding. However, as noted above, all costs (including FPPC) will be considered in determining rate of return by customer classes as a rate design consideration. Cost allocation will be one of the many factors considered in establishing just and reasonable base rates which exclude FPPC.

Power Production Expenses - Excluding Energy Costs (PP-EC)

We are, by this order, eliminating energy costs from base rates. The Commission staff excluded FPPC and all other energy-related expenses (except as noted in Footnote 3) to arrive at a PP-EC based on Edison's energy cost estimates modified to reflect higher staff sales estimates.

The PP-EC estimates of Edison and the staff, exclusive of wage adjustments, are \$245,094,000 and \$239,085,000, respectively, a difference of \$6,009,000. The adopted PP-EC expense is \$241,582,000.

Mr. Kirchem, a staff engineer, testified on PP-EC transmission expenses, distribution expenses, and customer accounts expenses. He adopted many of Edison's estimates when the trend by account did not differ markedly from Edison's estimates. Mr. E. J. Bresnahan, a general superintendent of Edison's Power Supply Department, testified on PP-EC and on transmission expenses.

Mr. Kirchem testified that Edison could display greater flexibility in trending estimates by using past and current variations to calculate individual expense escalation factors rather than use a uniform increase over 1978; that Edison could benefit by "using methods similar to a Planned Program Budgeting System" (PPBS), which would involve first-line supervisors in subsequent planning reviews and permit them to offer alternate suggestions; that certain 1974 maintenance deferrals have increased subsequent expenses; and that Edison should conduct a new detailed study of the economics and benefits of an in-house turbine repair facility. Mr. Kirchem testified that his estimate of Account 506, Miscellaneous Steam Power Expenses, is \$1,641,000 less than Edison's based upon a 1971-1976 trend which eliminated 1974 because the 1974 expense was abnormal (nearly double the 1973 expense). He noted that Edison estimated an increase from \$4,003,000 in 1976 to \$6,873,000 in 1977 (71.1 percent), while it estimated further increases of 4.2 percent in 1978 and 6.7 percent in 1979. He testified in Account 543, Hydraulic Power Generation, Maintenance and Reservoirs, Dams, and Waterways, 1978 and 1979 maintenance costs were higher because of maintenance deferred from prior years, and that expenses of \$204,000 in 1978 and \$134,000 in 1979 should each be spread over three years. He

also testified that seismic study costs of \$825,000 in 1979 should be spread over 10 years, and that various other maintenance items should be spread over future years ranging from 3 to 10 years as being more representative of future expenses.

In rebuttal, Mr. Bresnahan testified that it was reasonable to use an average 8.5 percent escalation factor for materials and services developed by Edison's Power Supply Department in consultation with its Procurement Division, Finance Organization, and Budgets Division rather than develop individual factors as was done by the staff. He did not include escalation for non-labor items where firm costs or contracts were in effect. He testified that Edison's bottoms-up method is a modified Zero Base Budgeting System (ZBBS) similar to the staff's recommended PPBS; that normalization of "unusual expenses" is inconsistent with Edison's normal estimating procedures and would unduly complicate its estimation of cost of service for ratemaking purposes.

Edison contends that the staff's testimony concerning unusually high expenses incurred in the initial operation of new combined-cycle units, including redesign of certain facilities, is in error, and that such costs are normally borne by the manufacturer.

Liquid Metal Fast Breeder Reactor (LMFBR)

TURN recommends exclusion of \$1,055,000 of expense for the LMFBR because no payment for this project was made in 1977 due to the failure of Congress to act on the project, there is not sufficient evidence to establish a reasonable estimate of Edison's expense for this activity in 1979, and because necessary congressional action might not occur before or during the test year.

Mr. Bresnahan testified that in Edison's discussions with the agency administering the program (FERC) it was advised that Congress would reinitiate the LMFBR program, perhaps on a modified basis, and that Edison intends to contribute over \$1,000,000 per year to the program to fulfill its obligations for several years into the future.

The staff's estimate did not make any adjustment to modify Edison's expenditures for the LMFBR.

Edison argues that: (1) TURN's position puts the matter of protecting Edison's past participation solely at the risk of its shareholders even though the program is beneficial to its ratepayers in terms of the adequacy and cost of its future power supplies; (2) if the program were to be discontinued, and the U.S. Government permits recovery by participants making prior program expenditures, the ratepayer would be made whole to the extent that the prior payments had been reflected in rates; (3) on the other hand, if TURN's position were adopted by the Commission, there would be a strong signal to Edison to decline further participation, and that the benefit of its past participation could be lost and its discontinued participation might result in a waiver of any rights Edison had to recover prior program payments; and (4) the only alternative to Edison's continued participation would be as a burden to its shareholders, which would be a no-win situation for its shareholders and should not be permitted.

It appears that the President and Congress are working towards a consensus which would continue and/or modify current breeder reactor research programs, which would make more effective use of existing uranium resources and reprocess spent nuclear fuel without creating weapons grade by-products. The governmental-

industry research program is presently tied to the Clinch River LMFBR program. The status of this project is presently uncertain since Congress did not pass an authorization bill in 1978. Edison has a continuing interest in production of nuclear power at San Onofre and through its participation in the Palo Verde, Arizona, nuclear plants. The development of a reliable spent fuel reprocessing facility, together with a methodology for making more effective use of existing uranium resources, is a desirable goal. We will consider Edison's contribution to specific breeder R&D reactor in ratemaking. However, it does not appear that Edison will be called upon to make such a contribution in 1979 and we will therefore disallow this expense for test year 1979. However, if the expense is incurred, we will consider an amortization in Edison's next general rate case.

Discussion on PP-EC

Edison's planned number of major scheduled generating unit overhauls will drop from 14 in 1978 to 4 in 1979. Edison's 1979 estimates reflect both increases and decreases compared to 1978 based on changed conditions and/or new programs. It anticipates that future dam repairs will result from new seismic studies based on upgraded standards. Its expenses reflect upgraded air pollution and nuclear power plant standards, including increased security requirements set by regulatory agencies. The staff's trending or amortizing methodology does not address changes occurring in the operation and maintenance of both existing and new power plants. Edison has responsibly experimented with time intervals between overhaul periods to optimize costs and system reliability under changing conditions.

Exhibit 16 shows scheduled and forced generating plant outage rates. The forced outage rate for coal-fired units was considerably higher for four years than for estimated test year 1979.

The 1977 recorded forced outage rates for nuclear power, combustion-turbine, and combined-cycle units were higher than estimated for 1979. We are concerned with the length of outages of various units. We will require Edison to submit a study of past outages to determine the measures and cost-effectiveness of such measures needed to reduce downtime of its equipment, and to evaluate the desirability of greater in-house repair capability.

In D.81919 dated September 25, 1973 in Edison's A.53488 we stated that "...it does not seem fair to amortize certain relatively routine maintenance charges unless past periods are examined for similar occasions and the expenses connected with those amortized into the test period. . . .".

Other Power Production Expense Adjustments.

Adopted FERC fuel and purchased power expenses reflect the FPPC modifications described above. The staff's estimates of FERC fuel, purchased power, and jurisdictional non-ECAC related fuel expenses were made by Edison (using staff inputs). Edison contends that: (1) the latter item is primarily for depreciation, ad valorem taxes, and operational and maintenance costs associated with Edison's fuel oil pipeline and storage system; (2) the staff's estimated sales estimates were higher than Edison's 1978 and 1979 estimates; (3) the staff's estimate for non-ECAC related fuel expenses was higher than Edison's estimate for 1978, but that these expenses were \$2,374,000 lower than Edison's \$23,805,000 estimate for 1979; and (4) the staff witness could not explain this discrepancy.

Mr. Kent testified on cross-examination that the largest component of this expense is the fuel oil pipeline operations which are derived by determination of the cost of operating and maintaining that system and admitted that this expense has a very indirect relationship to sales.

The staff's closing brief finally offered an explanation that the difference, as explained in Edison's work papers, is due to the jurisdictional allocation and to interest expenses, associated with the balancing account, included in the ECAC revenue. However, these working papers are not part of the evidentiary record. Based on our review of the record, it is apparent that neither of these estimates is reasonable. It is reasonable to average these estimates; therefore, we will adopt non-ECAC related fuel expenses of \$22,618,000.

Edison's estimate of PP-EC expenses are adopted, except for the LMFBR adjustment of \$1,055,000 and the other power production expense adjustments of \$1,187,000 resulting in a total PP-EC expense of \$241,582,000.

Transmission Expenses

The transmission expense estimates of Edison and of the staff, exclusive of wage adjustments, are \$40,532,000 and \$40,008,000, respectively, a difference of \$524,000. The adopted transmission expense is \$40,532,000.

Mr. Kirchem adopted all of Edison's estimates, except for Account 568, Supervision and Engineering, where he reduced Edison's \$2,093,000 estimate by \$377,000. For Account 573, Maintenance and Miscellaneous Transmission Plant, he reduced Edison's estimate of \$1,447,000 by \$147,000.

Mr. Kirchem testified that Edison has an excess of supervisory and management personnel and that he made the above-mentioned adjustment to reflect a more reasonable level. He used ratios of labor in Account 568 to the sum of nonsupervisory labor and non-labor expense and materials in transmission maintenance accounts.

In rebuttal, Mr. Bresnahan testified that the incorporation of other than labor costs in the derivation of the supervisory personnel ratio is inappropriate because the non-labor costs are a substantial part of total costs which can fluctuate widely. He indicated that growth of costs in this account result from general wage increases, and the allocation of overheads for supervision is between operation expenses, maintenance expenses, and plant accounts. He also testified that Edison's supervisory cost for maintenance of the Los Angeles Department of Water and Power's Sylmar DC Converter Station, in which Edison has an ownership interest, has increased along with the increase in manpower needed to operate that station. He testified that: (1) approximately one-sixth of the dollars in this account is charged directly to the account and the balance is allocated from overhead accounts in steam, hydro, substation, transmission accounts on a labor base which includes labor estimates for all of these activities; (2) for the years 1974 to 1976 the percentage of supervisory labor to total transmission maintenance labor varied from 21.0 to 22.0 percent and the 1979 estimate is at 21.9 percent; (3) his estimate of Account 573 is

based on a five-year average of 1972-1976 costs adjusted to a 1976-dollar base; and (4) this adjusted average was escalated to a 1979-dollar base compared to the staff's method which escalated the recorded 1972 to 1976 average.

Edison has justified the reasonableness of its proposed transmission expenses of \$40,532,000 for test year 1979.

Distribution Expenses

The distribution expense estimates of Edison and of the staff, exclusive of wage adjustments, are \$80,742,000 and \$80,282,000, a difference of \$460,000.

Edison's distribution expenses and customer account expenses were prepared by J. H. Hunt, a staff services manager in its Customer Service Department. Edison projects a 2,711-mile addition to its distribution system, based on a five-year average, in 1979. The staff considered that amount reasonable.

The staff's estimate for supervision and engineering accounts is \$295,000 lower than Edison's estimate. Mr. Kirchem prepared supervisory labor estimates using average ratios of supervisory labor expense to total other expense labor for the most recent six-year period and used trends in supervisory labor expense. His estimate, based on judgement, is less than either of the above estimates.

In rebuttal, Mr. Hunt testified that some of the work charged to distribution expenses is performed by the Power Supply Department and that such expenses are charged to distribution accounts to conform to the Uniform System of Accounts. He testified that the staff ignored Edison's detailed explanation of its supervisory allocation method, which is based on ratios developed from direct assignment of labor into operations, maintenance, customer accounts, storm-related work, plant construction, and other minor accounts. The staff, accordingly,

limited its review to the supervisory and nonsupervisory labor expense ratios in particular accounts and ignored the fact that overheads must follow the work performed.

The staff reduced Edison's estimate for meter maintenance expenses, for time-of-day (TOD) meter and load research activities,^{12/} and has reduced the estimated purchases of heavy-duty locking meter rings used to prevent unauthorized removal of meters and prevent bypassing of meters. The staff evaluated damages to meters as limited in scope^{13/} and considers Edison's estimate as excessive.

Edison's Mr. Hunt testified that a change in street light replacement cycles from three years to five years in 1975 and 1976 resulted in a low level of street light replacement expense for those years that: (1) his estimate for street light maintenance expense is based on a five-year replacement cycle; (2) the new, more efficient^{14/} high-pressure sodium lamps being installed should be replaced at four-year intervals according to the manufacturer's recommendation; (3) the replacement program now includes replacement of photocells at the time the lamps are replaced to increase electrical efficiency, although at greater distribution expense cost; and (4)

^{12/} These activities have resulted in a substantial decline in system energy losses.

^{13/} In D.89329 dated September 6, 1978 in C.10457 we found that from 1973 through 1977 41 meters were lost in an apartment complex through accidents, damage, and theft or other acts of vandalism. The complex contains 14 four-unit apartment buildings served by Edison.

^{14/} The new lamps and a 20,000 unit-per-year replacement of incandescent and mercury lamps with sodium lamps, not reflected in Edison's estimate, will reduce street light energy sales.

photocells were reclassified from an item of plant to an item of expense in 1977.

Mr. Hunt testified that: (1) Edison's maintenance and meter account includes repairs to TOD metering and special lock rings; (2) lock rings were first purchased and installed in 1976; (3) such lock rings are now being installed routinely in many areas and this will be a continuing expense; (4) repairs to the TOD meters and load survey equipment, used to implement programs mandated by the Commission, are increasing and will continue to increase beyond the test year as more customers are converted to TOD schedules as directed by the Commission; and (5) it is not appropriate to normalize such expenditures.

Edison has justified the reasonableness of its projected distribution expenses of \$80,742,000 for 1979.

15/ (Footnote No. 15 is not used.)

Customer Accounts Expense

The customer accounts estimates of Edison and of the staff, exclusive of wage adjustments, are \$46,065,000 and \$43,875,000, respectively, a difference of \$2,190,000 at present rates.

The adopted customer accounts expense is \$43,941,000 at present rates.

The staff reduced Edison's estimates for supervision by \$229,000, for customer records by \$1,430,000, for uncollectibles by \$365,000 at present rates (\$906,000 lower at proposed rates), and for miscellaneous customer accounts by \$166,000.

Adjustment of Supervisory Expense

The staff's supervisory expense adjustment, based on the methodology described in distribution expense, supra, is not persuasive. However, it will be reasonable to reduce Edison's estimate by \$100,000 to reflect supervisory savings related to the expense reduction in customer records and collection expense described below.

Adjustments to Customer Records and Collection Expense

Edison's customer records and collection expense include costs for a new leased computer system known as customer information service (CIS). Mr. Kirchem testified that he expects CIS-related cost savings due to improved customer record storage, greater available calculation capacity, and improved information retrieval capacity, and that because of CIS Edison should realize major benefits in new construction and in operation of the distribution system. He testified that Edison could not provide him with a cost-benefit analysis of the CIS system. He proposes a \$1 million reduction to normalize expenses related to the CIS system over a three-year period.

Mr. Hunt testified that: (1) the CIS system should eventually save approximately \$1,350,000 in labor expense, but not in 1979 the first year the system would be fully operational; (2) the data provided by the system is more refined than the system it is replacing; (3) in addition to existing information, Edison would be able to supply a customer with his kWh use-per-day history without making return calls to resolve disputes and to assist customer efforts in adjusting electric consumption; (4) there are higher initial and ongoing training expenses associated with the implementation of the CIS system; (5) life-line information, appliance data, TOD metering, and other new requirements have mandated even larger data files for the use of Edison's customers; (6) he anticipates the new CIS system will help stem these rapidly rising costs, but that there would not be any decrease in the near term future; (7) Edison is studying the possibility of acquiring rather than leasing the CIS system; and (8) Edison would initially use the CIS system to process on-line inquiries, then process on-line service orders, and finally process new customer accounting systems.

GSA contends that there is no evidence demonstrating customer dissatisfaction with the purportedly outdated manual system and that the ratepayers are being asked to pay an annual fee of \$4.5 million for an Edison vice president's admission to "computer-land". GSA believes that absent any proof of cost justification or necessary correction of service deficiencies, the entire expense should be disallowed.

Edison has justified its need for the CIS system to carry out its expanding responsibilities. The staff's amortization of CIS expense is not reasonable. The staff's estimate does not reflect any increase in meter reading or billing expenses to process the customer accounts tied to the higher staff customer estimate.

Edison's Account 903 labor expense estimate has increased from \$17,841,000 in 1978 to \$20,014,000 in 1979. The \$20,014,000 is \$538,000 higher than its escalated 1978 labor estimate of \$17,841,000 (increased to reflect a 7 percent wage increase and Edison's estimate of a 2 percent increase in customers with no productivity increase), and \$334,000 above a similar escalation using adopted customers. Thus, rather than decrease expenses with the CIS system, Edison's labor estimate shows a \$334,000 increase. Most of the potential \$1,350,000 cost savings from the CIS system should be realized in 1979. Therefore, we will adopt a \$1,400,000 reduction in Edison's customer records and collection expense, exclusive of the postage expense adjustment described below and the related \$100,000 reduction in supervisory labor described above.

The staff reduced Edison's postage expense by \$430,000 because an anticipated postage increase was not then final. Edison's closing brief states that its net postage rate had increased from 12 cents to 13 cents per letter rather than to the 14 cents it estimated. Based on the adopted number of customers, Edison's estimated postage expense should be reduced by \$215,000.

Uncollectible Expense

The staff's uncollectible expense ratio, based on a later five-year running average percentage than Edison's ratio, is adopted. The adopted uncollectible expense reflects adopted revenues.

Miscellaneous Customer Accounts Expense

The staff proposed a reduction of \$166,000 of miscellaneous customer accounts expense based on a review of functional data for 1974, 1975, and 1976. Mr. Kirchem noted an "enormous increase" of 185.6 percent in 1975 over 1974 and a willingness by Edison to stabilize these expenses in its 1977, 1978, and 1979 estimates. He "believes that the relatively recently identified items can be held under closer scrutiny and that further study will identify more items in miscellaneous that can be controlled."

Mr. Hunt testified that: (1) most of the 185.6 percent increase in miscellaneous customer account expenses in 1975 was primarily due to a transfer of existing accounts previously treated as general overheads which were now being charged by area of responsibility (i.e., expenses were charged to the activities generating the costs); (2) it was necessary to develop a method for assigning standard industrial classification (SIC) codes to nonresidential customer accounts to meet the requirements of the Energy Commission; (3) the initial SIC coding cost was \$391,000 in 1975; and (4) this cost was expected to drop to approximately a third of the initial level.

Edison's adoption of area of responsibility accounting should result in better budgeting and ratemaking estimates by functional activity. Edison's estimate of miscellaneous customer expense is reasonable.

Energy Management, Customer Service, and Informational (EM) Expenses

EM expenses include activities which encourage conservation and load management including the cost of supervision, labor, and administrative costs of staff and field personnel who plan, implement, and monitor conservation and load management programs, together with related material and advertising costs. The Commission staff recommended adoption of Edison's EM estimate

of \$20,000,000, exclusive of the wage adjustment, and recommended certain changes in program activities. The Energy Commission recommends expansion of all cost-effective EM activities. TURN contends that there is no evidence to support the reasonableness of the cost of Edison's conservation programs and recommends that they be disallowed. We will discuss the conservation issues and the positions of the parties, in a separate section of this decision, which led to our adoption of the \$20,000,000 requested by Edison for test year 1979.

Administrative and General (A&G) Expenses

The A&G estimates of Edison and of the staff are \$132,368,000 and \$116,554,000, exclusive of wage adjustments, a difference of \$15,814,000. The adopted A&G expense is \$125,295,000 at present rates and \$126,319,000 at authorized rates, all modified to exclude energy charges from franchise requirements. The witnesses were Mr. Scofield for Edison and Mr. R. U. Joshi for the staff. Mr. Joshi's methodology was to look at the last rate case he worked on, to look at each individual estimate in this case, to try to understand what went into each functional account, and to prepare a least square trend adjusted to both wage and material increases for each of 700 functions in A&G expenses. He testified that if there were no changes in activity in a particular functional account, the adjusted trend should be a horizontal line on a constant dollar basis. He noted a predominant upward expense trend in these functional accounts. This information was used as a launching point (rather than as an end point) for further studies. He and his colleagues talked to 20 of the people who developed Edison's estimates in all areas where there were significant changes whether up or down, and they sought out the basis for changes in a particular function and the

underlying reasons for making the change. One of the main areas of the increase in expenses resulted from increases in local, state, and federal regulatory requirements. He then reviewed the answers to his questions, Edison's estimates, the underlying work papers behind Edison's estimates, an operational audit report, the latest recorded data, and Edison's revised third quarter 1977 budget estimate for 1978 and 1979 (which was subsequently approved by Edison's management and made available to Mr. Joshi in the third week of December 1977). He developed his estimates in early 1978.

Mr. G. C. Infante, a staff financial examiner, recommended seven A&G adjustments. Mr. Joshi concurred with three adjustments. Mr. Joshi did not make an adjustment for site-tour expense or Vidal generating plant amortization^{16/} in the test years, and made no expense adjustments to limit first-class air fare expense to flights longer than three hours^{17/} or for charging ratepayers for nonutility-related flights made by the corporate aircraft. Edison, the staff, and TURN briefed A&G issues.

There are 12 areas of difference between the estimates of Mr. Scofield and Mr. Joshi which are described in the following paragraphs:

A&G Salaries, A&G Expenses, and A&G Transferred-Credit

The staff's estimate is \$1,951,000 less than Edison's estimate. The staff's estimate reduces Edison's estimate of a 2 percent increase in A&G employees to 1 percent, transfers a larger portion of the data processing department (DP) costs to other departments than Edison did, and reduces the activities of

^{16/} Edison did not include a Vidal plant amortization in its 1979 test year.

^{17/} Mr. Treacy indicated Edison's expenses increased \$3,000-\$4,000 for first-class fares in 1977 (RT 1279). Mr. Infante contends that the 2½-hour limit used by Edison is too short.

Edison's conservation and community services and customer services employees. The staff's estimates are higher than Edison's for quality assurance, engineering and construction, office services, building services, claims, and revenue requirements. The largest staff reduction is \$1,640,000 for DP.

Mr. Scofield testified that his test year estimate includes an annual lease cost of \$1,110,000 for a second IBM 370/168 computer and a further additional cost for a new smaller computer, but after he made his estimate Edison leased a third IBM 370/168 computer instead of the smaller computer. He testified that the computers were used for new and expanded programs and enumerated major projects. He contends that there was no study of ratepayer benefits related to added computer capacity because so much of the need for the computers relates to increasing regulatory requirements,^{18/} such as the development of a continuous property records system (RT 1313).

Edison further contends that Mr. Horton's testimony and the employee-per-customer data contained in Exhibit 98 show that it is continuing to decrease its ratio of employees to customers, although it should be obvious that such decrease cannot go on forever. Edison contends that the combination of annual customer increases of 2 to 3 percent, annual sales increases of 3 to 4 percent a year, and further inflation costs in the range of 7 to 9 percent a year (just to perform the same level of activities) results in a compound growth in total A&G expenditures in the range of 10 to 13 percent per year.

^{18/} State and federal regulatory requirements included in A&G expenses increased from \$4,950,000 in 1976 to an estimated \$9,157,000 in 1979. (See Exhibit 98.)

Edison's new and expanding responsibilities call for more people and equipment. Nonetheless, we conclude that an adjustment to A&G expenses is appropriate to reflect increased productivity. However, Mr. Joshi's proposed adjustment is excessive. The adopted A&G salaries and expenses are \$1,000,000 below Edison's estimate.

A&G expenses transferred to plant and clearing accounts reflect, in part, the assignment of certain personnel to construction or to operations and maintenance activities. Based on adopted test year expenses and plant additions, (but not the weighing of replacement plant and plant installed to meet environmental requirements), it is appropriate that we adopt Edison's A&G expenses transferred estimate. ✓

Employee Pensions and Benefits

The staff's pension contribution estimate is \$1,753,000 less than Edison's due to the difference in A&G employees, supra, to the staff's use of a later accrual rate set by Edison's actuary, differences in estimates for safety meetings, medical costs, and for employee relations. The staff also estimates a \$2,550,000 reduction in pension benefits in Account 926. Edison's pension benefits are negotiated on a five-year cycle. Mr. Scofield estimated a higher than average increase in 1979, the first full year following reopening of negotiations on such benefits. Edison argues that the staff used the same 1 percent increase of people receiving benefits as it did in numbers of employees, and that the staff's estimate fails to take into account the projected retirements of its older employees.

We are not convinced that it would be reasonable to use a higher than five-year average rate for increased benefits. We will adopt an adjustment of \$3,120,000 to Edison's Account No. 926 estimate to reflect the later pension accrual rate and the staff level of new benefits. Edison's remaining estimates are reasonable.

Franchise Requirements

Franchise requirements are derived from the development of a weighted average franchise tax ratio and the application of that ratio to the test year estimates of electric sales revenues, less uncollectibles, plus permit fees for work done in streets. The permit fees are not energy related and should be assigned to base rates. The franchise tax ratio should be the same for base rate revenues and for ECAC revenues. It appears that Edison applied a composite ratio of franchise taxes and of permit fees to base rates and ECAC revenues. Therefore, we will apply the higher staff base rate ratio to adopted electric sales revenues, less uncollectible expense. The energy-related franchise tax requirements and uncollectibles will be part of the ECAC requirements. The adopted amount is \$8,389,000 at present rates, and \$9,305,000 at authorized rates, all excluding energy costs.

Outside Service

The staff used nine months of recorded 1977 data on an annualized basis to reduce Edison's estimate for outside services by \$151,000. Edison contends that it has already made substantial reductions in this account; that the testimony of Mr. Horton concerning the development of in-house consultants and in-house training courses illustrates management's attitude to minimize cost increases; and that these policies have been effective and will be ongoing.

Edison's estimate is reasonable and is adopted.

Property Insurance, Injuries, and Damages

The staff increased Edison's property insurance estimates by \$500,000 to reflect updated information on premiums for boilers and nuclear plant.

The staff reduced Edison's estimate for injuries and damages by \$234,000 based on an expense reduction for safety meetings. The argument on this issue hinges on whether or not more rigorous and costly safety requirements are imposed on Edison by reason of new legislation in the health and safety field. Edison's position is reasonable. The staff is inconsistent in projecting fewer injuries and in reducing expense for training meetings to accomplish that end.

Mr. Scofield's rebuttal testimony contends that the staff has been inconsistent in its updating to reflect 1977 recorded data on its estimates, since the staff used an updated ratio for uncollectible accounts based on a more current five-year period than was available to Edison at the time of filing and that if consideration is given to the uncollectible update, similar consideration should be given to those portions of Accounts 924 and 925 which relate to amounts of self-insurance reserves for property damage, injuries, and damages, respectively.

He testified that property damage in the various operating expense accounts would increase by \$828,000 using the 1973-1977 average as opposed to the 1972-1976 average of Edison accepted by staff witnesses and that the charge for injuries and damages using the 1973-1977 average adjusted to current price levels would increase its expenses by \$614,000.

Mr. Scofield's rebuttal does not constitute a major update. It is reasonable to reflect the latest recorded information for making this type of adjustment. Therefore, the adopted property insurance expenses and the injuries and damages expenses total \$10,459,000, which incorporates the staff's upward insurance adjustment of \$500,000 and includes all of Mr. Scofield's adjustments to self-insurance reserves in these accounts (based on 1973 to 1977 data), rather than spread the changes in self-insurance reserves to the various expense accounts. (See page 6 of Exhibit 101.)

Regulatory Cost

The staff reduced Edison's regulatory expense estimate of \$343,000 to \$247,000, a difference of \$96,000 based on fewer hearing days in this proceeding, issuance of this decision in 1978, and a drop off in expense when no rate case is pending. Edison contends that it appears before other agencies.

There is a need to arrest the trend of increases in regulatory expenses. (See Footnote 18 on the impact of regulation on Edison's A&G expenses.) With this in mind, we have instituted an expedited complaint procedure to lessen expenses to all parties in processing smaller formal complaints and our Consumer Affairs Branch is developing new procedures to resolve more disputes on an informal rather than on a formal complaint basis. We also direct our staff to work with Edison, FERC, the Energy Commission, and other agencies which share jurisdiction with this Commission on various aspects of Edison's operations and with interested parties to determine what information is necessary, what simplification in requests is possible, and whether common formats can be worked out for getting information in areas of shared responsibility to reduce expenses charged to Edison's customers and to reduce governmental

expenditures. California's citizens have voted for curtailment of unnecessary governmental expenditures.

We will adopt the staff's adjustment. Substantial savings of expenses in other operating expense accounts will occur due to the above-described actions already taken and if redundant requests from several regulatory authorities can be curtailed.

Miscellaneous General Expense

The miscellaneous general expense estimates of Edison and of the staff are \$19,896,000 and \$13,842,000, respectively, a difference of \$6,054,000 which includes reductions of \$4,967,000 for R&D contributions to the Electric Power Research Institute's (EPRI) research program, \$94,000 for Edison Electric Institute (EEI) advertising and 20 percent of other Edison contributions to EEI, of \$325,000 for donations and scholarships, and of \$240,000 for dues and donations.

Mr. Joshi testified that his \$4,967,000 reduction reflects a lower 1978 assessment of Edison by EPRI, an electrical trade association, and that he evaluated the reasonableness of Edison's R&D projects by the criteria based upon the following language in D.86595 dated November 2, 1976 in SoCal's A.55345:

"SoCal should consider future projects suggested by the staff evaluation of its conservation program in C.9642 in planning future R&D programs.

"SoCal should continue to supply the staff with data on existing and proposed R&D projects on January 15th of each year and should indicate whether the activities would assist in its conservation efforts, in environmental improvement, in pollution control, and in improving its operations. The data should include information regarding the engineering feasibility, cost-benefit ratio, and other potential benefits for each new project. The

staff should evaluate the R&D projects and prepare a memorandum to the Commission with its preliminary recommendation on the reasonableness of the R&D projects for ratemaking purposes. Staff evaluation of the reasonableness of the R&D projects should be judged by the guidelines listed below:

- "1. The project should support the R&D objectives of SoCal and the Commission. SoCal must comply with the then existing environmental regulations.
 - "2. The project should lead to environmental improvement and/or increased safety.
 - "3. The project should support the Commission's conservation objectives and promote conservation by efficient resource use, and by reducing and/or shifting system load.
 - "4. The project should help to develop new resources and/or processes and to advance supply technology.
 - "5. The project should help to improve operating efficiency.
 - "6. SoCal's priority setting process should minimize expense on those concepts which have a low probability of success.
- "SoCal should provide the staff with an update each June 15th. The report should include the expenditures incurred for each project and any changes made to the original R&D programs included in the January 15th filing."

The staff witness utilized the above-mentioned criteria in evaluating whether or not to include the projected R&D expenditures of Edison for test year 1979. He found that Edison's own programs were well-balanced in areas of resources development and environmental improvement. The R&D reductions recommended by the staff are for Edison's contributions to EPRI, the research arm of EBI. The staff witness testified that he also used these criteria in evaluating EPRI programs and deleted EPRI projects not conforming to these criteria.

The staff's opening brief contends that: (1) the EPRI allocations are largely left with Edison for local research, (2) the staff's EPRI adjustment was not challenged by Edison and must stand as a reasonable adjustment; and (3) in weighing the levels of R&D expenses proposed by Edison, the Commission should note that recorded expenditures have been below forecasted levels for the years 1974-1977.

Edison's reply brief states that R&D expenses recorded in Account 930 are, in fact, higher for those years than projected R&D expenses in Account 930.

The bulk of the Account 930 R&D expenses are for Edison's contribution to EPRI, e.g., \$7,261,000 of \$8,809,000 in Edison's revised 1979 forecast. Edison's estimated 1979 R&D expenses in Account 930 are approximately \$5,400,000 above its projected expenses for the years 1974-1977. Edison's R&D expenses in other operating expense accounts were approximately \$2,000,000 below forecast^{19/} for the same period.

^{19/} The net amount includes an increase over planned expenditures of over \$7,000,000 in 1974 for sulfate and particulate reduction R&D expense.

Edison contends that \$4,967,000 of the \$5,806,000 staff's adjustment to Account 930.2, Miscellaneous General Expense, relates to R&D and that it provided the staff with updated A&G expenses above the estimates contained in its filing, at the staff's request, which show increases of about \$3,500,000 for 1978 and of about \$700,000 for 1979. Edison contends that this amount includes increases in 1979 R&D expenses from \$7,477,000 to \$8,809,000, a difference of \$1,332,000, which are shown in Exhibit 92, and that the staff has apparently ignored these increases.

We will adopt the staff's reduction of \$4,967,000 for contributions to EPRI because these expenditures did not meet the R&D criteria set forth in D.86595, supra. However, it is reasonable to reflect Edison's planned \$1,332,000 program expansion for projects which meet these criteria in the adopted A&G expenses.

The staff's suggestion that Edison seek out innovative uses for Edison's vast Kaiparowits reserves should be implemented.^{20/}

The staff should advise Edison of its objection to particular R&D programs or to Edison's proposed commitment to such programs on a timely basis to provide Edison with an opportunity to reorder its priorities and to avoid making unnecessary commitments.

Donations and Public Relations

Edison's \$94,000 contribution to EEI advertising may fairly represent the position it advocates but it does not meet the criteria we have set forth for such advertising, (see D.86794, pages 50-51b), and will be disallowed. TURN contends that all advertising and public relations expenses in A&G and in the conservation area be disallowed because Edison failed to meet the above-mentioned criteria because of the lack of required detail in its showing, and because of an inadequate in-depth staff review. ✓

^{20/} Edison and the Texaco Oil Company plan to gasify coal for possible use at Edison's Cool Water plant.

The staff's \$668,000 adjustment for public relations activities reflects updated wage and cost levels since 1976 but no increase (and possibly a reduction) in the level of public relations activities from that authorized in D.86794. The staff also made a \$325,000 adjustment to eliminate college and scholarship grants. These adjustments follow our criteria for disallowing donations and certain public relations expenses. The staff adjustments are reasonable and are adopted.

Amortizations

The staff did not take exception to any of Edison's proposed amortizations for test year 1979; however, TURN did.

Mr. L. O. Chubb, a supervising plant appraiser for Edison, testified that a combination of changing load requirements and cost escalation caused by delays, changes in environmental requirements, and continuing environmental challenges caused Edison and the other project participants to drop their plans for building the coal-fired Kaiparowits power project in southern Utah, and that projected Kaiparowits project costs increased from \$450 per kW, including transmission, to \$1,200 per kW (see Exhibit 12, pages 3-8 and 3-9).

He also testified that: (1) Edison dropped plans to go forward on a proposed high temperature gas-cooled nuclear reactor plant at Vidal based on its changing energy requirements and on increases in estimated costs from \$600 per kW to approximately \$1,600 per kW; (2) Edison also studied the feasibility of constructing a larger plant at Vidal, at a later date, to realize an economy in scale; and (3) after completion of the new feasibility study Edison discontinued its efforts to go forward at Vidal. (See Exhibit 12, pages 3-9.)

Edison proposed an amortization allowance of \$865,000 from the Vidal plant in 1978, the final year of its write-off, and a \$1,080,000 amortization of its Kaiparowits plant write-off in 1978 and in 1979. In rebuttal, Mr. Scofield testified that while the amortization period for the Vidal plant had ended in 1978, Edison's rates never reflected this amortization, and that it would be reasonable for the Commission to give recognition to this amortization, not included in his 1979 estimate, which is not tied to a specific time frame, in future rates.

Edison contends that the Vidal abandonment cost, based on a five-year amortization period, should be recognized for ratemaking purposes in this proceeding as well as the Kaiparowits abandonment cost which the staff did not take exception to; and that the prudence of its incurring these costs is amply demonstrated by projected load growth as of the time these projects were being investigated and it was obviously desirable to avoid additional expenditures once it had determined that a project was not feasible - as was the case with both Vidal and Kaiparowits. Edison points out that the Commission has recognized similar abandonment costs for its Huntington Beach plant for ratemaking purposes.

The staff and TURN contend that Edison's proposed addition of a 1979 amortization allowance for Vidal would be retroactive ratemaking and a violation of the Regulatory Lag Plan because the Commission had established policy on this issue. Edison provided an offer of proof on this issue. The ALJ ruled that the Commission had not established policy on the Vidal plant but had disallowed inclusion of the amortization because Edison had not previously made an adequate showing on this issue and that Edison's evidence would be considered on this issue. The staff cited past Commission decisions for disallowing the amortization in this proceeding and made no further review of the issue.

TURN contends that Edison has not met its burden of proof as to the prudence of the Kaiparowits abandonment nor does it reflect the cost savings of the abandonment of this project. TURN recommends a \$1,080,000 disallowance of the amortization for test year 1979.

We disagree with TURN's Kaiparowits adjustment and will include the allowance for the Kaiparowits amortization in the test year. Edison has justified this expense.

While the staff objects to the retroactive ratemaking feature of inclusion of an allowance for amortization of the Vidal plant in 1979, it has no problem with proposing that a 1977 gain of \$1,035,000 from the sale of a portion of its Rosemead property^{21/} should be amortized over five years.

Edison has the obligation of reviewing the adequacy of its capacity to meet projected growth in load on a timely basis and in an economical manner. Edison may have demonstrated the equity of amortizing the Vidal plant in this proceeding. However, in dealing with operating expenses for a utility as large as Edison, we determined that going back to a pre-test year period and attempting to spread large expense increases into future periods was not appropriate. Neither would it be appropriate to include allowance for Vidal in the test year nor would it be appropriate to amortize the gain on the Rosemead property into the test year. These modifications in Edison's revenue requirements are not of sufficient magnitude to require such special treatment, unlike our treatment of nuclear decommissioning costs which are discussed in depreciation expenses.

^{21/} Edison contends that the land had never been included in its plant or rate base or reflected in its cost of service; that the land in question was purchased in 1950 for \$32,231 and was held as nonutility plant by Edison and by ASIC until 1976; that the land was put in Edison's plant held for future use account for part of 1976 and 1977 as a possible site for expansion of Edison's general office; but that Edison subsequently used other property in the area for its general office expansion and sold the parcel.

We note that we could approach the amortization problem by establishing a reasonable future level for all types of amortizations for test year ratemaking which could include the Vidal amortization, the Kaiparowits amortization, the Rosemead gain amortization, and a potential gain in a pending condemnation settlement.^{22/} The approach adopted herein will provide for the amortization of known items being amortized in the test year, i.e., Kaiparowits.

Rents

The staff reduced Edison's rental estimates by \$260,000 to reflect a lower amount for telecommunications rental expense due to the installation of a new digital dispatch security monitoring system (which would provide more direct information about system operations during emergency conditions). Edison contends that Mr. Joshi did not recognize a transfer of \$300,000 due to an accounting change, and that Mr. Joshi misunderstood the function of its new system, which was to supplement its existing communications not to replace it. The staff argues that: (1) just because Edison spent more money for new systems does not mean that it is reasonable to allow these increased expenses in its rates; (2) Edison adopts new systems, procedures, and equipment without reflecting any offsetting cost reductions under old procedures; and (3) Edison's failure to reduce expenses resulted in a staff A&G productivity adjustment and a staff recommendation for an outside management study of Edison's operations.

^{22/} This relates to the taking of Edison's right-of-way to construct the San Gabriel River Freeway. Mr. Hughes recommends that the proceeds of the settlement be applied against Edison's plant balance. We concur.

The need for effective internal communications to provide up-to-date information on what is happening in Edison's system during emergency conditions (in order to limit the magnitude or the duration of interruptions of service) justifies the added expense for Edison's supplementary communications system.

Maintenance of General Plant

The staff proposes a \$635,000 adjustment to this account, \$559,000 of which relates to the Building Services Department. The staff questioned the reasonableness of Edison's expenditures for maintenance, such as for unnecessary lawn seeding.

The evidence illustrates that a reduction of this account is appropriate, but of a lesser magnitude than proposed by the staff. We will, therefore, reduce Edison's estimate by \$300,000 for this account.

Productivity Adjustment

Mr. Joshi reduced his total estimate of A&G expense, including labor and non-labor items, by \$2,554,000, or 2 percent. Mr. Joshi testified that if the Commission is going to recognize a 7 percent wage increase and essentially an 8 percent inflation adjustment as proposed by Edison, they should also consider an offsetting productivity increase adjustment when they consider the total account.

Mr. Joshi testified that: (1) he sought to find the reasons for the increase in A&G expenses from the adopted level for test year 1976 to the proposed level for 1979 (\$82,932,000 to \$132,368,000, both on a jurisdictional basis); (2) he questioned the claim that Edison was doing a wonderful job due to its better management decisions and to the use of advanced technology, but he could not find where cost reductions had occurred; and (3) he reviewed a productivity index developed by the Federal Government indicating a 4 percent per year increase in productivity

in the gas and electric industries and modified the factor to a 2 percent increase in productivity because conservation activities and increased regulatory requirements tend to decrease productivity (on a cost-per-kWh basis).

Edison contends that: (1) the staff estimate for 1979 does not reflect post-1976 increases in wage levels or increases in the cost of other items contained in its A&G estimate due to inflation; (2) the staff estimate provides nothing for growth in plant, customers, sales, employees, new activities, and for meeting new requirements; (3) the further staff adjustment of 2 percent was made after reducing Edison's estimates by \$13,184,000 (10.6 percent), exclusive of the staff's wage adjustment and franchise requirements (which are based on revenues); (4) this type of adjustment is contrary to Commission policy; and (5) A&G expenses are the least susceptible group of expenses to reflect productivity improvements since they include insurance premiums and reserves, franchise requirements, medical costs, negotiated employee benefits, and increasing emphasis on R&D.

We have previously adjusted expenses to appropriate levels for ratemaking purposes to reflect productivity gains. The staff has not demonstrated the reasonableness of making a further productivity adjustment.

Depreciation Expense

Staff counsel and TURN challenged Edison's depreciation rates which Edison changed because of revised salvage values.

The witnesses on electric plant, depreciation expense and reserve for depreciation, and rate base were Mr. Chubb, for Edison, and Mr. M. Radpour, for the staff. Their differences in depreciation expense relate to the differences in utility plant estimates. The adopted depreciation expense is \$175,238,000. ✓

Mr. Chubb testified that Edison used the average service lives reflected in D.86794, and that Edison made a comprehensive salvage study and a detailed engineering estimate of decommissioning costs for nuclear generation plant, then developed composite depreciation rates by class and subclass of plant (which were used to compute depreciation expense) because future plant estimates are not made on a prime-account basis. He testified that Edison followed the Commission's standard practice U-4 to derive new depreciation accrual rates to recover the original cost of fixed capital, less estimated net salvage, over the useful life of the property by means of an equitable plan of charges to operating expenses or to clearing accounts, and that net salvage is the amount received from materials, less the labor cost, to remove plant when it is retired from service; and that if the labor cost in removing the retired plant exceeds the materials salvaged, a negative net salvage is produced which can only be recovered over the service life of the plant by increasing the depreciation rate. He testified that a 1973 salvage study discussed in D.86794 indicated a reduction in estimated net salvage; that estimated net salvage ratios for 1978 were developed after a complete review of all plant accounts; that production (excluding nuclear plant) transmission, distribution, and general plant were all trended through 1978 from a 10-year historical data base (through 1975) for gross salvage and removal cost by plant accounts using

specially developed computer programs. Salvage ratios were based upon an analysis of this data, and the study showed the net salvage expected to be realized when plant facilities are retired has declined significantly in recent years and that this is primarily due to a more rapid increase in labor costs compared to salvage values for material. Also, the study demonstrated the need to make adjustments to cover the changes in net salvage, and the indicated changes were so great for the projected 1978 net salvage ratios for certain accounts that only partial adjustments were made to avoid too radical a change in depreciation rates. Further depreciation rate changes were made by incorporating 1976 information into the study base to develop future net salvage percentages for 1979. He testified that the major reasons for significant changes in net salvage ratios were: (a) trended data indicates removal costs are increasing while gross salvage values are decreasing; (b) Edison would incur substantial decommissioning costs at its San Onofre nuclear generating station Unit No. 1 based on a consultant's study; (c) the trended data indicates that removal costs and gross salvage costs are both increasing, but that removal costs were generally increasing more rapidly; and (d) there were changes in gross salvage value for fixed wing company aircraft. He also compared Edison's composite depreciation rates with 50 large utilities. This comparison shows that Edison's rates have been below the industry average. Mr. Chubb testified that in many cases newer plant has a shorter service life due to technological advances or new methods of meeting service requirements, and that the greatest impact of depreciation rate changes reflects the realization that estimated net salvage figures for all types of plant have been changing rapidly. He believes the impact of inflation is to reduce

net salvage values, and he anticipated a trend of further reductions in net salvage values (which will continue to require higher depreciation accrual rates to recover the cost of plant, less net salvage, over the service life of the plant). Edison's depreciation rates rose from a 2.9 percent composite rate for 1974 through 1977 to 3.4 percent in 1978 and to 3.47 percent in 1979.

Mr. Radpour reviewed and agreed with Edison's methodology in determining salvage values. He did not make an independent review of the reasonableness of underlying elements in the study, e.g., labor costs.

Nuclear Decommissioning Costs

Edison seeks to increase its composite nuclear plant depreciation rate from approximately 3.62 percent to 5.89 percent, primarily due to the inclusion of approximately \$36,210,000 in estimated future decommissioning costs with respect to San Onofre nuclear generating station Unit No. 1. When a nuclear plant reaches the end of its useful life, it must be decommissioned. This process involves (1) the dismantlement and disposal of the facility, and (2) site restoration to protect the health and safety of the public.

Edison engaged a consultant knowledgeable in the nuclear field to estimate its future decommissioning costs. The consultant's estimate of \$36,210,000 contemplates a final shutdown date at the end of 1997, and restoration of the site essentially to its preconstruction stage shortly after the year 2023.

Under current Internal Revenue Service (IRS) regulations, decommissioning costs are tax deductible only in the year paid or incurred because IRS does not recognize accruals for future decommissioning costs as current tax deductions. An estimated \$19,253,000 related to the tax benefit of decommissioning costs is anticipated to be realized beginning 18 years from now.

Edison proposes to amortize what is essentially a negative salvage credit over the remaining life of the plant. This amortization would not be reflected as an expense on its income tax return.

Mr. Radpour reviewed and adopted Edison's decommissioning estimate and methodology.

Mr. Hughes, a staff financial examiner, testified that Edison's proposed accounting and ratemaking treatments of the decommissioning costs give no current consideration to the tax benefit that Edison will receive at the time of decommissioning. He recommends that gross revenues be increased only \$36,210,000 over the life of the plant to cover estimated decommissioning costs (or about \$2,012,000 per year compared to the annual cost to ratepayers under Edison's proposal of \$4,296,000 per year). Mr. Hughes proposes that the depreciation accrual be based upon the difference between the estimated annual decommissioning costs and imputed tax payment reductions to IRS over the life of the property divided by the estimated remaining life of the property. He contends that this net amount of \$16,957,000, plus the tax benefit of \$19,253,000 which would be received at the time of decommissioning, would fully cover the decommissioning expense. The following tabulation is a comparison of decommissioning cost proposals prepared by Mr. Hughes:

Comparison of Decommissioning Cost Proposals

Estimated Cost to 1997

<u>Line No.</u>		<u>Edison</u>	<u>Staff (Finance Div.)</u>
1	Gross Revenue Requirement over life of Property	\$77,332,000	\$36,210,000
2	Tax Payments to IRS over life of Property	<u>41,122,000</u>	<u>19,253,000</u>
3	Subtotal	\$36,210,000	\$16,957,000
4	Tax Credits at Time of Decom- missioning (18 years base)	19,253,000	19,253,000
5	Balance Available for Decom- missioning <u>1/</u> (line 3 + 4)	<u>\$55,463,000</u>	<u>\$36,210,000</u>
6	Annual Cost to Ratepayers (line 1 + 18 years)	\$ 4,296,000	\$ 2,012,000

1/ Supposedly this will be available to reduce the revenue requirement in 1997 or thereafter, depending on the salvage averaging procedures in effect for ratemaking in that year.

Mr. Hughes contends that the straight-line remaining life concept is the most appropriate method of recognizing the decommissioning costs which may ultimately be incurred. He expressed concern about the possibility of burying decommissioning accruals in the depreciation reserve account and recommends that decommissioning cost records should be kept on an individual plant basis, either through the use of separate subaccounts in the depreciation reserve or, as a minimum, by the use of memorandum accounts, and that as decommissioning estimates become more precise for a program designed to dispose of radioactive materials, these costs may ultimately become so large and so different from ordinary depreciation accruals as to require special conditions.

He also testified that there should be memorandum accounts showing the cumulative decommissioning costs and the effects on Edison over the life of the property. For accounting purposes the staff recommends that decommissioning costs for each nuclear plant be accounted for on a unit basis, i.e., keeping separate and distinct records for each plant. He testified that while mass accounting is suitable for similar property units, such as telephone poles or meters where the cost of keeping individual records for each unit would be prohibitive, it is simply not appropriate for large dissimilar plant items. Edison agreed that it could maintain records to identify these accruals.

These staff accounting recommendations are reasonable and will be adopted.

Edison's Rebuttal on Nuclear Decommissioning

In rebuttal, Mr. Pignatelli contends that the balance available for decommissioning, \$36,210,000, is identical under both proposals and that the annual cost to the ratepayer would be \$2,012,000 under either proposal because of the reduction in Edison's tax expenses in the year the decommissioning is incurred, and that this effect was not considered by Mr. Hughes. He stated Edison's current costs of plant removal are \$10,000,000 per year, which are reflected in its cost of service and in the computation of its income tax; and that the \$36,210,000 cost does not appear to be out of line with the \$10,000,000 figure. Edison contends that as a general proposition it favors normalization, but it objects to Mr. Hughes' selective treatment for this item which it believes disregards the revenue requirements associated with these increases in depreciation expense. He explained that Edison's proposal does not affect current income tax expense and simply applies the existing Commission flow-through policy applicable to tax benefits to tax burdens associated with increased depreciation expense; whereas

Mr. Hughes' approach simply transfers tax benefits which may be realized in the future to current ratepayers in order to maximize tax benefits and minimize the tax burdens on present ratepayers at the expense of future ratepayers. Edison contends that Mr. Hughes' proposal is contrary to sound ratemaking policy and is inequitable.

Position of TURN

TURN attacks the expertise and the quality of the investigation made by Mr. Radpour and contends that it is not fair to assess another \$16,000,000 in depreciation expense on Edison's ratepayers as a result of Edison's studies.

TURN contends that the decommissioning expense estimate, prepared by Edison's consultant, is a self-serving document and that no portion of Edison's proposal should be adopted in this proceeding. TURN states that the company and the staff adopted the consultant's estimate of a service life of 18 years, but that the study suggests alternate service lives of 27 and 45^{23/} years as well. The selection of a different service life figure will, according to TURN, better determine the annual cost that should be collected from ratepayers when and if it is justified. TURN points out that there is no comparable cost experience with which to compare the consultant's study since no nuclear plant has ever been decommissioned.

Position of Staff Counsel

Staff counsel contends that the composite depreciation rate claimed by Edison represents a substantial and historically

23/ TURN is confusing the completion dates for decommissioning and decontamination with service life.

disproportionate growth in recent years, and that the evidence herein does not support this rate. He recommends adoption of Mr. Hughes' proposal for nuclear decommissioning.

Discussion on Depreciation

Edison prepared a study and demonstrated that past salvage allowances have been overstated and that its current estimates are reasonable. If we do not give recognition to the need for increasing salvage values at this time, the need for the adjustment will grow in magnitude in the future. We will adopt Edison's estimated accrual rates and net salvage percentages in determining depreciation expense.

Discussion on Nuclear Decommissioning Costs

Edison made a good faith effort to ascertain the magnitude of potential decommissioning expense for its nuclear plant. New regulatory requirements and inflation will undoubtedly affect the final cost of decommissioning this plant. Further estimates of the magnitude of this cost should be made from time to time as additional information becomes available. This additional information should be reflected in the remaining life reviews of Edison's nuclear plant to attempt to recover ultimate salvage costs over the life of the plant.

The U.S. Nuclear Regulatory Commission (NRC), Docket No. PRM 50-22, is a rule-making procedure on decommissioning costs. On December 30, 1977 this Commission notified NRC that it believed that the establishment of a nationwide method of handling decommissioning costs as proposed in the rule-making petition would interfere with the ratemaking functions now left to the states, and that recovering the decommissioning costs

from ratepayers over the life of the property through straight-line remaining life depreciation accruals is preferable to posting bonds to assure that funds will be available to cover decommissioning costs as proposed in the rule-making petition. The Commission's comments to the NRC in the PRM 50-22 make no mention of the tax implications involved in this issue.

The federal proposal for requiring the posting of bonds to cover decommissioning costs does not indicate a disposition on the part of the Federal Government to pay for such decommissioning costs. In the event the Federal Government does decide to pay for decommissioning costs, these payments should appropriately be treated as a positive net salvage which can be utilized in reducing Edison's cost of operations.

It would be reasonable to consider the future decommissioning costs of the San Onofre plant at this time on the best evidence available, i.e., the study prepared by Edison's consultant. The Finance Division's proposal would shift expense for decommissioning costs to future ratepayers rather than passing on to present ratepayers the full expense effect. Imputing a tax savings effect that Edison does not now realize means, then, that today's ratepayer would bear less than his proportionate share of nuclear decommissioning expense (as it is estimated at this time). Not only is that result unfair, but it tends to make nuclear power appear to be less expensive today than is actually the case. Accordingly, we find that the test year decommissioning expense estimated by Edison and the Operations Division to be reasonable.

Taxes Other Than Income

The staff's estimate for ad valorem taxes uses lower tax rates based on 1977 recorded data. Edison concedes that its estimate, which includes an increasing trend in property tax rates, was not appropriate.

Edison argues that we would err in assuming that reduced property tax burdens on business properties resulting from the passage of Article XIII-A to the California Constitution (the Jarvis-Gann Initiative) would not be offset by other tax increases, and that no action should be taken until further clarification of the total tax situation develops.

Edison has filed Advice Letter No. 470-E effective September 1, 1978 to reduce its electric rates by 0.078 cents per kWh in accordance with D.89130 and D.89175 in OII 19 and has established a "tax initiative balancing account". We will reduce Edison's estimate of ad valorem and miscellaneous property taxes of \$121,224,000 to \$58,529,000 by using the 1.25 percent California ad valorem tax rate reflected in Edison's Advice Letter No. 470-E as applied to adopted taxable plant in California. The tax initiative balancing account factor should be eliminated at this time. The balancing account will be further adjusted when actual ad valorem taxes have been identified.

The adopted payroll tax of \$12,348,000 reflects the adjustments to payroll adopted herein and reflects the current social security base of \$22,900 and social security tax rate of 6.13 percent for tax in test year 1979.

Income Taxes

Mr. J. S. Pignatelli, Edison's manager, and Mr. Joshi both calculated income taxes based upon statutory tax rates and arrived at estimated taxes of \$25,160,000 and \$51,573,000, respectively. There was considerable disagreement between Edison and the staff concerning the appropriate tax treatment for certain items where Edison was challenging IRS policies, as well as differences due to the higher staff estimates for operating revenues and lower estimates for operating expenses.

In addition, both Mr. Pignatelli and Mr. Angerbauer, a staff accountant, testified on effective tax rates based on the consolidated income tax return of Edison and its subsidiaries.

We will first deal with issues related to differences in taxes at statutory rates, excluding those flowing from the previously discussed differences in revenues and expenses.

Liberalized Depreciation

The differences are in the allowance for liberalized depreciation which relate to depreciation on weighted average plant. The adopted deductions for liberalized depreciation of \$195,230,000 for federal income tax and \$179,740,000 for California Corporation Franchise Tax (CCFT) reflect depreciation on adopted weighted average plant and the applicable tax laws.

Interest Charges

The staff's estimate of interest charges is \$2,671,000 higher than Edison's based on a higher interest rate in the staff's later estimate of weighted average long-term debt of 7.08 percent. The adopted interest expense deduction reflects the weighted average long-term debt at 7.14 percent adopted in the rate of return section herein, and the current short-term interest rate for commercial paper which is 8.6 percent. Use of a 10.0 percent prime rate is not appropriate.

Repair Allowance Expense

The staff's estimate, which is \$11,179,000 higher than Edison's estimate, incorporates repair allowance figures at the levels used by Edison in its tax return and adds repair allowances for hydro and steam plant additions which were not reflected in Edison's returns. Edison has based its repair allowance estimate for the test year upon IRS Revenue Ruling 78-67, which defines expenditures eligible for a repair allowance treatment (which does not include an allowance for certain extensions to existing facilities).

Edison contends that the staff's estimate of deductible repair allowance reflects Edison's aggressive tax position in deducting expenditures for additions to existing facilities, which it thinks might be included in an appropriate application of IRS Code Section 1.167(a)-11; Edison points out its position may well be reversed on audit by IRS; and that adoption of the staff's treatment of the repair allowance, as well as of contributions in aid of construction, would have a chilling impact on its incentive to aggressively seek to minimize its income tax liability. The loss of incentive, according to Edison, would result if the Commission were to tell Edison that its cost of service for ratemaking purposes will be based on tax liability positions relating to utility operations as reflected in recently filed returns, even where such returns have challenged IRS rulings, and that it would be very reluctant to challenge such rulings even though it could ultimately benefit its ratepayers in terms of lower tax burdens reflected in rates for service.

We are touched by this noble concern on Edison's part for the welfare of its ratepayers; however, we note that if we adopt Edison's tax position and the IRS disallows the claimed exemption, Edison's shareholders would be protected. However, if Edison's claims are sustained, its shareholders, not its customers, would reap the immediate benefits of that deduction.

While we recognize Edison's dilemma in taking an aggressive stance to minimize its tax expense, we reject its position that its shareholders should be protected and that its ratepayers should not benefit from the claimed disallowance on its income tax returns. Therefore, we will adopt the staff's approach for this reduction for test year purposes to protect the ratepayers' interest. However, we will permit Edison to set up a deferred debit in its retained earnings account to accrue

disallowed optional repair allowance tax deductions which were not considered herein when the issue is finally decided, and to permit Edison to seek an amortization of this amount in its next rate case. This approach is reasonable and would provide a means of making Edison whole if its tax position is rejected by the courts. ✓

Contributions in Aid of Construction

The treatment of contributions in aid of construction poses a similar problem to that of the repair allowance. Edison contends that IRS Revenue Ruling 75-557 requires it to treat contributions for plant to be treated as taxable income. The Commission's Resolution No. FA-569 urges Congress to consider a legislative solution to this problem to reverse Revenue Ruling 75-557. Edison believes that Mr. Angerbauer incorrectly interpreted Revenue Ruling 75-557 as applying only to water utilities and that the ruling on its face belies this conclusion.^{24/} Edison points out that the electric industry has attempted to and is continuing its efforts to secure legislation which would statutorily exempt such contributions from taxable income in the same manner that such exemptions were previously granted by Congress in the Tax Reform Act 1976 for water and sewage disposal utilities.

HR 13511, the recently enacted Revenue Act of 1978, clarifies this problem by conforming the treatment of contributions of electric, gas, and steam utilities to that accorded water and sewage utilities. Customer connection fees, i.e., amounts paid to connect the customer's line to a mainline (but not including costs for the mainline), are treated as taxable income. Edison is not now collecting such customer connection fees.

^{24/} The issue is whether Revenue Ruling 58-555 and 66-353 are superseded by Revenue Ruling 75-557 for electric utilities. (Also see U.S. v Chicago, Burlington, and Quincy Railroad Co. (1973) 412 US 401 37 L ed 2d 30 and I. Hayutin and S. Hayutin et al. v Commission (1974) 508 F 2d.)

Investment Tax Credit (ITC)

The staff proposes a 1979 ITC, on the first 4 percent of eligible plant, based on the staff's estimate of qualifying 1979 plant. The optional repair allowance (discussed above) reduces the plant base eligible for an ITC. Edison used a five-year average of the ITC for the years 1975 through 1979, inclusive. Edison's recorded and estimated 4 percent credits for this period are \$6,754,000, \$13,425,000, \$17,882,000, \$22,179,000, and \$25,700,000, or a five-year total of \$85,940,000 and a five-year average of \$17,188,000.

Edison's and the staff's estimates both reflect ratable flow-through of the 6 percent portion of the ITC. The total ITC estimates are \$18,917,000 for Edison and \$23,557,000 for the staff, a difference of \$6,369,000.

Mr. Joshi testified that the Commission has used a five-year averaging method for some utilities to smooth out year-to-year variations of the credit; however, his evaluation of Edison's ITC for the period 1974 through 1979 shows a build up without peaks and valleys.

Mr. Pignatelli testified that it would be desirable to spread the benefits of the ITC over the life of the plant thereby providing the tax benefit to the ratepayers who are paying for the facility over its operating life. He believes that the five-year average approach for the first 4 percent credit is a step in that direction, and that it is inconsistent to normalize the ITC when normalization would benefit the ratepayers and to use the test year ITC when that would benefit the ratepayers.

The staff contends that its treatment of the initial 4 percent credit is consistent with that adopted in D.86794, and that Edison was inconsistent in opposing a five-year average of ITC for ratemaking purposes in its two prior rate cases. The staff states that adoption of Edison's lower ITC estimate (\$6.4 million) would increase Edison's rates by \$13.5 million and "the attendant increased burden of \$18 million^{25/} on Edison's rate-payers." Edison objects to being singled out among major utilities in not being allowed to use a five-year average of the 4 percent ITC, and contends that its earlier objection to the staff's normalization went to applying that method to the 6 percent portion of the ITC, which it ratably flows through.

Discussion on ITC

The five-year averaging is appropriate where there are substantial increases and decreases in the amount of the credit, not where there are year-to-year increases. Therefore, we will utilize the 1979 credit for the 4 percent ITC based on qualifying plant. If in a future proceeding it appears that there are substantial increases and decreases in the credit, we would consider a five-year averaging method spanning the period from two years before the test year to two years after the test year to provide a more representative sample upon which to base the credit.

Conservation Adjustment

The staff eliminated a conservation adjustment treated as a deduction from taxable income and an offsetting deferred income tax incorporated in Edison's estimates. The net effect in both cases has zero impact on income taxes. We will adopt the staff's treatment since we have eliminated the conservation adjustment balancing account.

^{25/} The derivation of this amount is unclear.

State Income Taxes

Edison anticipated an increase in the CCFT rate from 9 percent to 10 percent when it prepared its estimates. We will utilize the current 9 percent tax rate in the adopted CCFT of \$14,013,000. ✓

Federal Income Tax Changes

The adopted federal income taxes of \$30,240,000 ✓ incorporate the above-mentioned HR 13511 tax law revisions, including a reduction in statutory federal income tax rates, which will be in effect during the tax year. Edison's rate-payers should benefit from these tax savings.

Effective Tax Rates

Background

Mr. Pignatelli prepared Edison's income tax estimates and subsequently prepared Exhibits 18, 18-1, and 19, reconciliations of Edison's consolidated income tax returns to Edison's utility income taxes for the recorded years 1972 through 1976 and for the estimated years 1977 through 1979. He was cross-examined extensively on these exhibits and on effective tax rates incorporated in Edison's annual reports to its shareholders.

The issue of whether Edison's consolidated income tax returns could be inspected by parties other than the staff was briefed while hearings were in progress. TURN contended that since Edison is seeking tax expense in its results of operation, it had no legitimate claim or privilege to prevent all parties from inspecting its tax returns, and to determine the accounts and records upon which Edison's exhibits are based in order to understand the tax reconciliation materials offered by Edison. The ALJ directed Edison to make its 1976 consolidated income tax return available to TURN for its inspection to assist TURN's development of the record, but not the earlier returns requested by TURN.

TURN did not establish the relevance of its review of the earlier consolidated income tax returns to establishment of a tax expense for test year 1979 herein. As indicated above, the tax allowance in this proceeding will be based upon the adopted revenues and expenses, the statutory tax rates, and the issue of effective versus statutory tax rates will be resolved in OII 24.

Later in the proceeding, Mr. Angerbauer prepared Exhibit 80, at staff counsel's request, to develop effective tax rates. Mr. Angerbauer made no recommendation on adoption of an effective tax rate in this proceeding.

D.89315 dated September 6, 1978 in A.55509 and A.55510, Phase II, discusses similar contentions and conflicting positions on appropriate income tax allowances to those raised herein as follows:

"Arriving at an estimate of federal and state income tax expense for a future test year is one of the most complex and troublesome issues in ratemaking. A test year is an estimated results of operations, comprised of various ratemaking revenue, expense (including taxes) and rate base estimates, which is adopted by the Commission as a basis of determining prospective revenue requirement and the reasonableness of proposed rates. We anticipate the estimated test year components we adopt will reasonably approximate actual operating results. But given the multitude of variables in the real world of utility operation, we recognize, as does anyone who observes the ratemaking process, that projected test year results can never exactly correlate with actual experience. The income tax component of the results of operation is particularly sensitive to many variables. For example, unusual expenses unanticipated when the operating expense (non-tax) component is established will mean less tax liability, because more expense deductions will be available to the utility.

Likewise, higher than estimated revenues will mean a higher tax bill. And the situation gets more complex for energy utilities given the deferral of expense recovery for energy costs (Purchased Gas Adjustment and Energy Cost Adjustment balancing account expense recovery procedures). Interested parties have expressed the view that we should strictly allow for 'taxes as paid' when setting rates. Arriving at an adopted test year tax expense estimate that will reflect taxes 'as paid', or exactly correlate with actual expense during the prospective test year, is as difficult as estimating exactly the revenues to be realized by the utility.

"The ALJ's proposed report points out another complexity. In regulatory ratemaking the adopted income tax allowance depends on what types of expense deductions are or are not considered in arriving at the estimated income tax liability. Appendix B is a table (taken from the ALJ's proposed report) which illustrates the impact that such deductions can have on tax expense.

"The proposed report recommended that PG&E be ordered to reduce rates \$56.5 million annually, and make refunds, on the basis that actual tax expense differed from the expense allowed in the Phase I decision. We are of the opinion that it would be unreasonable to adopt this recommendation, and we will discuss why. We appreciate the efforts of the interested parties who developed the record and made recommendations, which brings to our attention issues that should be fully explored and addressed. Ratemaking, to operate in the public interest, should be based on estimates that as accurately as possible reflect a reasonable allowance for income tax expense.

"If we were to adopt the recommendations put forth in the proposed report there could be a substantial effect on post tax interest coverage and the utility's earnings. We adopted a reasonable rate of return and return on equity for PG&E in the Phase I decision which recognized a certain interest coverage. Further, the rates

authorized (based on our authorized rate of return) were determined by our traditional methodology of calculating and estimating income tax expense. To unilaterally change the method used to estimate income tax expenses without considering the effect on post tax interest coverage and return on equity (in a proceeding where authorized rate of return could, if warranted, be adjusted) would not be fair or in the best interests of maintaining financially sound utilities. Therefore, Phase II of these proceedings is simply not the forum where we can make drastic changes in calculating income tax expense. In fact, a general rate proceeding involving only one utility is not the best forum in which to obtain the most fully developed record on such proposed sweeping policy changes. For that reason, we are today issuing Order Instituting Investigation No. 24, joining all major utilities as respondents, to consider recommendations similar to those presented in the proposed report, and other recommendations on how we should estimate income tax expense for ratemaking. We expect full participation by our staff divisions, the respondent utilities, consumer interest groups, and the financial community on these important policy issues. Whatever we adopt as policy upon completion of the investigation will be implemented in appropriate proceedings affecting each utility's rates. This procedure is, we again stress, adopted so that we do not play blind-man's buff, with possible adverse ramifications, on a less than adequate evidentiary record."

Having covered the general background on the complexity of ratemaking and income tax expense and the reasons for the issuance of OII 24, we will discuss specific points raised by the parties herein on effective tax rates.

Staff Counsel's Position

Staff counsel argues that: (1) the Commission clearly has the authority and duty to limit cost of service to actual expenses (see Federal Power Commission v United Gas Pipeline Company (1967) 386 US 237, 68 PUR 3d 321, City and County of San Francisco v Public Utilities Commission (1971) 6 Cal 3d 119, and Pacific Tel. and Tel. Co. v Public Utilities Com. (1965) 6 Cal 2d 634); (2) federal income taxes are a legitimate item of expense and one under which utilities are entitled to recover in cost of service, but only at the level of such taxes lawfully assessed and, in fact, paid by the utilities (see Galveston Electric Co. v City of Galveston (1922) 258 US 398; (3) his comments on federal income taxes could apply equally to any other tax or any other "phantom" expense; (4) in the course of evolution of complex tax laws, a serious gap has developed between the level of taxes claimed by utilities and allowed by regulatory agencies for cost of service and for the level of taxes which, in fact, were paid to the taxing authorities; (5) regulatory agencies have often provided tax allowances in rate structures that are based on taxes claimed by utilities rather than being related to the taxes as paid; (6) conditions exist with respect to California energy utilities in areas apart from the issue of accelerated depreciation (see City of Los Angeles v Public Util. Com. (1975) 15 Cal 3d); (7) a thorough exposition of the differences between taxes claimed, allowed, and paid is found in ALJ Coffey's proposed report in PG&E's A.55509 dated November 17, 1977; (8) evidence with respect to these differences and recommendations to more narrowly close the gap between taxes allowed and taxes paid has been made by the Finance Division in A.55509, in PG&E's A.57284, and in SoCal's A.57639, but unfortunately no such showing or recommendations were made on this record;

(9) Exhibit 80 points out that federal taxes booked and paid per Edison's consolidated income tax returns for 1972 to 1976 and estimated for 1977 show an effective combined federal and state tax rate ranging from 17.8 percent to 38.5 percent, whereas Edison claims a 52 percent rate; and (10) Edison was allowed \$62,831,000 in federal income taxes by D.85294 but paid \$11,597,000, and it was allowed \$18,520,000 for California taxes but paid only \$9,852,000, or a total difference between the allowance and the taxes paid of \$60,172,000. Staff counsel's opening brief also states that:

"The foregoing is not the entire picture, however. For 1977, Edison projects negative federal tax liability of \$54,165,000, for 1978, a negative \$4,562,000 and for 1979, a negative \$2,262,000. (Vol. 19, Tr. 1667-8.) These amounts will be recovered in the form of cash refunds by Edison as charges against the 1974, 1975 and 1976 taxes. (Vol. 19, Tr. 1668-1669.) In the face of these figures, it should be observed that Edison is seeking \$168,000,000 for federal income taxes at proposed rates. (Vol. 19, Tr. 1673.) Thus if Edison's request were granted in full, it would pay no income taxes in 1979, generate a \$2,262,000 refund from earlier years and collect \$168,000,000 for alleged taxes during 1979.

"What is to be done?"

"Staff counsel recommends that a tax allowance be based on an average of the effective rates in Table 4 of Exhibit 80, or alternatively that rates be fixed subject to refund and the matter reopened with directions to the Staff to make showings seeking to equalize taxes claimed and paid."

Position of TURN

TURN supported many of the positions advanced by staff counsel and reiterated its support of certain tax treatments contained in ALJ Coffey's proposed report in A.55509 - which were not adopted by the Commission.

Position of Edison

Edison's response to the above-quoted position of staff counsel is as follows:

"As we suggested earlier, ...perhaps the best example of Staff counsel's lack of objectivity or expertise in this highly technical area is his conclusionary statement comparing the negative Federal tax liability estimated for 1979 of \$2.3 million based on present rates with the \$168 (sic) million included for income taxes at proposed rates. He states: 'Thus if Edison's request were granted in full, it would pay no income taxes in 1979, generate a \$2,262,000 refund from earlier years and collect \$168,000,000 (sic) for alleged taxes during 1979.' Obviously, if Edison's rates are increased by an amount producing increases in revenue of \$316 million for the test year 1979, its taxes estimated on the basis of present rates would change. To state that the taxes estimated at present rates will be the liability the Company incurs after receiving the additional revenue resulting from the proposed rates is so erroneous on its face as to require no further comment. At the very least, it demonstrates the complete lack of reliability in any of Staff counsel's recommendations. They should therefore be disregarded in toto."

"5/ He apparently meant to refer to 186 million (Ex. 13, Table 20-A)."

Edison contends that in citing Federal Power Commission v United Gas Pipeline Company staff counsel ignores the U.S. Supreme Court's recognition in that same case of the propriety of separating regulated and unregulated activities as follows:

"The determination of the allowance (for taxes as a cost of service) as a general proposition is obviously within the jurisdiction of the Commission. Ratemaking is, of course subject to the rule that the income and expense of unregulated and regulated activities should be segregated." ✓

Edison also cites the FPC ruling in Re Florida Gas Transmission Company (1972) 47 FPC 341, 363 which states:

"In our opinion a utility should be regulated on the basis of its being an independent entity; that a utility should be considered as nearly as possible on its own merits and not on those of its affiliates."

Edison also argues that taxes properly includable in cost of service should be those based on the revenue, expenses, and plant included in cost of service and on applicable tax laws, and that Edison provides its customers with the tax benefits associated with accelerated depreciation which was the subject of the telephone cases cited by staff counsel. Edison states that these telephone cases and references to the ALJ's proposed report in PG&E's then pending rate case are clearly not applicable to the issues being discussed herein and should not be given any consideration. Edison argues that the testimony of staff witness Angerbauer demonstrated that the difference between the level of taxes adopted in D.85294 and the taxes actually paid in 1976 resulted from recorded net income before taxes being substantially under the net income before taxes reflected in the test year estimates, which were based on the authorized rate of return, and from the inclusion

in the comparison of substantial tax benefits which are flowed through to the ratepayer under other procedures approved by this Commission. Further, Edison believes that Mr. Angerbauer demonstrated a lack of support for the staff counsel's recommendation regarding the ratemaking treatment for state and federal income tax purposes, either on a regulatory principle or on an accounting principle and that Mr. Angerbauer, in fact, testified that the effective tax rates contained in Table 4 of Exhibit 20 were irrelevant, and that Mr. Angerbauer testified that if the net-to-gross multiplier is 2, Edison would pay an additional 50 cents in income taxes for every additional dollar authorized by the Commission. Edison notes that the effective tax rates contained in its annual reports are based on FPC reporting requirements which include deferred taxes, book income, and other items which make them inapplicable to the Commission's ratemaking procedures.

Discussion

There is indeed a problem of equitably determining a proper tax allowance given the complexities of current tax law. The issue of whether to base taxes based on effective tax rates as opposed to statutory tax rates will be aired further and more thoroughly in OII 24. However, it is patently unfair to chastise Edison for receiving a tax expense windfall in comparing recorded information, including taxes related to the level of the ECAC balancing account with the pro forma base rates established in a decision which was not in effect until after the test year. (Partial rate relief was in effect during the test year.) If we base an analysis on phantom taxes which are based on phantom income as a basis for setting rates, we may find utilities providing phantom service.

TURN's allegation that there is insufficient evidence on this record to make a lawful and proper assessment of taxes for the test year is unsupported.

TURN also argues that the effect of the ECAC allowance should be estimated and reflected in the tax allowance. We have excluded income tax impacts from the ECAC procedure. Edison will pay additional income taxes when the balancing account is positive and will pay lower taxes when there is a negative balance.

TURN desires that all of the tax benefits of Edison's subsidiaries accrue to Edison's ratepayers. This issue will be considered in OII 24. The issue posed in our discussion of the Wilmington Oil Field of whether both profits and losses should be considered may be germane to that determination.

TURN also seeks to consider the tax benefits flowing from Mono Power which are considered in ECAC proceedings.

Rate Base

The following tabulation shows the elements of the rate base estimates of Edison (\$4,310,900,000) and of the staff (\$4,119,800,000), and the adopted rate base of \$4,168,801,000: ✓

Item	Staff (\$M) (A)	Edison (\$M) (B)	Adopted (\$M) (C)
<u>Rate Base</u>			
<u>Fixed Capital-Beginning of Year</u>			
Plant in Service	\$5,187,000	\$5,199,600	\$5,199,600
Nuclear Fuel	7,400	7,400	7,400
CWIP in Operation	71,300	71,300	71,300
Property Held for Future Use	65,600	71,100	65,600
Net Additions: Weighted Average	67,200	98,900	98,900
Pollution Control Equipment (Nonoperative CWIP Year-end Bal.)	-	97,100	-
Total Fixed Capital	5,398,500	5,545,400	5,442,800
<u>Adjustments</u>			
Customer Advances for Construction	(31,200)	(31,200)	(31,200)
Total Adjustments	(31,200)	(31,200)	(31,200)
<u>Working Capital</u>			
Fuel Stock - Fossil	206,600	214,400	213,200
Material and Supplies	23,900	23,900	23,900
Working Cash Allowance	155,100 ^{a/}	197,500 ^{b/}	144,791 ^{c/}
Total Working Capital	385,600	435,800	341,891
Total before Deductions for Reserves	5,752,900	5,950,000	5,796,358
<u>Deductions for Reserves</u>			
Depreciation	1,584,800	1,585,100	1,583,490
Taxes - Accelerated Amortization	20,000	20,000	20,000
Taxes - Liberalized Depreciation	7,400	7,400	7,400
Unfunded Pension Reserve	13,800	13,800	13,800
Deferred Investment Tax Credit	-	12,800	-
Total Deductions for Reserves	1,626,000	1,639,100	1,624,690
Wage Adjustment	(7,100)	-	-
Rate Base	4,119,800	4,310,900	4,168,801

(Red Figure)

^{a/} Revenues based on 8.80 percent rate of return.^{b/} Revenues based on 6.61 percent rate of return.^{c/} Revenues based on 9.60 percent rate of return adopted herein.

Plant in Service

Edison prepares periodic plant estimates as a part of its budgeting process to determine its need for outside financing and for its rate case presentations. Edison used a fourth quarter 1976 plant budget estimate as the basis of its showing in this proceeding. These plant budget estimates each contain three elements as follows: (1) a printout of thousands of items contained in the budget; (2) monthly summaries of item (1) above; and (3) a summary printout which contains last minute updates as of the end of the budget period. These updates reflect actual recordation of items cleared to plant, including overheads.

The staff witness used Edison's fourth quarter 1976 budget in preparing his estimates. He requested information on the status of listed projects from Edison personnel and requested updated information. He testified that certain plant items had been cancelled or deferred to a period beyond test year 1979. He sought to propose to include plant scheduled for completion by the test year in his estimate on a weighted basis. The staff witness testified that he received the monthly summary budget and the updated summary budget on December 7, 1977 and that since he was well along in the preparation of his estimate, which was completed between January 10 and January 15, 1978, he did not use the third quarter 1977 budget.

During cross-examination of the staff, Edison contended that the staff witness improperly eliminated items which had been postponed or cancelled and ignored the more than offsetting additions to its budget contained in the third quarter 1977 estimate, and that the deletions utilized by the staff were deletions made in the same time frame as the additions contained in its updated budget. The staff, therefore, according to Edison, improperly used updated material by considering reductions without considering contemporaneous additions to plant, and that this approach is an inequitable "one-way street" approach to ratemaking. Because the staff witness was unable to satisfactorily explain the basis of his adjustments, the ALJ allowed Edison to put on its rebuttal testimony served on April 3, 1978, based on the third quarter 1977 budget, but only to establish its contention that the new additions in the updated budget outweighed the reductions.

There were vehement objections to this procedure by the staff, by TURN, and by GSA which contended that this procedure would constitute a major update which would not be in conformity with the Regulatory Lag Plan, and that all elements of Edison's showing would have to be updated if this procedure were followed. The ALJ stated that the staff could review the third quarter 1977 budget and present testimony on it. The initial cross-examination of the staff witness was completed on April 20, 1978. He completed another assignment and began his analysis of the third quarter 1977 budget on May 10, 1978 with a request for the working papers backing up that budget. He testified on new exhibits on May 18, 1978 and on May 22, 1978.

The ALJ permitted surrebuttal by Edison, over a staff objection. The staff argued that it could not adequately question Edison's witness who worked on developing plant budget estimates day in and day out.

In surrebuttal, Mr. Chubb testified that the staff adjustments deleted plant construction which had already been completed and charged to plant, including "carryover" adjustments^{26/} of \$10,000,000 of additional 1977 recorded additions to plant in service for recorded over-budget costs for its nuclear facilities at San Onofre and \$9.5 million of additional accrued construction overheads for its Cool Water combined-cycle project; and that the third quarter 1977 budget reflected average net additions of \$23.5 million over its estimate.

The staff contends that the Commission should not consider updating rate base without consideration of other offsetting revenue requirement factors, such as increased revenues, expenses, and decreased taxes, and that consideration of Edison's rebuttal Exhibits 103 and 103-1 would be contrary to the prohibition against updating estimates included in the Regulatory Lag Plan and would be contrary to well-established ratemaking principles which require matching of revenues, expenses, and rate bases within one test period (see Pacific Tel. and Tel. Co. v Public Util. Com. (1965) 62 C 2d 634 at 674).

^{26/} Information incorporated in a plant balance or in a construction work in progress balance not reflected in the budget of record but based on recorded information.

Edison contends that the third quarter 1977 budget was furnished to the staff pursuant to a staff data request; that the staff Exhibit 128, which reflects the update of 1979 plant figures based on information available in the third quarter of 1977 budget time frame, improperly excludes the above-described completed additions to plant in service; that the exclusion of these items is wrong from an estimating standpoint; that following the staff's methodology is improper in terms of developing realistic estimates for the test year. It contends that adoption of these estimates by the Commission would be inequitable and deny the opportunity for it to earn the rate of return found reasonable by the Commission.

Edison also contends that the staff attempt to relate the PT&T case to this issue, which, by the staff's own discussion of the case, makes it clear that post-test period adjustments were involved there, not simply adjustments to test year data based on information unavailable at the time of filing.

Edison's fourth quarter 1976 estimates of beginning-of-year plant and of average weighted additions are reasonable. Edison's rebuttal testimony was permitted on the basis of proving the validity of its criticism of the staff's analysis. We will not adopt Edison's suggestion that if the Commission should desire to consider the increases in net plant reflected in its third quarter 1977 budget, it would not object to such a procedure.

We note that to the extent that later information is used, there should be a two-way street in its utilization, and the end result should reflect both additions and deletions and any adjustments deemed appropriate.

Property Held for Future Use

The staff's adjustments totalling \$5,500,000 for property held for future use are reasonable. These adjustments include adjustments for properties transferred to nonutility property, land acquired for right-of-way where the projects have been cancelled, capitalization of an allowance for funds during construction (AFDC) on land, and to reflect the sale of the parcel of land considered for expansion of its headquarters in the city of Rosemead.

Pollution Control and Replacement Plant

Edison proposes to include \$97.1 million of nonoperative construction work in progress in plant on a full test year basis for pollution control facilities. Edison contends that its

inclusion of environmental projects covering air pollution, water pollution, solid waste disposal, and noise abatement facilities did not contribute to increase capacity requirements of the system and are, therefore, not associated with increased load, additional kWh sales, or additional revenues. It contends that it would be reasonable to include these facilities in its rate base and concurrently discontinue its AFDC to improve its cash-flow position, and that this treatment is consistent with FPC Order No. 555.

The staff contends that: (1) Edison has again included this item on an unweighted basis, relying on FPC Order No. 555, (2) the Commission is not bound in its ratemaking authority by that ruling, and (3) it has not adopted that ruling as a supplement to the Federal Uniform System of Accounts. That FPC Order No. 555 was issued on November 8, 1976 and Edison's argument, according to the staff, should have been addressed to this Commission in Edison's Petition for Rehearing of D.86794 (last general rate proceeding), which was decided on December 21, 1976.

Edison submitted an offer of proof on this issue and the ALJ stated that this was an issue which had been decided on a policy basis (D.86794 and D.87828) and that no testimony would be taken on the issue.

Edison is unduly burdening the record by attempting to relitigate this issue. Pollution control equipment and replacement plant should be included on a weighted basis as these items are cleared to operative plant. Since there was no evidence of any of this plant being put in service during the test year, none of the \$97.1 million will be included in the adopted rate base.

Working Capital

Working capital includes amounts required for fuel stock, for materials and supplies, for prepayments, and for working cash which are added to Edison's fixed capital. The working cash requirement is included in rate base so that investors may be compensated for capital which they have supplied to enable the company to operate efficiently and economically and for which they would not otherwise be compensated. The staff adopted Edison's estimate for materials and supplies.

Fuel Stock

The estimates of Edison and the staff for stored fuel stock are \$214,400,000 and \$205,600,000, respectively, a difference of \$7,800,000. The adopted fuel stock included in Edison's working capital is \$213,200,000.

The largest difference of \$7,700,000 reflects the staff's inclusion of the cost of sufficient stored fuel to meet Edison's stored fuel needs for 90 days less a 25 percent adjustment for unpaid inventory invoices. Edison developed its allowance from its estimated end-of-month inventories.

Edison contends that the staff erred in not considering the following items: (1) the inventory effect of oil purchased to meet its annual growth rate of approximately 4 percent, which in itself understates the inventory by \$6.1 million when adjusted for unpaid invoices; (2) there are 2.6 million barrels of its fuel oil inventory in "dead storage space", in its storage tanks, and in its fuel oil pipeline; and (3) the staff also deleted \$1.7 million for

27/ (Footnote No. 27 not used.)

fuel oil inventory at its San Onofre and Long Beach plants which is required to supply standby generators at these locations.

The staff's estimate also increased the fuel inventory by \$1,600,000 to reflect the additional generating load on the system resulting from the higher staff kWh sales estimates.

The growth in Edison's sales is reflected in the adopted fuel stock which reflects adopted sales. We recognize that Edison cannot fine tune its purchases to precisely coincide with its fuel requirements (see Exhibit 54), but we do not see the justification of basing the stock on an inventory basis rather than on the 90-day burn basis used by the staff.

Edison requires its oil pipeline transportation system to conduct its operations. The alternative would be more costly and more polluting oil transport using trucks and/or trains. Edison needs a source of fuel for its standby generators. Edison would require costly underground pumping vaults if it tried to drain its storage tanks. The issue of such dead storage was discussed in D.84577 dated June 24, 1975 in Edison's A.55198, which adopted the FIFO method of costing the volumes of oil in dead storage (see mimeo. pages 4 and 5). Edison's estimate for dead storage and for standby storage is reasonable.

Working Cash

Edison contends that it developed its working cash allowance based on the method previously used by the staff in Edison's last rate proceeding by developing a computer analysis of average revenue lag days and expense lag days based on its

recent experience collecting revenues and in paying expenses. The staff's estimate of working cash allowance is \$42,400,000 less than Edison's estimate. The staff's working cash reduction and the disposition of the proposed reductions are as follows:

- (1) A \$5,300,000 staff reduction, related to elimination of nonutility-related interest-bearing deposits and funds for construction, is adopted.
- (2) The \$1,000,000 staff reduction, based upon its review of employee contributed deposits for accrued vacations, employee stock plan, and for contributions to the employee stock plan, should be modified to reflect the payroll used in the adopted expenses.
- (3) A \$10,900,000 staff reduction is due to the staff using the last authorized rate of return of 8.8 percent compared to Edison's use of its rate of return at present rates. The adopted rate of return of 9.6 percent is utilized in the adopted working cash. ✓
- (4) A \$3,500,000 staff reduction relates to the method of computation of lag days for payment of ad valorem taxes. Edison erred in its inclusion of certain assets as personality items taxable in December of the tax year. The staff's lag day estimate, applied to adopted ad valorem taxes, is reasonable and is adopted.
- (5) The remaining difference of \$21,700,000 is due to differences in the respective estimates and differences in lag days.

The adopted working cash allowance reflects staff's estimates of lag days as applied to adopted revenues and expenses.

Reductions for Reserves (ITC and Depreciation)

Edison reduced its rate base by \$12,800,000 for the deferred 4 percent portion of the ITC based on its five-year average for tax purposes. Since we adopted the staff's tax treatment, there is no deferred tax on this portion of the credit and the staff's position is adopted.

The remaining difference is based on the estimates of reserves for depreciation. The adopted reserve for depreciation is used for this deduction.

Net to Gross Multiplier

In view of the recent reduction to the federal income tax rate for corporations (from 48 to 46 percent), we will use 46 percent in the federal income tax component of the net-to-gross multiplier.

Summary of Earnings:

The application of a 9.60 percent rate of return on the adopted rate base results in a gross revenue requirement increase of approximately \$124 million over the rates and revenue requirement found reasonable by the last general rate increase decision (D.86794 dated December 31, 1976 in A.54946). The \$124 million increase in gross revenue for test year 1979 supersedes the increase found reasonable in the partial increase (based on test year 1978) authorized by D.89175, dated July 26, 1978, for test year 1979. The result is a \$19.7 million revenue requirement increase over present base rates established by D.89175.

The adopted summary of earnings reflects lower ad valorem taxes resulting from enactment of Article XIII-A of the California Constitution (Proposition 13) and a reduction in the statutory federal income tax rate from 48 to 46 percent. Ad valorem tax expense for test year 1979 results in a reduction of gross revenue requirement of approximately \$42.9 million. The reduction in the federal income tax rate represents a decrease in gross revenue requirement of approximately \$9.7 million.

Staff Recommendations

The staff engineers made three recommendations which are contained in Exhibit 47. Two of these have been dealt with, namely, requiring Edison to prepare an updated study to determine the economics and benefits which would result from an in-house turbine repair facility and Commission adoption of Edison's average service lives, mortality curves, and estimated net salvage values.

We have adopted Edison's depreciation estimates, with the exception of the treatment for net salvage of nuclear plant where we will follow the staff accountant's recommendation (modified to reflect current tax rates.) The third recommendation is discussed below:

Management and Operational Audit

Mr. Kindblad, the staff project manager, recommends that a management and operational audit of Edison's operation be made by an outside consultant.

The staff has repeatedly questioned Edison's going into new programs without adequate studies, e.g., the establishment of the CJS system and its security monitoring system. Edison, in turn, asserts its need for expanded capacity or for greater reliability, but it has not been able to provide the staff with certain requested studies. The thrust of the staff's proposal is that it needs a better mechanism for reviewing utility operations, to monitor the efficiency of those operations, and to determine whether maximum efficiency is reflected in ongoing operations and rates.

There has been a wholesale and dramatic shift in emphasis governing regulation of energy utilities. We previously anticipated economies in scale through promotion of additional energy use. We are now actively promoting: (a) a conservation ethic to conserve limited fuel resources; (b) better load management to reduce peak use; and (c) we are seeking new ways to lessen air pollution from utility operations in order to minimize adverse impacts on the environment caused by utility operations. ✓

This changed emphasis has brought with it new priorities, new requirements, an expansion of utility work forces, and new methods and equipment to meet changed responsibilities. At the same time Edison must meet new requirements to protect employee pensions and to provide greater opportunities for women and minority workers in its hiring and promotion practices. Also, we have perceived the need for utilities to embark on exploration and development activities to secure necessary fuel resources.

However, if we are to be more than a conduit in translating cost increases into rate increases, we must have better tools to exercise our regulatory ingenuity to insure that utilities operate productively and efficiently. The staff has noted that some of these new activities, which require greater expenditures, increase unit costs and thus decrease productivity on a per kWh basis.

As a preliminary matter, consistent with D.89316, A.57284 (dated September 6, 1978) PG&E, we will direct our staff to identify the areas of inquiry to be covered by a management and operational audit and to report on its recommendations to the Commission for approval, before an audit is contracted for and commenced. Our staff should provide supervisory guidance of the audit into the approved areas of inquiry. ✓

We note that the Federal Government is wrestling with problems in defining productivity and is setting up an organization to look into methods for measuring productivity. The staff should monitor and possibly seek to participate in that activity.

Other Accounting Recommendations

The following staff accountant's recommendations are reasonable and will be adopted: (1) that Edison's first-class air fare payments should be limited to flights of three or more hours in duration; (2) that A&G expenses relating to dues, donations, and contributions of \$217,119 in 1975 and \$412,354 in 1976 should be reclassified from miscellaneous general expenses to Account 426, Miscellaneous Income Deductions; (3) that Edison should be directed to adjust its accounting procedures to permanently exclude non-operating dues, donations, and contributions from operating expenses; (4) that Edison should be directed to discontinue charging operating expenses with costs relating to corporate aircraft flights of a nonutility nature; (5) that site-tour expenses of \$121,217 for 1975 and \$174,713 for 1976 should be excluded from operating expenses pursuant to D.86794; and (6) that institutional and informational advertising expenses of \$371,359 in 1976 and of \$213,655 in 1977 should be recorded below the line. Edison should also follow through on the staff's recommendation that it speed up its accounting for retired plant.

Future Procedures to be Followed

The staff has an arduous task in analyzing voluminous complex studies, sometimes based on procedures they are unfamiliar with, under tight time constraints. Other parties have similar problems when analyzing the massive backup data underlying Edison's basic studies and Edison's responses to data requests. In the future, in order to facilitate the review of the staff and other parties and to provide a more meaningful record based upon greater comprehension of the elements of rate case estimates, we will require Edison to prepare a comprehensive narrative description and definition of terms as to the underlying basis of its estimate. We wish to cut down on the semantic tangles which have brought confusion to this record. The staff should attempt to establish common cut-off dates in the derivation of its estimates (e.g., uncollectible expense and pensions and benefits). Edison should also develop estimates of the average test year cost of distribution plant which could be used by staff witnesses in estimating plant and expenses to reflect differences in numbers of customers in future rate proceedings.

The Guidelines for Cross-Examination Employed in This Proceeding

During the hearing it became apparent that it would be necessary to expedite cross-examination to cut down on the slippage in meeting the time schedule outlined in the Regulatory Lag Plan (Plan). The ALJ advised the parties on the record of his intent to establish reasonable cross-examination guidelines, requested cross-examination time estimates from the parties, and in some cases, cut those estimates to complete cross-examination on a timely basis. He advised the parties to concentrate on important issues. Some of the parties did not make effective use

of their allotted time. The ALJ reminded parties of the reasonable time limits, gave some extensions of time as justified, and then terminated the cross-examination. When testimony was unresponsive or unclear, further testimony was permitted to adequately explore the issue.

Certain additional issues were raised during the course of the hearing (e.g., establishment of an air-conditioning lifeline allowance) and all parties were permitted to present evidence on these issues.

TURN and staff counsel objected to the Plan's time constraints. TURN contends that the ALJ's conduct was improper.

The ALJ permitted all parties to be heard and set reasonable time limits for presentation of evidence and for cross-examination of witnesses in this proceeding.

We point out that pursuant to the Lag Plan interested parties can participate and ask questions at the informal conference. Also, at the prehearing conference the ALJ directed Edison to make available all workpapers, data requests, and answers to all parties. A procedure was established for the ALJ to review any alleged proprietary material when inspection was requested by parties other than staff. Accordingly, procedures were established to allow reasonable discovery. It is the responsibility of participating parties to take advantage of discovery opportunities and to organize cogent cross-examination before the hearings.

IV. RATE OF RETURN

Complete showings on rate of return were presented by Edison, the Commission staff, GSA, and Mr. O'Brien. TURN supported GSA's recommended rate of return.

Rate of return testimony was presented by H. F. Christie, a senior vice president of Edison, by R. J. Leonard, a staff financial examiner, by Dr. J. W. Rettenmayer, an economist testifying for GSA, and by Mr. R. P. O'Brien, a consulting engineer, testifying as a customer of Edison and an investor in its securities. The rate of return issue was argued by Edison, the staff, GSA, Mr. O'Brien, and by TURN.

Capital Structures and Rates of Return for Edison

The following tabulations contain the capital structures and rates of return for Edison adopted in D.86795 for test year 1976, and the recommendations for test year 1979 by Edison, using a target capital structure; the staff, using a 1979 year-end capital structure; and GSA, using Edison's 1978 target capital structure.^{28/}

Adopted in D.86794
(Test Year 1976)

<u>Component</u>	<u>Capital Ratio</u>	<u>Cost Factor</u>	<u>Weighted Cost</u>
Long-term debt	49.95%	6.51%	3.25%
Preferred stock	13.63	6.94	.95
Common equity	36.42	12.63	4.60
Total	100.00%		8.80%

Times interest coverage after taxes: 2.71 x

Edison's Proposal
(Test Year 1979)

<u>Component</u>	<u>Capital Ratio</u>	<u>Cost Factor</u>	<u>Weighted Cost</u>
Long-term debt	48.00%	7.15%	3.43%
Preferred stock	14.00	7.44	1.04
Common equity	38.00	15.00	5.70
Total	100.00%		10.17%

Times interest coverage after taxes: 2.97 x

^{28/} Excluding deferred ITC from Edison's capital structure.

Mr. O'Brien adopted Edison's capital structure and added an "inflation stabilizer" component of 0.75 percent to the rate of return to arrive at a recommended rate of return of 10.92 percent.

Edison also developed the following 1979 year-end capital structure for comparison with the staff's 1979 year-end capital structure:

<u>Component</u>	<u>Capital Ratio</u>	<u>Cost Factor</u>	<u>Weighted Cost</u>
Long-term debt	47.2%	7.15%	3.37%
Preferred stock	13.7	7.44	1.02
Common equity	39.1	15.00	5.87
Total	100.0%		10.26%

Staff's Proposal
(Test Year 1979)

<u>Component</u>	<u>Capital Ratio</u>	<u>Cost Factor</u>	<u>Weighted Cost</u>
Long-term debt	47.84%	7.08%	3.39%
Preferred stock	14.07	7.21	1.01
Common stock equity	38.09	12.73	4.85
Total	100.00%		9.25%

Times interest coverage after taxes: 2.73 x

GSA's Proposal
(Test Year 1978)

<u>Component</u>	<u>Capital Ratio</u>	<u>Cost Factor</u>	<u>Weighted Cost</u>
Bonds	48.08%	6.86%	3.30%
Preferred stock	14.49	7.32	1.06
Common equity	37.43	11.85	4.44
Total	100.00%		8.79%

Times interest coverage after taxes: 2.66 x

Edison's capital structure represents "target ratios" which are the average ratios it seeks to attain over a period of time. Edison included a net amount of \$116,449,000 in its common equity capital, which was its estimate of accrued 6 percent ITC credits less amounts ratably flowed through. Edison contends that this amount is required to be included as equity capital because IRC Section 46(f)(2) does not permit a rate base adjustment of the deferred credit. Inclusion of deferred ITC as a part of Edison's common equity capital was rejected in D.86594. This issue was discussed at length in D.87828 dated September 7, 1977, after we reopened the record in A.54946 to take additional evidence on this issue. That discussion and the related findings and conclusions, which are not repeated herein, is pertinent to this proceeding. D.87828, which affirmed D.86794, contains the following finding (which is repeated as conclusion 2):

"5. The inclusion of unamortized ITC as equity capital is required only for regulatory agencies that utilize capital structure in deriving rate base and not for regulatory agencies, such as this Commission, that derive rate base from the weighted average depreciated plant balances."

Nothing on this record convinces us to adopt a different finding and/or conclusion herein.^{29/}

^{29/} This matter is still being litigated before the United States Supreme Court.

Edison's Testimony

Mr. Christie prepared 23 tables and 6 charts for his 1978 estimate and updated 6 tables for 1979.

Mr. Christie testified that: (1) Edison's need for funds from the financial markets is large and its cost of capital and required return on common equity is greater than that authorized in D.86794; (2) construction expenditures and refunding of debt issues between 1977 and 1981 are expected to total \$2.8 billion, which is 47 percent more than Edison's 1972 to 1976 requirements for similar purposes; and (3) that without rate relief about \$2.6 billion, or 91 percent of the funds required would have to be derived from financial markets during the 1977 to 1981 period and this potential need for funds from financial markets is more than twice the \$1.2 billion needed between 1972 and 1976. He contends that marketing the \$1.2 billion of new securities approached Edison's then existing limit for financing without seriously damaging its financial integrity. He does not believe that Edison could obtain over 60 percent of its funds from capital markets over the long run. He states that Edison could conceivably obtain funds without the rate relief, but that its bonds and preferred stock would be derated one or more times, legal investment laws could not be met, and the financial integrity of Edison would be seriously damaged. He believes that common stockholder actions could preclude the sale of common stock at below book prices. He estimates that annual rate relief of \$200 million per year in mid-1978 would reduce Edison's need for external financing to about \$2.1 billion, or about 81 percent more than needed in the 1972 to 1976 period, and this amount would be about 74 percent of Edison's total required funds.

He contends that: (1) Edison requires a return on common equity of 15 percent or more to provide the needed cash for construction expenditures and refunding and to obtain funds from capital markets at reasonable cost; (2) because embedded debt and preferred stock costs have risen since 1976, its required rate of return has increased from 9.6 to 10.17 percent in 1979; (3) Edison has taken actions to reduce its financing needs and capital costs including load management and capital rationing, capital structure changes, and innovative financing methods; (4) Edison's forecast growth of kWh demand during the 1977 to 1981 period has fallen from the 7.0 percent per year estimated in 1972 to 3.4 percent estimated in 1977; (5) this drop in demand and the budget surveillance provided by Edison's plant expenditure review committee has permitted it to lower plant expenditures in the 1977 to 1981 time frame, from \$4.6 billion estimated in 1972 to \$2.5 billion in 1977, a \$2.1 billion (or 46 percent) decrease; and (6) that the reduction would have been even greater except for inflation and governmental requirements which added to construction costs without increasing productive capacity. He testified that: (1) his estimates of capital costs are based on Edison's present financial integrity and that the cost of its bond and preferred stock yields would immediately increase and its common stock price would fall following a derating; (2) Edison reduced its debt ratio from 52 percent in 1972 to approximately 48 percent in the 1977 to 1979 period which resulted in a lower requirement for sale of new debt and lowered embedded debt costs by at least 0.15 percent; (3) maintaining the former debt percentage in Edison's 1979 capital structure would have increased its cost of debt capital

by 0.37 percent (from 3.43 percent to 3.80 percent); (4) maintaining a three times interest coverage after taxes (which he believed essential) would increase the rate of return from 10.17 percent to 11.40 percent and would increase the return on common equity from 15 percent to 19.29 percent; and (5) Edison's embedded debt costs were lower than other major utilities in California at the expense of Edison's common shareholders because of inadequate earnings. He believes that recognition should be given to Edison's achievement in reducing embedded costs and to compensate for the dilution of the investment of its common shareholders in 1974 and 1976.

He stated that Edison held down its capital costs through nuclear fuel leasing and other leasing arrangements, project financing, foreign financing through the Export Credit Guarantee Department, through issuance of pollution control bonds, intermediate term bonds, offshore preference stock, and through private placement of accumulative preferred stock.

He believes that with continuing inflation in excess of 6 percent and rising capital expenditures in various sectors of the economy, AA-rated public utility bond yields would increase from the then current 8½ percent to approximately 9 percent in 1978 and 1979, at a minimum, and that preferred yields would increase from slightly above 8 percent to a 9 percent level in 1978 and 1979.

He contends that: (1) Edison would have to sell more bonds and preferred stock at higher than embedded costs if this Commission's rate increases are not adequate and timely and that absent rate relief, the assumed costs in its computation would be inadequate; (2) Edison's common stock price must be raised to above book value to enable it to obtain common stock

funds from financial markets without experiencing dilution in its common shares; and (3) that additional times interest coverage is needed to avoid a drop-off in Edison's debt coverage at a risk of derating and that its fixed charge coverage on preferred stock would also drop at the risk of a preferred stock derating.

Mr. Christie also contends that: (1) Edison's bond trust indenture and preferred stock coverage contained in its articles of incorporation are above the required minimums because they were written before the allowance for funds during construction (AFDC) was a significant item and AFDC was not excluded from earnings; and (2) if AFDC was excluded from its coverages in 1978, Edison could not issue bonds and preferred stock, primarily due to AFDC charges for San Onofre nuclear plant Units 2 and 3.

Mr. Christie did not consider the tax credits and/or preferences relating to Edison's nonutility-related activities or of its subsidiary companies, which have provided a cushion for its coverage in his analysis. Mr. Christie contends that investors and rating agencies look at Edison's cash flow as well as its earnings, and that its cash flow is adversely affected by the long time needed to build nuclear units like San Onofre Units 2 and 3 which absorb a large portion of its earnings and do not provide cash and by its lower depreciation rates, which are an important source of cash, which are below the industry standard, and because this Commission, unlike other jurisdictions, does not allow it to normalize its accelerated depreciation.

Mr. Christie testified that in the past Edison's lower common stock pay-out ratio compared to the 20 companies resulted in Edison's earnings growth being greater than the 20 companies because of the compounding effect of Edison's retaining a larger portion of its earnings. However, he contends that Edison's low pay-out policy has had a depressing effect on Edison's common stock prices and Edison is now embarked on a program of increasing the common stock dividends to reach the industry average and improve the sale price of its common stock.

Mr. Christie also sought to compare electric utilities with unregulated industrials. He contends that: (1) there are increasing risks to electric utilities due to their capital intensive nature compared to industrials; (2) Edison must construct plant necessary to meet its requirements and does not have the option of postponing investments during periods of unfavorable market conditions; and (3) Edison is faced with risks in increasing amounts of AFDC and delays due to initiatives, regulatory decisions, legislative actions, and in preparing comprehensive environmental studies to meet changing standards which increase capital costs of facilities constructed and which result in other projects being terminated after major expenditures of time and money. He states that these delays and changes often reduce plant productive capacity which results in increased service costs. He contends that inflation and increases in embedded capital costs erode earnings on common equity between general rate increases so that what is authorized and believed to be the minimum required by the Commission is not earned, and that an allowance for erosion in earnings is necessary but has not been recognized by the Commission.^{30/}

^{30/} Mr. Horton noted that an attrition allowance had been recognized by the Commission in D.55703 dated October 15, 1957 in Edison's A.38382. D.55703 discusses the impact of certain factors on rate of return. Mr. Sample, Edison's manager of regulatory costs, prepared a generalized discussion of factors causing a trend in rate of return. A detailed analysis of the factors changing rate of return may not be valid under the impact of rapid changes in the economy.

Testimony and Position of Mr. O'Brien

Mr. R. P. O'Brien testified as a customer of Edison and as an investor in Edison's securities. He states that Edison has sought the same rate of return on equity in this proceeding as in A.54946 and the 10.2 percent rate of return sought herein is essentially due to the intervening changes in the cost of new debt and preferred equity. He contends that: (1) Edison's legitimate requests have been scaled down resulting in a long-term deficiency in earnings which is partly due to the regulatory process and partly due to shortcomings of the economy as a whole; (2) since this Commission bases rates on historical cost rate bases, it ignores inflation which has eroded the purchasing power of the dollar, understates the investment base, and provides an inadequate provision for depreciation; (3) the rate of return on common equity of 12.63 percent authorized in D.86794 was not realized - in fact, it was 11.85 percent for 1977; and (4) that based on the market values, which are the market appraisal of Edison's common stock for 1977, investors in Edison's common stock established a rate of return of 15.76 percent. He also discusses declines in the value of bonds due to inflation. Mr. O'Brien discusses economic theories governing the establishment of a fair and reasonable rate of return including: (1) the subjective theory which defines stock cost as

what the investor thinks it is worth; (2) price oriented theories which include earnings/price ratios (EPR), discounted cash flow, investor experience, and interest coverage; and (3) opportunity costs, an analysis based on comparative earnings, and discussed strengths and weaknesses of the various theories.

He contends that: (1) the courts required the Commission to permit the equity investor to realize earnings equal to those being earned at the same time for other similar enterprises, subject to corresponding risks and uncertainties; (2) the three basic measures of investment costs are market price per share, book value per share, and the "real dollar" cost per share, reflected in daily papers which show market price, numbers of shares sold, and the EPR, in quarterly reports of earnings, in annual reports showing the book value per share, and in periodic studies by financial analysts; and (4) in 1977 the replacement cost or real cost of Edison's investment per share was \$83, its book value was \$32 per share, and its market price was \$24 per share.

He contends that: (1) if the market price is well above the book value, the annual income is about the equivalent of the annual real cost of supporting the historical real investment;

(2) if the market price is equal to the booked investment, Edison may somehow offset the accumulated erosion in investment due to declines in the purchasing power of the dollar; (3) a market price below the book value per share reflects inadequate income under prevailing circumstances; and (4) that the staff's exhibits are unrealistic and espouse concepts that do not satisfy Edison's problems. He supports a rate of return on common equity of not less than 15 percent. ✓

Testimony of the Commission Staff

Mr. R. J. Leonard recommends a 9.25 percent rate of return for Edison for test year 1979, based on his analysis of Edison's capital structure and capital requirements. Mr. Leonard's year-end 1979 capital structure contains certain adjustments to Edison's capital structure. Mr. Leonard testified that the 0.92 percent difference in rate of return applied to the staff's rate base and the then existing net-to-gross multiplier (based, in part, on a 48 percent federal income tax rate), yields a difference in gross revenue requirements of \$76,456,000. ✓

His 9.25 percent rate of return would yield a 12.73 percent return on equity, a 2.73 times interest coverage on debt, and a combined coverage on debt and preferred stock dividends of 2.10 times, based on his estimated capital structure.

Mr. Leonard noted the impact of Edison's plan to raise its dividend pay-out ratio to a level more comparable with the industry average (which is close to 70 percent compared to Edison's 1977 pay-out ratio of 53 percent) has improved the market performance of Edison's common stock. The price range for Edison's common stock ranged from a low of \$20.50 per share in the first quarter of 1977 to a high of \$37.50 per share in December 1977. He stated that as a result of higher pay-outs in the future, the proportion of earnings retained by Edison will decrease, which will result in a need for additional funds from external sources. He testified that: (1) a 12.73 allowance on common equity would provide for moderate increment in retained earnings after payment of dividends at higher annual rates (\$51 million in 1978 and \$90 million in 1979 based on his recommended rate of return); and (2) that Edison's book value per share and earnings on year-end book value increased moderately between 1968 and 1977.

Mr. Leonard's estimate priced out Edison's proposed new debt issues for 1978 and 1979 at interest costs of 8.90 and 8.75, respectively, based on his assessment of a drop in such costs, compared to Edison's use of 9 percent for these issues. In his calculation of the cost of preferred stock, he included additional planned issues in 1978 and 1979 at rates of 8.40 and 8.35 percent, respectively, compared to Edison's use of 9.0 percent.

Mr. Leonard adjusted Edison's cost of debt by reducing the amount of the promissory (Rothschild) notes by a foreign exchange gain of \$6,235,000 and by a \$3,044,000 premium on related contracts. The appropriate regulatory treatment of foreign exchange gains was considered in C.10231. The staff adjustment is consistent with D.89113 dated July 25, 1978 in C.10231, and is incorporated in the adopted capital structure. He treated \$4 million of 5 percent original participating preferred stock as equity in calculating the allowance for preferred and preference stock because this stock participated fully with the common stock in dividends in addition to preferred dividends.

Mr. Leonard compared Edison's operations to 10 combination gas and electric utilities, 10 electric utilities, and 10 gas utilities. His comparison companies included companies with bond ratings ranging from Baa to AA-rated utilities, whereas Edison's 20 utilities were all either A- or AA-rated. His study of five-year trends shows that:

- (1) Edison's ratio of operating expenses to operating revenues increased more rapidly than the other three groups;
- (2) Edison realized more revenues-per-dollar of investment than the average of the electric utilities used in his comparison;
- (3) subsequent to 1973 Edison's ratios of revenues to investments were closer to the averages of the combination companies;
- and (4) that Edison's trend of revenues over investments between 1972 to 1976 was better than the other group trends.

A.57602 EA/ai

GSA's Testimony

Dr. Rettenmayer concludes from his study, based on the DCF method, that overall cost of capital for Edison would be in a range from 8.61 percent to 8.82 percent and recommends a rate of return of 8.79 percent. He developed his capital ratios for Edison using the components of Edison's 1978 capital structure. In his analysis of the cost of equity, he considered dividend growth rates for three periods, 1966 to 1976, 1967 to 1977, and 1972 to 1977 for Edison and for a comparison group of 13 electric utilities.

He testified that the DCF analysis is the most appropriate method and that it soundly embodies generally accepted concepts of economic behavior, allows and encourages the user to be completely explicit regarding the data and calculations applied to the model, and is consonant with the regulatory principles established by the Bluefield and Hope decisions, supra.

He described the DCF method as the current value of any asset which is determined by the asset's production of an income stream of periodic dividend payments taking into consideration the time value of money, (i.e., the present worth of future payments) and the value of a future sale of the share of stock.

Position of TURN

TURN recommends adoption of the 8.79 percent rate of return recommended by GSA because the DCF method provides an explicit computation and a recommendation on rate of return based on what investors currently require rather than adopt Edison's proposal which is based on past performance. TURN primarily contends that: (1) Edison has not supported its need for a 15 percent rate of return and an after-tax coverage of three times interest to maintain its AA bond rating; (2) Edison's bond ratings did not fall in 1976 and 1977 even though the requested rate relief was not granted and that Edison was merely repeating its earlier arguments; and (3) Edison has failed to show that a downgrading of its securities would cost consumers more than the adoption of its proposal.

Discussion

In the past, regulators and others have placed primary significance on return on rate base as a measure for authorizing a reasonable return for electric utility investors. Historically, the emphasis on return on rate base was intended - or certainly the result occurred - to encourage rapid expansion of electrification. The tremendous economic and environmental costs of expanding electric supply sources has necessarily caused a rethinking of the old emphasis on expansion. Return measurements that serve to encourage and reward generation capacity expansion are no longer in the public interest. If investors are adequately compensated when a utility pursues programs that reduce the need for new capacity (e.g., conservation, repowering, encouraging off-peak use, co-generation, and improved generation facility efficiency), the interests of stockholders and the public will be far better served. Accordingly, as we analyze and weigh factors necessary to arrive at an authorized return for Edison, we give emphasis to determining a return on equity that is sufficient to give Edison the incentive to fully pursue resource options other than increasing generating capacity by the building of new facilities.

Consistent with past practice, we find it reasonable to adopt an estimated year-end capitalization for test year 1979. This year-end capitalization will provide a better gauge for determining interest coverage, based on estimated new securities issues in 1978 and 1979, than Edison's target estimate.

The staff's estimate for new long-term debt, which is equal to Edison's estimates based on partial rate relief of \$200 million in mid-1978,^{31/} is reasonable. The staff's foreign exchange gain adjustments are reasonable.

President Carter's policy of increasing the cost of money to restrain borrowings and his efforts to stabilize the value of the dollar makes it likely that the cost of debt and preferred stock will remain at current high levels. It is reasonable to use a level of 9.15 percent for new debt after reviewing the effective costs of new AA utility bonds in mid-October 1978 based on Moody's Bond Survey, and to use the July 1978 Federal Reserve Bulletin cost of preferred stock of 8.42 percent for the total amount of \$100 million of new preferred issues proposed to be issued in 1978 and 1979.

Edison's 5 percent participating preferred stock is a hybrid security. It would be reasonable to consider the preferred dividend component of this security. However, it would be unreasonable to utilize the 20.16 percent cost of this security as a normal preferred stock requirement. Therefore, for ratemaking purposes, we will follow the staff's proposal

^{31/} Edison estimates another \$25 million of debt without rate relief.

of including the \$4 million as a part of Edison's common equity capitalization. However, we will also give recognition to the stated preferred dividend rate of 5 percent, i.e., \$200,000 as an added preferred stock cost.

Edison's shareholders converted \$19,581,000 of convertible preference stock to common equity in 1977. This \$19,581,000 should, therefore, be reflected in Edison's common equity rather than be reflected as a portion of Edison's outstanding preferred stock. This transfer removes \$1,018,000 from the cost of Edison's preferred stock.

As noted above, we will adopt the staff's position that the retained portion of ITC should not be considered as a portion of Edison's common equity. These funds, together with internally generated funds, are available for financing additional plant and reduce Edison's need for external financing. The staff's estimate of common equity includes \$139 million of additional retained earnings and \$260 million of new common stock sales in 1978 and 1979 in Edison's capital structure. Edison's estimate reflects a 1978 and 1979 addition of \$260 million to common equity and also reflects short-term borrowings to meet its financial requirements. The staff's estimate of common equity, modified to reflect the \$19,581,000 conversion of convertible preference stock to common equity, is reasonable.

Edison's election of Option II for ratable flow-through of ITC results in a maximization of cash flow, an increase in interest coverage, and reduces its need for new financing to construct new facilities. The reduction in risk related to Edison's election of Option II was included among our many considerations in arriving at the rate of return adopted herein.

In addition, we have considered Edison's activity^{32/} in the fields of co-generation, load management, voltage reduction (after a slow start), promotion of experimental tariffs, and its cooperation in promoting better energy conservation activities. These activities will have an impact on Edison's revenues. In the event that sales drop further than anticipated or if there is a greater demand shift, particularly for large customers, than is reflected in adopted revenues, Edison faces increased risks.

We have also considered: (1) the risks to Edison in its development of new and less polluting energy sources, e.g., fuel cells, geothermal, and solar; (2) the better use of Edison's existing resources, e.g., the repowering of its Long Beach plant; (3) the research being conducted by Edison

^{32/} Edison's activities to curb load growth and demand and to develop alternate and more efficient sources of electricity should be continued and, if justified, expanded.

to find new ways to utilize its coal resources; and (4) the benefits derived by both Edison's shareholders and by its ratepayers from Edison's better than average financial management.

After careful consideration of all of the previously discussed relevant factors in the development of a reasonable return on common equity and of the composition and cost of other elements in Edison's capital structure, we adopt as reasonable a return on common equity of 13.49 percent, which applied to our adopted capital structure and costs translates to a rate of return of 9.60 percent developed as follows:

Adopted Capital Structure

<u>Item</u>	<u>Amount (in \$1,000)</u>	<u>Capital Ratio</u>	<u>Cost Factor</u>	<u>Weighted Cost</u>
Long-term Debt	\$2,825,621	47.84%	7.14%	3.42%
Preferred and Preference Stock	811,171	13.73	7.29	1.00
Common Equity	<u>2,269,581</u>	<u>38.43</u>	13.49	<u>5.18</u>
	\$5,906,373	100.00%		9.60%

This return on capital is necessary to attract capital at a reasonable cost and not impair the credit of Edison. This rate of return will provide an approximate times interest coverage after income taxes of 2.78 times and an interest plus preferred dividend coverage of 2.16 times.

The 13.49 percent rate on equity authorized herein is made with recognition that the next test year we will use to set rates for Edison will be 1981. We realize, from this evidentiary record, that costs will tend to increase generally, as will the utility's embedded cost of debt. If we were to consider a test year earlier than 1981 for Edison's next general rate proceeding, we would authorize a lower return on equity. Accordingly, we are authorizing the rates herein (through adoption of a results of operation and return on equity rate base) conditioned upon employing 1981 as the next earliest test year for establishing Edison's base rates (and issuing a rate decision prior to the beginning of such test year).

Our purpose for expressly and conditionally setting Edison's rates to have a minimum two-year rate life is simple. This Commission is not staffed to process rate applications for all the major utilities annually. This was true when the Regulatory Lag Plan was adopted, and the recent hiring freeze and budget reductions have contributed and will further contribute significantly to our staffing problems. In order to process rate increase applications within the time frame of the lag plan, and have new rates in effect at the start of the test year, we simply cannot have every major utility before us annually. It is therefore appropriate and in the public interest (for both ratepayers and utilities) to establish and announce ground rules, and set rates so that major utilities can reasonably go at least two years without general rate relief.

Employing 1981 as the next earliest test year for establishing Edison's rates will not be a hardship on the utility. Fuel expense, which is potentially the most volatile expense item, is covered under the ECAC procedure (guaranteeing recovery of reasonably incurred fuel expense). The Commission's Regulatory

Lag Plan established July 6, 1977 by Resolution No. A-4693 has reduced delay when applications are processed, enabling new rates to go into effect at the start of the test year. Also, we will entertain a request for rate base offset relief if a utility puts a significant amount of new plant into service between general rate proceedings.^{32/} Finally, we are proceeding with an investigation into whether to adopt an adjustment mechanism for electric sales (OII No. 25), which if adopted, would insure that if actual sales volumes dropped below those adopted in the utility's last general rate proceeding, the utility would not suffer.

The factors that may operate between general rate proceedings in such a manner as to preclude Edison's realizing its authorized return on equity are expenditures subject to its management's review and discretion. The innovative ratemaking procedures we have adopted, and continue to explore, have clearly paved the way to going a minimum of two years between general rate increases.

We note that the financial community has for some time either not recommended the purchase of California utility stocks, such as Edison's, or has been relatively apathetic toward such stocks, alleging that California has an unfavorable regulatory climate. It is said that the reputed unfavorable regulatory climate causes California utility stocks to sell below book value. This decision authorizes rates that provide Edison the opportunity to realize high quality earnings and increases the return on equity by .86 points. We will follow with interest the reaction of the financial community and the price of Edison's stock.

We expect Edison to fully apply its ingenuity toward increasing its efficiency and productivity. A full effort in this regard should aid in lengthening the interval between rate proceedings. We will require a demonstration of such an effort as part of Edison's showing in its next general rate proceeding.

^{32/} See D.86281, dated August 24, 1976, A.55509, PG&E (p. 51 mimeo.); and D.89316, dated September 6, 1978, A.57284, PG&E (p. 97 mimeo.).

V. CONSERVATION

The Commission's exercise of its responsibilities to insure that adequate and reasonable utility services are maintained in periods of energy shortages has a long history, one in which conservation of energy in the face of shortages has played a major role.

In D.81931 dated September 25, 1973 in C.9581, a Commission investigation into the adequacy and reliability of the Energy and Fuel Requirements and supply of Electric Utilities, we concluded that:

"7. A showing of conservation of energy practices planned and in effect will be required of every utility, where appropriate, in proceedings before this Commission.

"8. Henceforward it will be and it is the policy of this Commission to encourage active conservation of fuel and energy..."

On mimeographed page 53 of D.86794, the Commission stated:

"In subsequent proceedings, a more detailed analysis will be undertaken and Edison's rate of return will be adjusted, upward or downward, as the evidence indicates. In connection with the filing of its 1977 conservation programs Edison shall clearly detail its various conservation advertising expenses.

"Edison shall perform follow-up studies to determine the effectiveness of its conservation programs and shall inform the Commission of the results. Included shall be an assessment of the degree and effectiveness of efforts to distribute information and to market conservation hardware, with estimates of cost effectiveness and resulting energy savings. Justification shall be provided for relative emphasis among media for information transfer, among efforts directed toward behavior change as compared with hardware, and among various hardware options promoted.

"Edison should also take the initiative to develop and bring before the Commission programs of incentives, including but not limited to subsidies, low-interest loans, and modified rates, for inducing conservation-oriented behavior and investment by end users."

D.88650 dated April 4, 1978 in Edison's A.57111 contained the following findings:

- "1. Edison should present its proposed conservation program and the estimated associated expenses in its general rate proceeding.
- "2. Edison should continue with a vigorous and sustained effort to encourage the conservation of electricity. Such efforts are an essential element of sound utility management and responsibility in this time of diminishing energy supplies and rapidly escalating construction costs.
- "3. No determination should be made at this time with respect to the reasonableness of the other conservation programs submitted by Edison and other parties. The propriety of implementing new or continuing Edison's other proposed energy conservation programs and the expenses associated therewith should be considered in Edison's general rate proceeding."

In response to this Commission's policies and directives respecting the subject of conservation, substantial direct showings were made by Edison (Exhibits 63-78), the staff (Exhibits 82-89), and the Energy Commission (Exhibits 90-91). The staff also reviewed Edison's massive, 3-volume summary of its 1977 conservation and load management activities^{34/} filed in compliance with D.86501 dated October 13, 1976 in C.9581 et al. as a part of its evaluation of Edison's programs.

34/ This filing was offered but not received in this proceeding.

Edison's Testimony

The following discussion summarizes Edison's testimony on its earlier conservation efforts:

- (1) Edison began to eliminate its sales promotion activities in 1970 and redirected its emphasis toward developing an increasingly strong EM program, including both conservation and load management.
- (2) Edison requested a reclassification of sales expense to EM expenses.
- (3) The FPC subsequently reclassified expenses related to conservation activities as customer service and informational expenses.
- (4) Edison's marketing program in the early 70's was designed to encourage new discretionary energy loads not requiring additional generating, transmission, and/or distribution capacity beyond normal requirements to meet the electrical demands of its customers.
- (5) Edison's energy conservation advertisements not only stress the obvious and familiar ways of efficiently utilizing electrical energy, but also identified wasteful uses of energy.
- (6) Edison sought to become more knowledgeable of customers' energy use habits and to develop more sophisticated methods to reduce energy requirements through changes in operating procedures.
- (7) Edison's field representatives were assigned to (a) contact the major residential builders in its service area to incorporate energy conservation techniques in new residences when electricity was specified as a source of energy for heating, air conditioning, or water heating; (b) the new construction segment of the commercial, industrial, and agricultural markets seeking to incorporate energy conserving space conditioning, lighting systems, and improved structural thermal efficiency in new buildings and structures;

- and (c) larger existing commercial and industrial customers with a demand of 500 kW or larger to develop specific recommendations for conserving energy and lowering demand.
- (8) Edison's consumer services program was expanded in 1973 to include a full customer services educational program for existing residential customers using face-to-face contacts to inform customers about EM. The program included printed literature to achieve EM goals.
 - (9) Edison submitted a supplemental conservation plan in A.54946, directed towards augmenting its ongoing conservation activities in six areas to reduce anticipated future annual kWh sales in the residential and commercial classifications by up to 310,000,000 kWh by (a) expanding its personal contacts in the residential and commercial sectors; (b) providing showerhead regulating devices to electric water heating customers; (c) expanding publicity and informational efforts; (d) providing an energy conservation kit for new customers; and (e) setting up a solar water heating demonstration and publicity program.
 - (10) It committed the resources to implement the latter, level 2, programs prior to Commission authorization of its \$2.4 million budget augmentation.
 - (11) Between 1973 and 1976 40,000 commercial and industrial customer contacts resulted in an annual savings of 1.4 billion kWh and an estimated demand reduction of 200 MW.
 - (12) D.86940^{35/} dated February 8, 1977 in PG&E's A.56845 directed gas and electric utilities to consider the

35/ Finding 1 of D.86940 states:

"1. The Commission has directed PG&E and other gas and electric utilities to direct efforts towards the promotion of conservation of energy as a primary commitment and obligation of a public utility. The Commission notified PG&E that it expects PG&E and other utilities to develop a sophisticated analytic capability to evaluate conservation measures which may go beyond the conventional scope of utility activities, to make aggressive use of its marketing capabilities and to educate the public in conservation and, where reliable and cost-effective, to promote energy-saving design and technological changes."

promotion and conservation of energy as a primary commitment and obligation of a public utility and provided for filing of offset rate applications for consideration of utility conservation programs.

- (13) Edison filed A.57111 on February 22, 1977 to comply with that directive. A.57111 described 34 programs designed to increase electrical use efficiency, moderate system-peak demands, and reduce energy waste.
- (14) Edison's new programs are directed to point out additional ways to conserve electricity to the public. The programs reflect a greater reliance on hardware, encourage the installation of more efficient appliances, and emphasize peak-load management concepts.
- (15) D.86794 included conservation funding for test year 1976 of \$4.3 million, \$952,000 for customer service field forces working on conservation programs, and \$750,000 for public relations in the conservation-related field to cover its level 1 and level 2 expenditures for 1976. Edison expended \$4.2 million on its 1976 conservation activities, absent early Commission approval of its programs.

As noted above, D.88650 eliminated the conservation adjustment clause account for accounting for conservation-related activities. Edison proposes that funding for its new level 3 1977 programs, which are directed to customer groups and to specific energy uses within each group, in addition to its level 1 and level 2 activities, be incorporated in its base rate revenue requirements. ✓

In this proceeding, Edison expressed its willingness to work cooperatively with the staff of this Commission and of the Energy Commission to obtain maximum EM benefits. Edison's EM policy witness expressed Edison's willingness to drop ineffective or less effective programs as proposed by our staff and to transfer resources to augment existing programs or to implement new programs based on this consultation. He stated that flexibility

in modifying programs would not result in a decrease in Edison's EM expenditures. Edison contends that the level of funding for its EM activities should consider: (1) existing commitments to new supply and associated cash flow; (2) the experience of other California utilities on appropriate levels of resource commitments to EM activities; and (3) providing for orderly EM activity growth so that personnel can be trained and deployed effectively.^{36/}

These expenditures do not include amounts for circuit load management which are a portion of distribution expenses. In addition, a portion of Edison's A&G expenses deals with conservation-related activities.

Edison contends that certain nonspecific inquiries or multiple inquiries, which include requests concerning conservation activities of a general nature, are dealt with by its A&G employees; that it finds it preferable to do so in this manner as opposed to transferring calls to its Energy Management, Customer Service and Informational Division (EMD); and that where further information is needed, such a referral is made to the EMD. TURN contends that Edison's A&G employees should be totally divorced from this type of activity because their work duplicates the activities of the EMD.

Edison's procedure of using A&G staff to respond directly to routine inquiries is more expeditious than having the matters handled by personnel in two departments, delivers the necessary information on the initial contact, and avoids the possibility of the casual caller terminating his inquiry. This procedure is reasonable.

^{36/} The Commission staff concurs in this assessment.

Conservation Survey by Edison

Exhibit 70 is a report presenting the summary of findings and major conclusions from a comprehensive, system-wide attitude survey conducted by Edison's consultants, Public Response Associates, Inc. and MSI, International, Inc. The survey included 1,013 personal interviews at residences between October 29 and December 15, 1976. The purposes of this study were to establish data on current public attitudes to enable Edison to develop programs which more accurately reflect customer needs and concerns, and to provide bench mark data against which the effects of future programs and events can be evaluated.

The major conclusions of the survey are:

- (1) Approximately half of Edison's customers do not believe in an energy crisis or that an energy shortage exists. Those customers who do not believe a shortage exists tend to be less informed on all energy issues, and are more critical of and less sympathetic to the need for EM or of the need for conservation-oriented R&D.
- (2) Despite widespread doubts as to the existence of an energy crisis, rate increases have tended to encourage some conservation. Increases in bills have increased customer interest in energy issues. Most of Edison's customers are not alarmed about an energy crisis. However, many customers question Edison's ability to deliver what they perceive to be a growing demand for electricity.
- (3) Customers accept rate increases attributable to specific factors, such as the rise in oil prices or to general inflationary trends.
- (4) Many customers oppose rate increases for R&D and for construction of new power plants, or for paying for increased environmental costs, or for increased interest costs.
- (5) While Edison's customers do not wish to be energy dependent on Mideastern oil producers, and they endorse the EM concepts and intensive R&D activities, they are unclear as to who should pay for this development, which is perceived as a costly undertaking. Edison states that its customers want energy at a reasonable and stable cost level, and that there is an implicit recognition in the survey that only cost increases will curtail the use of electricity.
- (6) Customers prefer that R&D activities be conducted by many organizations, primarily by the Federal Government because of the magnitude of R&D costs and to pass on the benefits of R&D to the public. The survey shows little interest in having major utility responsibility for such R&D.

- (7) Most customers believe they have attempted to conserve electricity by cutting down on appliance use and by turning out lights when not in use, but its customers are skeptical about their ability to conserve or of the success of any voluntary conservation effort which offers no cash incentives to residential users.
- (8) Customers dislike any involuntary load management concept to force them to use less electricity. Customers favor lower rates for off-peak usage if there is no penalty for using electricity when desired.
- (9) Customers have a rough idea of which appliances are major users of electricity. However, many customers feel they are not well informed on EM, and that Edison is responsible for supplying them with EM information. Less informed customers either tend not to conserve electricity or use their lack of information as a reason for not conserving electricity.
- (10) Most of its customers have a good opinion of Edison. Public attitudes are more favorable to Edison compared to other companies in the energy business, i.e., oil and gasoline companies.
- (11) Many of Edison's critics believe that it makes excessive profits or that every rate increase increases Edison's profits.^{37/}
- (12) There are a large number of customers with little knowledge of Edison's activities who can not evaluate its environmental, pollution, and community work.

^{37/} Edison contends that inflationary pressures and fuel price increases require it to ask for rate increases. Edison perceives a critical need for educating the public that every rate increase does not mean increased profits. The cost of any such educational programs should be borne by Edison's shareholders.

- (13) Many customers believe that Edison has not communicated information about its activities and operations. Such customers tend to question the justification of Edison's rate increases.
- (14) The public supports informative political activities by Edison, (but not overt political activities), such as information on the company's stands on conservation, on the environment, and on energy issues.
- (15) Attitudes about energy use are subject to rapid change in today's political climate and to media exposure on natural gas and water shortages.

Northwest Energy Policy Project

The staff summarized the findings of 40 studies of public awareness on the energy crisis and on conservation practices contained in the 1977 "Northwest Energy Policy Project" report. This report generally parallels the Edison survey, supra. The report, inter alia, finds that: (1) most people attribute the energy crisis to manipulation of energy supplies by major oil and utility companies; (2) most people tend to conserve in small ways at minimal effort and expense - although a few people have made significant reductions in their energy use through home insulation or changing their mode of travel; and (3) that many people say they would accept numerous and fairly stringent energy conservation measures in the future if such measures were truly necessary.

Santa Barbara Survey and Report

The Santa Barbara Energy Conservation Project (Project) report (Reference Item G)^{38/} outlines Project conservation activities undertaken through media exposure and customer surveys. The report points up the problems of the sponsoring committee in setting up a model energy conservation program designed to reduce consumption of energy in the city of Santa Barbara by

^{38/} The report was not received in evidence.

5 percent through more efficient energy consumption in all sectors of the community. The report states that the greatest drawback to achieving conservation goals by governmental agencies and utilities is that they lack an understanding of how to market conservation concepts, and that without truly understanding the consumer, his attitudes and interests, conservation programs will only be marginally effective. The report was generally critical of governmental bodies in setting up internal energy savings programs, of governmental failure to promote energy conservation, and of how to fund the Project.

Commission Staff Testimony

The Commission staff testified on the quantitative measurement of Edison's conservation programs, an analysis of Edison's 1977 conservation programs, a rating of program elements in Edison's EM activities, an analysis of Edison's co-generation activities, and an evaluation of Edison's 1978 and 1979 EM activities in regard to a rate of return adjustment. The staff recommended no rate of return adjustment in this proceeding.

The staff's report on quantitative measurement of Edison's EM programs provides information on the impact of conservation upon electric demand and evaluates methods for quantitatively isolating the impact of EM programs. The report describes customer electric consumption trends from January 1973 to December 1977 and discusses major factors affecting energy consumption, including energy prices and economic conditions, the weather, public awareness, and state building standards.

It discusses methodologies or tools to isolate conservation from other major factors affecting energy consumption, including econometric techniques, consumer surveys, and other methods such as tracking of sales of efficient appliances, energy-saving devices and analysis of meter data.

The staff concludes that: (1) Edison's econometric models are basically sound; (2) model improvements will occur as more EM data is collected; (3) where there are both voluntary and mandatory programs (i.e., insulation programs) an attempt should be made to assess the effect of voluntary programs; (4) the staff's recommendations in Chapters 5 and 6 of Exhibit 87 should be used as guides for future econometric studies; (5) measuring long-term conservation impacts is difficult at best and that long-term price elasticity, adjusted for conservation efforts for such measurements, might be used; (6) where possible, consumer conservation programs should be designed to reinforce or strengthen consumer responsiveness to future price changes; (7) effective EM programs should lead to larger estimated price elasticities as future data reflects the effects of Edison's EM efforts; and (8) that each EM program should be analyzed to determine whether its impact can be measured by estimates of price impacts or whether its impact must be measured independently.

The staff contends that Edison assumes that all voluntary conservation savings are already included within Edison's sales forecasts through the estimate of impacts of price elasticities, but that the staff believes that price effects do not adequately measure voluntary conservation activities^{39/} and current forecasts should be modified to adequately adjust for voluntary conservation efforts. The staff also recommends that Edison's future EM reports should explain how it uses its consumer surveys and that the following data be provided:

- (a) The purpose of collecting EM data.
- (b) What data was requested.
- (c) The frequency and volume of reporting.
- (d) Results of the data collection.
- (e) How was the data used in the measurement of energy savings for each of the conservation programs.

The staff and interested parties should also have the opportunity to participate in improving the quality and effectiveness of EM activities and EM reports. The staff notes that: (1) Edison has implemented its level 1 and level 2 programs which should be accomplished in 1978; (2) there is an increasing difficulty in obtaining necessary governmental approvals to build generating capacity and to meet future energy needs and load growth;

^{39/} The staff assumes that the individual program estimates used are lower limits of what will occur in the future.

(3) existing and increasing energy requirements require large quantities of foreign oil which aggravates the balance of payments deficit to pay for low sulfur oil; (4) one means of cutting down on these requirements is through effectively selling conservation to the public; (5) EM program implementation requires a great deal of time and effort; and (6) Edison has made large expenditures in developing and experimenting with a number of programs without realizing all of the potential benefits from these activities, but that the staff expects these programs will cause dramatic reductions in energy sales and in peaking requirements in 1979. The staff recommends a continuous effort by Edison to evaluate and reevaluate programs, to discard ineffective programs, to promote new effective programs, and to continue to be sensitive to areas of staff concern. The goal of these activities is to develop and implement EM programs which are efficient, worthwhile, and provide maximum benefits to Edison's ratepayers. The staff points out that Commission EM policy is set forth in the Commission letter of December 17, 1975 to the Chairmen of the Boards of Directors of major energy utilities in California which states:

"In urging an expanded conservation effort, we do not minimize the importance of careful cost-benefit analysis in all conservation activities. In our view, a conservation activity is worthwhile if it costs less than the full cost - including environmental effects - of supplying the energy which would be saved. All conservation activities which have any reasonable prospect of cost-effectiveness should be analyzed by utility companies."

The staff states that cost-effectiveness of a utility's conservation/load management activities can be determined on a life-cycle basis which typically considers both customer costs and utility costs. However, the staff notes that customer costs are not included in determining the cost-benefit effect on the utility and that Edison has not identified customer costs for programs.

The staff recommends that: (1) Edison be authorized to promptly establish a report card billing to its customers which shows past and present end-use data to permit comparison of the current and the prior years' usage; and (2) Edison be authorized to establish a program for the elimination of inefficient frost-free refrigerators and freezers from the market place in cooperation with appliance dealers, through payment of an appropriate cash incentive to dealers, to junk secondhand units in order to keep them from being resold.^{40/}

^{40/} Edison contends that further review of this suggestion is needed because while the program may reduce energy consumption, it may also eliminate a needed source of reasonably priced serviceable refrigerators from the reach of low income families.

The staff compared Edison's EM program expenses to PG&E and to San Diego Gas & Electric Company (SDG&E) for 1976 through 1978. Edison's total cost and cost-per-customer have been higher than PG&E's and SDG&E's electric EM activities. Edison's EM expenses for 1979 are averaged out at \$4.37 per customer per year.

The staff testified that: (1) Edison was initially reluctant to implement a voltage reduction program, but that after realizing the feasibility of achieving large energy savings Edison has moved vigorously and effectively to realize these savings; (2) Edison's staff is working aggressively to develop new EM programs; and (3) Edison has not achieved significant conservation results in the residential (particularly in home insulation installations) and commercial sectors.

The overall staff evaluation of Edison's EM activities is as follows: (1) 1976 was a point of beginning with a minimal reduction in nonindustrial use; (2) there was not a significant EM activity expansion in 1977, except for conservation voltage reduction programs; (3) Edison has successfully implemented an industrial audit program, which is confirmed by lower metered use per customer; (4) Edison assisted this Commission and the Energy Commission in developing a commercial and industrial energy audit reporting format which may be used by all California energy utilities; (5) Edison has increased energy conservation effort, but the level is still inadequate and should be expanded, especially in the residential and commercial sectors, and the decrease in residential consumption forecast for 1979 is unacceptable; (6) Edison has agreed to

vigorously expand its residential hardware programs; (7) certain first-year savings were not cost-effective, but where hardware was installed, they may be cost-effective over the life cycle; (8) consumer education programs are important in an EM effort even though they are difficult to evaluate, because the customer may use today's advice in future years or may abandon the conservation effort at any time; (9) Edison's Conservation Division has responded well to outside suggestions and did a commendable job in implementing programs after its supplemental nonincentive programs were approved by the Commission; (10) Edison has agreed to accelerate its program to set nonsolar or non-therapeutic pool timers to operate during off-peak hours and to revise its tariff^{41/} to reflect this change; (11) Edison has agreed to develop a solution to the problem of increased saturation of old inefficient secondhand frost-free refrigerators; (12) Edison's budget for waste heat utilization, co-generation, and load management is reasonable; and (13) Edison has agreed to apply funds not required by program modification or by disallowance of specific incentive programs to water heater and other incentive programs required by D.88551 dated March 7, 1978 in C.10032.

^{41/} Edison recommends modification of the staff tariff proposal to define its on-peak demand period rather than the statewide peak demand.

Energy Commission Position

The Energy Commission contends that: (1) Edison's conservation effort is insufficient; (2) Edison's program measurement and evaluation is deficient; (3) Edison's programs can be improved and standards for expansion of conservation programs by energy utilities should be made; (4) to avoid a future energy crisis all worthwhile conservation efforts should be implemented and fully expanded so that all cost-effective savings are realized; (5) in future proceedings, Edison should bear the burden of proving that each of its nonexperimental programs has achieved all of the cost-effective savings feasible (or that it is not possible to further expand such programs) or be penalized in its rate of return; (6) claimed program savings aside from voltage reduction represent 0.964 percent of the annual consumption in 1976, 1.166 percent in 1977, 1.189 percent projected for 1978, and 1.519 percent projected for 1979; (7) Edison's conservation programs would cost an estimated \$0.011 per kWh, which is approximately one-fifth of the \$0.052 per kWh cost of new generation; and (8) that cost-effectiveness measurements of EM efforts on an annual basis are too high if they do not account for long-term savings from programs.

The Energy Commission requests that all conservation activities which have any reasonable prospects of cost-effectiveness be analyzed in Edison's yearly conservation plan reports.

The Energy Commission contends that Edison failed to identify full costs (with or without evaluating environmental effects) of EM savings or to quantify the extent to which its programs could be cost-effectively expanded. Edison's policy witness testified that: (1) at the present time Edison has adequate capacity and that the kWh which is conserved today should be measured against energy-related costs; (2) Edison is

not deferring construction of new capacity at this time; (3) at a future time, when Edison can defer new construction of capacity due to the success of its EM programs, it could incorporate the cost savings of that deferral in its estimates; and (4) Edison would go into the exhaustive study necessary to provide full costs as proposed by the Energy Commission if ordered to do so.

The Energy Commission recommends that Edison: (1) make greater use of pilot programs, including the use of control groups, to differentiate between effects of Edison's programs and publicity and other influences on the customer group; (2) distinguish between its experimental and pilot EM programs and its established programs; (3) expand the "Sherlock Holmes" residential audit program of its high-use customers from 7,200 to 40,000 audits per year to reach all such customers within five years; (4) develop a method for determining the long-term impact of an energy audit; (5) reword its surveys to find out if customer actions were transitory or continuing, to get data on specific nonadvertising programs, and to develop techniques to reach less responsive customers; (6) concentrate its EM efforts on its most responsive customers and simultaneously develop alternate approaches

to reach a goal; (7) pretest its public awareness programs with the public (rather than internally) to reduce costs and determine receptivity to the programs; (8) conduct surveys and follow-up surveys throughout the year to pick up seasonal responses to its programs; (9) mark its conservation hardware with estimates of cost-effectiveness and resulting energy savings; (10) incorporate comfort as well as economics into its insulation advertising and promotion; (11) distribute its best buys list as well as the Edison's "Cold Facts" brochure, since inquiring customers are likely to be in the market for appliances and receptive to an appliance efficiency list; (12) use the Hy Efficiency advertising budget of \$35,000 to increase the \$5 customer incentive; and (13) that Edison combine its efforts with SoCal's related home improvement program using established retail outlets rather than separate facilities.

The Energy Commission makes no recommendation on rate of return because this Commission has not established goals for Edison's conservation programs to provide a standard for measuring Edison's efforts.

The Energy Commission questioned whether Edison was meeting its own goals for reducing consumption as a result of its industrial energy audits and criticized certain of Edison's advertising as lacking specific useful conservation information which should be included in conservation advertising.

Position of TURN

TURN contends that: (1) there is insufficient evidence in the record to determine the reasonableness of the cost associated with Edison's conservation program; (2) none of the parties can define cost-effectiveness; (3) there was no independent study of the reasonableness of Edison's costs (including labor, printing, and advertising costs) to implement Edison's programs; and (4) there are contradictions in Edison's own evaluation, which would increase its expenses if programs were effective or ineffective. TURN also discusses previously described issues. TURN concludes that to the extent that this proposed rate relief increase is (not) related to the cost of providing electric service or is not shown to benefit the ratepayers and electric consumers, it is unjust and unreasonable and violates Sections 451 and 454 of the Public Utilities Code. TURN contends that Edison is not, in fact, bound by purported targets for specific programs, but it may manipulate the use of the expenses.

Discussion

The conservation-oriented surveys described above illustrate the magnitude of the problem in achieving maximum potential conservation. A large segment of the population either believes that there is no energy problem or that a problem may exist in the future. Several Presidents have sought, unsuccessfully, to eliminate U.S. dependence on foreign oil. U.S. oil imports are growing. Gasoline consumption in California is increasing. President Carter gave the highest priority to the passage of a national energy bill, but it took 19 months of concentrated effort and compromise to

hammer out a bill. There are legitimate differences in approaches by many parties. In this proceeding parties contend that lifeline in general and air-conditioning lifeline in particular are counterproductive to meeting EM goals and that fair cost apportionments, under which true costs are paid by the user, will encourage conservation by presently subsidized customers.

The need to reduce the growth in energy demand for economic, political, strategic, and environmental reasons is increasing. There is a need to: (1) develop economical alternate resources for use in power generation; (2) make better use of resources through greater efficiencies; (3) make effective use of waste heat resources; (4) develop energy storage facilities^{42/} to cut down on the number of new generating plants required for meeting peak loads; (5) shift and reduce peak loads; and (6) reduce consumption. The Commission has spurred the rapid expansion of utility programs to meet these needs (particularly in the last three years) through promotion of conservation, conservation voltage regulation, TOU rates, co-generation, waste heat programs, development of experimental tariffs, and through the establishment of an Energy Conservation Team to work with the utilities in establishing effective programs and to evaluate EM programs.

^{42/} Edison plans to increase its Big Creek generating capacity. The U.S. Bureau of Reclamation is evaluating the feasibility of increasing the size of the Hoover Dam generating plant to use its existing water supply at a higher peak rate for a shorter duration. There is research on the use of underground saline aquifers for heat storage.

The staff contends that Edison's efforts in the commercial and residential sectors are inadequate. Edison contends that its EM efforts have been successful in all market sectors (although program emphasis should be shifted pursuant to the staff's recommendations) and that its recorded 1977 compliance filing showing the 12 month-ending sales results by market sector do not directly reflect conservation efforts since other factors, such as weather, economic conditions, and new customers are reflected in sales. The staff's recommendations on home insulation, further conservation voltage regulation, and customer and dealer notification of energy-efficient appliances are reasonable. Average annual energy cost ranges for typical appliance use should also be distributed to new customers and periodically to existing customers, to appliance dealers, and to builders.

The data resources for EM evaluations are limited. The tools for measurement of the effects of programs are still being developed. The staff's proposals for modification of the econometric model appear to be reasonable and should be considered, but it is premature to mandate those changes for future modeling purposes. Table 5-B of staff Exhibit 87 attributes 17.4 percent of the estimated 1977 residential conservation to specific programs through use of econometric models. The establishment of procedures to sort out and identify the specific conservation impact of one of several programs will require more data and more experimentation before a fixed approach is adopted.

EM activities are now being encouraged at federal, state, and local levels and by the communications media. Edison's EM efforts supply only a portion of the information, both positive and negative, which is relied on by the public. We cannot reasonably expect Edison's efforts to galvanize the public into immediately implementing all possible energy savings activities. We can and do expect a good faith effort to carry out a long-term effort to develop and implement better, more effective, EM programs for all classes of customers developed in cooperation with the concerned regulatory agencies and the public. The level of EM expenditures by market segment and by programs should be periodically reviewed. Given Edison's current efforts a negative rate of return adjustment is not appropriate.

We conclude that a rapid orderly expansion of EM programs is necessary. A crash program to implement all cost-effective programs would be costly and could be counterproductive if customer resistance rather than cooperation should develop. A theoretical determination of maximum potential energy and demand savings is not a measurement of what will occur. It does not recognize counter-influences on achieving such goals, including cost, convenience, habit, perceived and actual benefits from present practices (e.g., the popular acceptance of frost-free refrigerators, which use considerably more electricity than conventional units, has eliminated^{43/} conventional residential refrigerators from the

^{43/} A staff witness does not believe that a mandate to discontinue manufacturing frost-free refrigerators would be made.

market place, and open-shelved refrigerators and freezers in markets waste electricity), and suspicion of Edison's motives. The latter point is demonstrated in the survey results and in TURN's position.

The Commission's instruction to utilities to analyze all conservation activities which have any reasonable prospect of cost-effectiveness should be used as a priority setting tool. Program priorities should be set, for all classes of customers, based on that analysis. Later information should be incorporated in follow-up reviews. ✓

The staff's suggestion of having utilities exchange information to aid in developing better EM programs and for improving measurement techniques should be followed. This interchange should not be limited to utilities or to utilities and Commission staffs. Other interested parties wishing to volunteer their expertise in meeting EM goals should be made part of the process. These meetings should also consider counter-influences or adverse impacts of certain actions on the public, e.g., "unnecessary" outside lights might be needed or desired for security purposes, shifting working hours, or work practices might reduce peak loads and yet require additional energy consumption for indoor or outdoor lighting.

A balanced, understandable, and believable program is needed to meet EM goals. Personal contacts provide the customer with the opportunity to understand how and why he should implement EM techniques. Edison should develop a report card billing to compare past and present use data. Edison should expand its Sherlock Holmes program and should implement program changes pursuant to its agreement with the staff.

We will not require full scale implementation of a dealer incentive program to junk used refrigerator-freezers until the results of an experimental pilot program can be evaluated. In addition to Edison's objection (see Footnote 40), there could be a policing problem in seeing that the units were, in fact, junked.

The present evaluation of EM savings against fuel savings is an interim solution. Edison should develop methods for evaluating the persistence of EM programs, giving consideration to the customer survey changes recommended by the Energy Commission to evaluate EM savings, to measure the effectiveness of its programs.

The definition of cost-effectiveness, including savings due to deferral of construction, is more elusive than we originally contemplated. Edison should be directed to work with the staffs of this Commission and of the Energy Commission and with interested parties to develop a meaningful format to include new construction costs in its estimate and to determine which types of units should be included in those costs, to evaluate the effectiveness of EM activities. At this time, Edison's EM programs are cost-effective in terms of fuel savings alone. Edison's EM estimates are reasonable. Deferred plant savings will be additive to fuel savings. The customer who conserves energy will pay a smaller bill than a comparable customer who does not. The latter will pay a larger portion of fixed costs, including costs for new plant required because of his failure to conserve.

If a need for modifying programs or priorities becomes apparent, we intend to make changes. We will not be tied down by the process of developing better measurement techniques and better survey methods.

We will adopt the staff's recommendation that Edison file new service voltage ranges in its tariffs as set forth in Appendix A of Exhibit 82 and the staff's procedure for exempting certain installations. We will also adopt the staff's proposal for modifying Rule 14.1 in regard to swimming pool pumps, with Edison's modification to reflect the on-peak period of its system.

EM activities may increase the unit cost of electricity, but members of the public have difficulty in understanding why conservation increases unit commodity charges costs. Absent any other change, this is due to spreading fixed costs over a lower sales volume. However, the alternative of not conserving and building new generating plant will result in even greater charges (including costs to minimize adverse environmental impacts) to pay for additional plant to supply the additional needed power; further, it will increase the country's dependency on outside sources of oil.

The Commission has the obligation to correct deficiencies in service, rules, distribution, transmission, storage, or supply of public utilities.^{44/} In considering rate increases we consider the obligation of utilities to maintain adequate, efficient, just, and reasonable service.^{45/}

Implementation of EM programs to reduce demand and consumption to insure the adequacy of energy resources must be considered in evaluating the need for new plant. To the extent that EM programs are successful, there is a reduced need for new plant. To the extent that reasonable expenses are incurred in EM program implementation, revenues sufficient to provide Edison with a reasonable opportunity to recover its expenses for such programs must be authorized.

One of the causes of customer confusion on billing results from the need to refer to several tariffs to determine the total bill, e.g., the ECABF is not shown on the rate tariff. We will revise Edison's tariffs to consolidate domestic rate zones and to include all charges on a single customer bill with appropriate footnotes explaining the size and components of the total bill, together with references to the derivation of non-base rate bill components.

^{44/} See Section 761, et seq., of the Public Utilities Code.

^{45/} See Section 451 of the Public Utilities Code.

The National Energy Conservation Policy Act (Act) calls for each regulated utility to develop a conservation program in compliance with a state plan (to be prepared within guidelines developed by The Department of Energy (DOE)). The Act instructs DOE to allow ongoing conservation programs to continue. It will be necessary, however, for those programs to later comply with the procedures introduced through the state plan, and (where supplying, installation, or financing of conservation measures is involved) avoid unfair marketing practices and anticompetitive activities.

It may be a year or more before utility conservation programs in compliance with the Act are submitted. In the interim period the need to move forward with vigorous conservation activities remains. Edison should therefore continue to develop its programs, assuming that ongoing conservation programs will be allowed to continue, being aware of the possible limitations and additional mandate activities implicit in the Act. The Commission staff should be consulted to assist Edison in determining reasonable interim steps to be taken in anticipation of DOE's possible interpretation of any vague portions of the Act.

VI. ENERGY PRODUCTION RESOURCES

Our previous discussion on rate of return emphasizing the importance of return on equity should put utilities on notice that, when faced with potential increases in customer demand, there may not always be a financial benefit to favoring options, including new plant construction, that expand rate base. This should encourage utilities to seriously consider other options for expanding or improving service. More aggressive facility maintenance and modification efforts, including repowering, can increase plant output and reliability. Load management through rates and devices can improve load curves and reduce increases in peak demand. We will order Edison to review its repowering options and facility maintenance and modification efforts to determine additional cost-effective options, and to report its findings within 240 days (as a compliance filing in these proceedings).

Cogeneration is another alternative, and we repeat that we expect Edison to pursue its cogeneration potential aggressively.

In addition, many utility customers, especially institutional users (e.g., schools, hospitals, and the telephone utilities) have or may be planning standby auxiliary power sources for emergency use or cogeneration facilities. Edison should, within 240 days, review and catalog all such existing and potential sources in its service area and their availability to contribute power during Edison's high demand periods. Edison should address the economies, institutional arrangements, maintenance and fuel requirements, and possible cost-effective incentives necessary to enable it to call upon such auxiliary facilities as peaking capacity for its system and report to the Commission on its findings within 240 days. ✓

Our direction to review these options, which include additional sources of supply, is made in keeping with our often repeated observation that conservation very often represents the most cost-effective alternative for meeting a given level of load demand. Where it is cost-effective against other alternatives, conservation investment represents the most efficient use of

California's available capital - with minimum environmental impact - and should be encouraged over new generation. We may issue an OII to further explore these ideas and alternatives.

There was considerable discussion in D.89316 on the need for long-range electricity supply and investment planning and for such planning to include alternative sources of energy, including energy conservation. We agree that this need exists with respect to Edison and, furthermore, will order Edison to make such supply and construction plans looking forward a minimum of 20 years. Edison shall also make such plans publicly available.

Finally, we would like to reiterate that an overall conservation ethic and approach on the part of energy utilities we regulate will not be detrimental to the shareholder. If the measurement of earnings we apply is return on common equity the utility is not penalized for slowing generating plant expansion. Likewise, we have adopted an SAM for gas utilities to insure that declining sales do not erode earnings, and for electric utilities we will soon begin hearings in our investigation into the establishment of an adjustment mechanism for electric sales (AMES) in OII No. 25.

VII. RATE DESIGN

Cost of Service - Cost Allocation

The Commission has in previous decisions considered both the allocation of test year costs and marginal cost data as factors in establishing rates. In D.86794 the Commission found that the monthly peak responsibilities method (MPR) was reasonable as between jurisdictional operations and could be extended in examining Edison's jurisdictional operations. In this proceeding evidence was presented by Edison, the staff, CMA, Airco, Inc., General Motors Corporation, and CRA. Since cost allocation is only one factor to consider in rate design we believe it is unnecessary to detail the differences here. The staff exhibit included the following MPR cost allocation results at Edison's present and proposed rate levels:

	<u>Rate of Return</u>	
	<u>Present</u>	<u>Proposed</u>
Domestic	3.4 %	7.48%
L&S Power	10.86	13.26
Large Power	7.23	11.85
Very Large Power	8.81	11.84
Agriculture & Pumping	6.87	10.18
Street Lighting	5.31	7.86
Total	6.61	10.25

The Commission has not in the past, nor is our intention now, to exactly equalize rate of return by classes. The variation between classes as indicated is not considered extraordinary. While cost allocation is an essential tool between jurisdictions, it is not necessary or appropriate to find definitive costs as between customer groups. Many cost approaches and methodologies would be of equal validity if our only goal was to precisely equalize returns among customer classes. However, as is apparent from the following rate design discussion, there are many concerns to be weighed and balanced in adopting a rate design that serves the overall public interest.

With respect to rate design we are more concerned with current and future cost levels. The staff exhibit included the following marginal cost data:

<u>Transmission Level</u>	<u>Annual Average</u>
Demand (\$/kW/mo.)	\$7.81
Energy (¢/kWh)	2.86¢
 <u>Distribution Level</u>	
Demand (\$/kW/mo.)	\$13.31
Energy (¢/kWh)	2.99¢

We are particularly interested in future proceedings with comparing generation and transmission marginal cost data on a seasonal basis with the rate levels of the various customers.

Rate Design Proposals

Edison

Domestic Rates

Edison proposes to consolidate present Schedules Nos. D-1 and D-2 into a new Schedule No. D-1, to consolidate Schedules Nos. D-3, D-4, and D-5 into a new Schedule No. D-2, and to redesignate Schedule No. D-6 as Schedule No. D-3. Edison also proposes to: (1) use the customer charges and lifeline base rate energy charges of present Schedules Nos. D-1, D-3, and D-6 for the three new schedules; (2) institute higher customer charges for nonlifeline residential service (e.g., service for hall and outdoor lighting and laundries in apartment houses); (3) use existing energy blocks of 300 kWh per month and over 300 kWh per month; and (4) substantially increase nonlifeline base rate energy charges for all consumption to 4.554 cents per kWh (this rate is 95 percent above the present rate for nonlifeline consumption over 300 kWh, after the transfer of the present base rate energy cost of 0.739 cents per kWh to ECAC).

Air Conditioning Lifeline

Pursuant to our instruction in D.88651^{46/} Edison and the staff prepared studies and each recommended establishment of two climatic zones where space cooling is necessary to supply the minimum energy needs for human comfort and recommended air cooling lifeline allowances (ACLL) within each climatic zone. The area proposed by Edison is larger than that proposed by the staff.

Edison proposes that: (1) ACLL be based on the minimum requirement to maintain a 1,000 square foot house at 85 degrees Fahrenheit with an evaporative cooler, namely, 100 kWh per month in Cooling Zone V and 50 kWh per month in Cooling Zone H; (2) this ACLL would apply for six months from May through October; and (3) a customer with a refrigerated air conditioner could obtain a supplemental ACLL of 200 kWh per month in Cooling Zone V and

^{46/} "...[W]e will adopt a policy in this proceeding to establish in forthcoming rate decisions including electric utilities lifeline quantities of electricity necessary to supply the minimum energy needs of the average residential user for space cooling to 85 degrees Fahrenheit in appropriate climatological areas."

100 kWh per month in Cooling Zone H if the customer installs a load control device approved by Edison at his own expense. Edison believes that a rotating interruption of air conditioning service during system peaks would not cause comfort problems. Edison's witness contends that: (1) its appliance saturation survey shows that there are large numbers of customers in Cooling Zones H and V who do not have air conditioners, and that fact makes it evident that evaporative coolers are more than adequate to provide the minimum cooling requirement, e.g., over 73 percent of Edison's customers in its Barstow and Ridgcrest districts in Cooling Zone V and over 61 percent of its Delano district customers in Cooling Zone H have evaporative coolers;^{47/} (2) if the higher staff ACLL of 500 kWh and 300 kWh per month in staff cooling Zones V and H were adopted, the customer with an evaporative cooler would receive an ACLL greater than his air conditioning requirements which would be applicable to nonlifeline consumptive uses; (3) if a customer with a refrigerated air conditioner wants the supplemental allowance he should be willing to have a load control device installed to enable Edison to reduce the air conditioning demand impact on its system peak; (4) air conditioning load provides the largest peaking demand increment to its system peak; and (5) he doubted that customers would install an air conditioning system and a load control system solely as a means to obtain additional lifeline quantity rates. Some residential customers in these zones have neither evaporative coolers nor air conditioning. He recommends that the \$9.7 million deficiency resulting from ACLL, at Edison's proposed rates, be recovered by increasing nonlifeline domestic sales by 0.147 cents per kWh. He estimates the ACLL deficiency based on the staff proposal to be \$9.3 million at present rates, and \$28 million at proposed rates.

^{47/} Edison's Exhibit 110-1 also shows a saturation of central and room air conditioners of 53 percent in Barstow, 56 percent in Ridgcrest, and 49 percent in Delano.

Rate Zones

Edison contends that: (1) the cost relationships between zones contained in its 1975 study should still be used (that study justified retention of rate differences between zones) and (2) its proposed elimination of those zones was responsive to Commission direction.

Lighting and Small Power

Edison proposed to consolidate Schedules Nos. A-1 to A-6 into three rate schedules in parallel with its proposed domestic schedules. The staff proposes a single schedule.

Edison proposes to increase customer charges ranging from \$1.00 to \$1.50 per month for single phase service to a \$4.00 to \$5.00 range, and to increase three phase service customer charges from a \$2.00 to \$2.50 range to a \$4.00 to \$5.00 range.

Edison's proposal would: (1) result in some bill reductions at lower consumptions; (2) generally reduce energy charges; (3) sharply increase demand charges from \$1.23 to \$5.00 per kW of billing demand over 20 kW; and (4) continue declining block rates. Edison proposed to increase the average Rate B charge to 3.4 cents per kWh. Under Rate A, Edison's proposal would increase bills slightly at lower consumptions and decrease bills slightly at higher consumptions. The staff proposal would decrease bills slightly for lower consumptions and increase bills sharply for higher consumptions.

Under Rate B, Edison's proposal would decrease bills for smaller loads and increase bills for larger blocks.

Large Power

Edison proposes sharp increases in demand charges, reductions in energy charges, and elimination of one demand block and two energy charges.

Very Large Power and Other TOU Rates

An Edison witness testified that: (1) proposed increases in customer charges and in demand charges and decreases in energy charges were made to make customer, demand, and energy charges more

closely reflect costs; (2) the partial removal of demand costs now reflected in energy charges works towards the removal of the subsidy of low load factor customers by higher load factor customers; (3) a reduction in the ratio of on-peak kW demand to the maximum kW demand of 2½ percent occurred (in comparing December 1977 to December 1976 for 82 of 108 TOU customers) and a bill analysis indicate that a reduction of on-peak kW is occurring comparable to the level Edison anticipated; and (4) CRA's proposal for a revenue equalization clause to spread the net revenue loss resulting from the load shift stimulated by TOU rates to all customers is unnecessary because the revenue shifts are consistent with the assumptions used to develop the rates.

Commission Staff

Domestic Rates

The staff proposed three alternate domestic rate structures. Alternate I would: (1) use Edison's three rate zones; (2) establish an initial monthly block of 240 kWh, 2-250 kWh blocks, and a block for use above 740 kWh; and (3) increase unit costs for higher use. Alternate II would: (1) establish one rate zone; (2) establish the same blocks as Alternate I; and (3) increase unit costs for higher use. Alternate III would: (1) establish one rate zone; (2) establish an initial monthly 750 kWh block and a block for use over 750 kWh; and (3) increase unit costs for greater lifeline use. The staff originally recommended a small increase in lifeline tailblock rates because the nonlifeline tailblock rate was approaching a marginal cost level and at the time there appeared to be a sufficient rate differential to increase lifeline rates pursuant to Section 739 of the Public Utilities Code.

Air Conditioning Lifeline

The staff contends that: (1) a separate evaporative cooler ACLL is inadequate for many customers and that given administrative and policy difficulties no restriction on the use of the ACLL was appropriate; (2) saturation within Cooling Zones H & V is 87 and 99 percent, respectively; (3) Edison has not provided an estimate of the revenue requirement resulting from adoption of the supplemental ACLL; and (4) the staff ACLL is below the average use

in Cooling Zones H & V and the ACLL could encourage users to stay within the allowance to realize rate savings and would not encourage further use of air conditioning within the two zones. The staff estimates the revenue effect that would result from its proposal at proposed rates would be a \$20.3 million revenue loss.

Lighting and Small Power

The staff proposes a customer charge of \$2.50 per month.

The staff concurs with Edison on the need to narrow the disparity between Rate A and Rate B (5.0 cents per kWh vs 2.9 cents per kWh averages at present rates) and in proposed blocking changes reducing the numbers of energy blocks.

The staff proposes to: (1) invert energy blocks in Rate A; (2) establish demand charges of \$3.00 per kW for the first 20 kW of demand; (3) increase demand charges for demands over 20 kW to the \$5.00 level proposed by Edison; (4) to reduce the initial block energy charges for the first 150 kWh per kW of demand to 1.9 cents per kWh compared to Edison's higher charges which are tied to the energy block charges in Rate A; and (5) the staff proposes substantially higher second and third block energy charges than Edison.

Large Power

The staff proposes a lower initial demand charge and one additional demand block at a higher charge than proposed by Edison, and two energy blocks vs three blocks proposed by Edison, at a higher level than proposed by Edison for customers with demands below 1,000 kW and several alternate designs for customers with demands greater than 1,000 kW (potential TOU-7 customers).

Very Large Power and Other TOU Rates

The staff analyzed several alternate TOU-8 rate structures.

A staff witness testified that: (1) marginal cost studies justify higher demand charges than proposed by Edison but that a full one-step increase to that level would have adverse economic impacts; (2) further information is needed before consideration of establishing winter and summer rate differences; (3) the theoretical justification for doubling mid-peak demand charges would reduce

incentives to shift on-peak demands; (4) no demand charges should be levied for off-peak demands; (5) the reduction in energy charges proposed by Edison would help efficient high load factor customers, but it prices energy below marginal costs to a level near fuel oil costs; (6) Edison's proposal would be a signal that energy costs are going down, and could reduce conservation efforts; and (7) very large customers strongly oppose any unsubstantiated increase in energy cost differentials. The staff proposes an alternate TOU-8 rate which increases demand charges and leaves energy charges substantially unchanged, and another alternate which increases both energy and demand charges. The staff recommends the former because data indicates a higher demand cost compared to present levels, and also recommends against reducing any portion of the rate.

The staff also submitted alternate rate designs with different winter and summer energy charges and inverted on-peak energy charges where the rate increased from 3 cents to 5 cents per kWh as the percentage of on-peak consumption increased. The staff marginal cost study shows differences in on-peak transmission energy demand from 3.05 cents per kWh in summer to 2.96 cents per kWh in winter, and corresponding marginal costs for distribution energy costs of 3.18 cents per kWh and 3.09 cents per kWh.

Other Parties

Domestic Rates

CMA proposes two domestic rate forms adopting Edison's zoning, lifeline energy charges designed to recover its proposed allocation of revenues to domestic customers. One of the rate forms has a uniform nonlifeline energy charge for all consumption. The other has higher summer and lower winter rates for all nonlifeline sales.

TURN recommends no reduction in rate zones to protect existing rates of urban customers.

Other parties either support Edison's position or recommend that no ACLL be authorized. They contend that: (1) ACLL is both antithetical to conservation and to cost recovery; (2) any subsidy gives false price signals (encouraging consumption) to the person

receiving the subsidy, and discourages productive uses by overpricing to the customers' paying the subsidy; (3) the lifeline subsidy which allegedly presently covers over half of the domestic consumption is so high that only a small fraction of Edison's domestic users pay compensable rates; (4) the staff proposed ACLL is approximately equal to average consumption in the present rate Zones D-3 through D-6 where ACLL would apply, and that an average use is not appropriate for establishing a minimum allowance; and (5) that ACLL is essentially discriminatory.

Large Power

A customer proposed a reduction in the minimum demand qualifying for a primary voltage discount. Edison's witness contends that there is no cost justification for this proposal, which would increase Edison's cost of service.

Very Large Power and Other TOU Rates

CRA's witness testified that: (1) there is no justification for differentials between TOU schedules based on demand charges or energy charges (except for a possible allowance for distribution line losses), but there should be a differential to reflect differences in customers' costs; (2) there is no justification for assuming a shift in demands; (3) the calculation related to demand shifts ignores the reduction in energy costs which goes with the revenue reduction and which would therefore increase Edison's revenues; (4) demand reduction reduces future costs but there is an interim revenue loss which must be absorbed by the company or its ratepayers; and (5) that customers benefiting from demand shifts should share the costs of making the shifts. He recommends adoption of a TOU schedule to reflect these concepts, which include a revenue equalization clause to adjust the ECABF by the average differential between TOU revenues and revenues derived from prior rate schedules. ✓

CMA proposed a revised TOU-8 rate using the same rate form as Edison with a lesser increase in the customer charge and in the on-peak demand charge than Edison, and no changes in mid-peak demand charges or energy charges.

Several witnesses from the water and sewer industry presented testimony based on their industries' studies and evaluations of the impact of TOU on their operations. They indicated that: (1) some members could make shifts, other could do so if certain investments on their part were made, and others could not shift; (2) forcing certain shifts could result in major expenditures which would be less energy- or dollar-efficient than present conditions; (3) TOU should be applied gradually after evaluating impacts based on test studies; (4) TOU meter information should be available to the customer as well as to the utility on a timely basis; (5) interruptible rates and load control might be a preferable alternative to TOUs in slowing the need for power plant investment by Edison; (6) TOU rates may not be effective during emergencies or periods of high economic activity, when production should have priority; (7) TOU would be of little value during economic recession since the power load is also down during these periods; and (8) that rates should be designed primarily to influence customers with poor load factors who also have maximum demands during peak periods. ✓

An orchard operator requested that wind machines used between 8:00 p.m. and 8:00 a.m. to protect trees from frost damage should be served under a TOU rate, rather than a regular pumping rate, with a drastically reduced connected load service charge and off-peak energy charges. He contends that demand meters were not required for this service since they were operated during off-peak periods, but he conceded that a timing control to prevent operation outside of the designated hours might be required. He discounted Edison's cost of supplying such service and suggested the application of some modification of PG&E's Schedule No. PA-1T to accomplish his proposal.

Agricultural and Pumping

Edison's existing P-1 rate structure has five service charge rates based on the size of connected load. There are three energy rate blocks for each service charge rate which reflect load factors. Edison proposed 31 to 40 percent increases in the service

charges, 18 to 21 percent increases in the first energy block, and 1 and 2 percent increases in the second and third energy blocks. The staff proposes a single service charge rate and three energy block rates.

The Farm Bureau supports Edison's design for Schedule No. PA-1 to retain the distinction of graduated service charges based upon size of connected load, compared to the staff proposal, which would result in a smaller increase for customers with smaller motors than for customers with larger motors. The Farm Bureau contends that:

(1) Edison's proposal benefits customers who arrange to connect larger loads on a single meter; and (2) the staff proposal would greatly simplify the tariff schedule and encourage as high a load factor for service from several meters as through one meter.

For Schedule No. PA-2, Edison proposes to: (1) increase the monthly billing demand charge for up to 75 kW of billing demand from \$109.00 to \$431.25, an increase of \$322.25, or 296 percent; (2) increase additional monthly billing demand charges per kW of demand from \$1.14 to \$5.35, an increase of \$4.21, or 369 percent; (3) consolidate and reduce the first energy charge block; and (4) reduce the second and third energy charge blocks. The staff proposal would increase the charge for up to 75 kW of demand to \$225.00 and would increase the charge for additional demand to \$5.00 per kW of demand. The staff proposes higher energy charges than Edison.

The Farm Bureau supports the staff proposal except for the demand charge in excess of 75 kW, which it contends is excessive.

Special Contracts

The only increase proposed by Edison for special contracts is to Edwards AFB in accordance with the tariff schedules it is billed under. The main base is billed under Schedule No. TOU-8 and the rocket site under the appropriate Schedule No. A-7 or Schedule No. TOU-8. The staff supports Edison's proposal.

Adopted Electric Rates

Domestic

An objective, as we authorize Domestic, Lighting, and Small Power rates for Edison, as it was in our recent decision for PG&E (D.89316, dated September 6, 1978), is to eliminate declining block rates. Declining block rates are inconsistent with the goal of encouraging conservation and slowing the need for financially and environmentally costly new generating units. The problem with declining block rates is that the last energy units used (and which could possibly be saved) are the least expensive, and the customer does not receive as meaningful an economic signal when he does conserve.

In addition, the rates to be authorized more fully reflect, than has been done in previous decisions, the concept of marginal cost, and the marginal costs developed in this proceeding. Marginal costs are the one set of costs which, when translated into prices, serve to promote the most efficient use of scarce resources and most usefully indicate to consumers the costs they are imposing on the system. As we stated in D.85559, "Conservation in the sense of efficient allocation of electricity will be the keystone of the rate structure." Our movement in the direction of marginal cost pricing represents a major effort in the pursuit of conservation and in promoting the most efficient use and allocation of resources. The utility and the staff should increase their efforts in developing marginal costs and rates based on marginal costs for future proceedings.

After a review of the evidentiary record, we will adopt the staff's recommendation to eliminate various density zone rates and consolidate domestic Schedules Nos. D-1 through D-5 into one Schedule No. D-1. This is done to simplify Edison's rate structure and enable the public to understand information disseminated about

electric rate design, and how conservation will affect their electric bills. Further, by establishing a uniform \$2.00 per month domestic lifeline customer charge, we can shift revenue production to commodity use and price units of energy use so that utility bills are usage sensitive. These objectives are in the public interest as California and the nation move toward a conservation oriented energy ethic.

In conjunction with the adoption of a rate design intended to encourage conservation, customer education, an understanding of how the rate design can equate to economic savings is essential. This is particularly true for the domestic customer who may tend not to closely scrutinize the reasons for his billing total and calculate the economic effect of a different usage habit. ✓

We will also adopt the staff's proposal to establish a tariff and bill format which will show the total lifeline and nonlifeline energy charges. The breakout of ECAC and other non-base rate billing charges can be made by explanatory footnote. Adoption of summer and winter rates will not assist the domestic customer in understanding his rates. Edison should develop a bill format to provide sufficient information to enable customers to readily follow the calculation of their bills. The bill should, at a minimum, separate the customers' monthly charge from the commodity charge so that the customer is aware of the price being paid for increased usage. In the interim, Edison should distribute bill inserts explaining the calculation of bills, the need for conservation, the cost for excessive use of electricity, briefly describe conservation programs, and information on where to get further details on the programs. This information should be furnished to new customers and should be redistributed at six-month intervals. ✓

Lifeline Rates

Consistent with the policy discussed above, we will eliminate residential nonlifeline declining block rates and establish one uniform flat rate above the lifeline quantity (which is higher than the lifeline rate) to encourage conservation. Also, we find it is reasonable to simplify lifeline commodity rates which now vary with existing zones and establish uniform lifeline rates. In so doing we increase the chance that Edison's customers can be presented with easily comprehensible rate schedules and, accordingly, readily equate incremental units of commodity use to dollars.

Edison should study the effects of a tailblock nonlifeline rate substantially higher than the flat rate to determine any conservation effects that rate design may afford. In Edison's next rate proceeding, we will be interested in determining the consumption level for inclusion in the tailblock to further discourage elastic demands. In addition to rate zone consolidation and ACLL, the adopted rates reflect the shift of energy cost from base rates to the ECABF. We will adopt a nonlifeline customer charge of \$4.50 per month.

The staff's ACLL proposal, allowing for two climate areas, is reasonable and will be adopted. The staff's proposal was criticized because it provided an ACLL for all customers within certain climate areas. However, the evidence reflects that there is an extensive saturation of air conditioning units in such areas. The difficulty for Edison (and the expense) to administer a certification program in such areas would be considerable. Given the mobility of customers, it is reasonable to authorize an ACLL allowance for all customers within the zones. Also, the occasional

customer who does not have air conditioning will, with adoption of ACLL, have an economic incentive not to acquire an air conditioning unit (and to not add to Edison's peak-load demand). The combined use of central and room air conditioning units is more prevalent than evaporative cooling in communities in both cooling zones. It is therefore appropriate to base the allowance on air conditioning requirements. Adoption of Edison's proposal could well trigger the installation of additional air conditioning equipment within the cooling zones to benefit from the supplemental allowance and, accordingly, would not encourage conservation. We will, therefore, adopt the staff proposal modified, to reduce the ACLL quantity in Cooling Zone H to 280 kWh per month as adopted in the comparable PG&E territory in D.89316.

The Commission is aware of the summer peaking problem which is greatly contributed to by residential air conditioning. We wish to examine proper rate relationships for utility installed, owned, and maintained load control devices. The review should include the potential for rate differentials for new residential dwellings with and without utility load control devices. Tariff requirements which would facilitate the installation of utility load control devices in new construction should also be considered.

Lifeline rates, including the present ECABF, are not being increased. The rate above lifeline quantities is being increased by about 20 percent and is well justified by the increasing cost of energy, and is intended to further encourage conservation.

Lighting and Small Power

The present declining block rates for nondemand metered customers range from 5.4 cents per kWh for the first 100 kWh to 2.7 cents per kWh over 3,000 kWh. We are eliminating the declining block rate and establishing a uniform rate (5.88 cents per kWh including the present ECABF level). Minor rate reductions in the initial block will be offset by significant increases for higher use to encourage conservation. Rates for this class of customer, historically priced at the highest unit cost, are being increased only slightly from present rate levels. ✓

The rates for demand metered Lighting and Small Power customers are being modified to provide much higher demand charges and proportionately lower energy charges. Continuation of a block rate structure with lower unit energy rates for high load factor customers together with higher demand charges is intended to encourage reduction in maximum demand in relation to customers' average demand and energy use.

For Schedule No. P-1 we will adopt a flat service charge of \$2.50 per horsepower of connected load and three energy rates that give customers the incentive to achieve higher load factors and accordingly shift load to off-peak periods. ✓

For Schedule No. TC-1 we will adopt a customer charge of \$4.00 and a flat energy charge of 2.00 cents per kWh. ✓

Large Power

The rates are being modified to provide much higher demand charges to encourage reduction in maximum demand. The rate schedule and increases are at levels consistent with Schedule No. TOU-8. This will permit integration of a subsequent decision in Edison's A.57653, wherein the TOU rate structure is being considered for customers with demands in excess of 1,000 kW. The rate levels

adopted herein for large power customers include higher than average percent increases but an average cents per kWh at a reasonable level in relation to other classes of service.

Very Large Power

All parties emphasized the importance of the level of on-peak demand charges; some to reflect costs more closely and some to influence poor load factor customers to shift load. Marginal cost studies would justify even higher demand charges than recommended by Edison. We will limit the demand charge to the \$5.05 per kW proposed by Edison at this time. This level together with minor modifications to the energy rate will result in an increase of between 13 percent and 14 percent and an average rate (including ECABF) of slightly less than 3.5 cents per kWh. This level, while substantially lower than that to other classes and below marginal cost, is reasonable at this time. The average percent increase is greater than the average percent increase to other classes but less than that applied to some specific rates for other classes.

While we are not changing the form of the TOU rate at this time, we wish to encourage the staff, the utility, and other parties to study and recommend rate forms which will encourage conservation, provide the incentive to optimize system load characteristics, and encourage cogeneration. We wish to examine TOU rates which will provide higher charges during critical peak periods, will develop the proper rate relationships with marginal cost, and will provide interruptible features.

We are continuing the 25 percent ratchet of the on-peak demand charge provision since there is no justification for Edison's proposed increase to 50 percent of maximum demand. Edison's ratchet of 85 percent for cogeneration contracts is too high and should be established at a lower level. Edison should also provide, at the customer's option, a reduced monthly standby charge for cogeneration. With the increase in Schedule No. TOU-8 demand charges to \$5.05, it is reasonable to increase the interruptible discount under Schedule No. TOU-8-I for Rate A and Rate C.

Agricultural and Pumping Rates

For Schedule No. PA-1 we will adopt the staff's proposed rate form which greatly simplifies the tariff by consolidating 5 existing demand blocks into 1 and 15 energy blocks into 3. The rate form for Schedule No. PA-2 should be consistent with that of Schedule No. PA-1; therefore, we will adopt a flat demand charge of \$3.75 ✓ per kW and 3 energy blocks. Both of the adopted agricultural rate schedules continue the multiple block energy rate structure that encourages higher customer load factors.

Street Lighting and Outdoor Lighting Rates

We will adopt Edison's proposed rate form (which was supported by the staff) for Schedule No. LS-1, except incandescent lamps will no longer be available for future installations. Edison's proposal promotes efficient use and energy conservation by increasing the charges for incandescent and mercury vapor lamps while decreasing the charges for the highly efficient high pressure sodium vapor lamps. The staff also supported Edison's proposal for Schedules Nos. LS-2 and OL-1 with minor changes. For Schedule No. LS-2 the staff recommends that the two energy block rates be consolidated into one energy rate at approximately 2.5 cents per kWh and that Edison include in Schedule No. OL-1 options for high pressure sodium vapor lamps because of their high efficiency. We will adopt the staff recommendations for Schedules Nos. LS-2 and OL-1. We are also increasing slightly the lamp charge under Schedule No. DWL. ✓

Summary of Adopted Rates

The following tabulation summarizes revenue increases by customer groups. The revenue increase in dollars, increase in percent, and average rates in cents per kWh at present and adopted levels are as follows:

<u>Customer Group</u>	<u>Revenue Increases</u>		<u>Average Rates</u>	
	<u>\$X10³</u>	<u>%</u>	<u>Present</u>	<u>Adopted</u>
Domestic Lifeline	\$ -	-%	4.96¢/kWh	4.59¢/kWh ^{1/}
Domestic Nonlifeline	18,618	15.6	4.10	4.74
Lighting & Small Power	14,580	2.80	4.67	4.80
Large Power	43,600	8.58	3.50	3.80
Very Large Power	40,752	13.4	3.05	3.46
Agricultural	4,871	5.86	4.04	4.28
Street Lighting	<u>1,579</u>	<u>3.64</u>	<u>6.52</u>	<u>6.76</u>
Total	124,000	5.77	4.02	4.25

^{1/} Includes customer charge and effects of rate zone consolidation and air conditioning lifeline allowances.

The rates in Appendix A hereto reflect an increase in ECABF on an equal cents per kWh (of approximately \$395 million, system basis) as a result of transferring that amount of energy cost out of base rates. The increase in ECABF is necessary to make Edison whole for energy costs removed from basic rates herein.

Findings

1. If base rates are established herein that exclude energy costs, Edison's base rates will be established consistent with D.85731, dated April 27, 1976, in C.9886, and Edison may recover those reasonably incurred energy costs in its ECAC balancing account.
2. The estimates of average customers, sales (adjusted for the effect of Edison's voltage reduction program), and revenues adopted on pages 15 and 16 are representative of test year conditions.
3. It is reasonable to expect that Edison's payroll expense will increase 7 percent for nonmanagement personnel and 5 percent for executives as a result of 1979 wage settlements.
4. The reasonableness of Edison's fuel and purchased power costs can be fully analyzed and tested in Edison's ECAC proceedings.
5. Edison's proposed test year expense of \$1,055,000 for the Liquid Fast Metal Reactor program is speculative.
6. Edison's system power production expense (to be considered in setting base rates) will be \$241,582,000 for the test year.
7. Edison's system transmission expense will be \$40.5 million for the test year.
8. Edison's system distribution expense will be \$80.7 million for the test year.
9. Edison's estimate of test year customer accounts expense does not reflect \$100,000 in supervisory expense savings and \$1.4 million savings for customer record and collection activity resulting from customer information service computerization. Test year customer accounts expense for Edison's system will be \$43.9 million.
10. Twenty million dollars is a reasonable level of test year expense for Edison's Energy Management (conservation), customer service, and information activity.
11. Edison's system administrative and general expense will be \$125.3 million for the test year.

12. Edison's system test year depreciation expense will be \$175.2 million. ✓

13. Nuclear decommissioning expense can be estimated now and amortized, accordingly that expense can be included for ratemaking. The Finance Division's proposal for treating nuclear decommissioning expense would result in present ratepayers not fully bearing their current share of amortized decommissioning expense.

14. Edison's proposed expenditure level for test year conservation activity is adequate and reasonable. However, other specific conservation activities may be directed by this Commission as they are necessary and nonbase rate surcharges may be appropriate to fund such additional activities.

15. Edison's system test year expense for other than income taxes will be \$70.9 million. ✓

16. Issues surrounding the federal income tax rate to be used in calculating test year income tax expense (statutory or effective tax rate) can be more thoroughly explored and addressed in OII No. 24.

17. Edison's estimated test year system income tax expense at present rates will be \$44.3 million. ✓

18. Edison's system weighted test year rate base is estimated to be approximately \$4.2 billion.

19. If the ad valorem tax expense saving for test year 1979 (approximately \$42.9 million) resulting from passage of Article XIII-A of the California Constitution is reflected in the adopted results of operation, the present tax reduction billing factor can be eliminated. Edison or its ratepayers can be made whole for any over- or undercollection for this extraordinary tax saving through the balancing account procedure established in OII No. 19.

20. The capital structure adopted on page 128 reflects test year capitalization and cost factors.

21. An authorized return on rate base of 9.60 percent and return on equity of 13.49 percent is reasonable and will allow Edison the opportunity to realize adequate earnings.

22. The authorized rate of return on rate base and return on common equity (resulting in the increased revenue requirement found necessary herein) is expressly authorized and found reasonable in recognition that the next earliest test year to be used in establishing Edison's base rate revenue requirement will be 1981. Accordingly, the rates found reasonable herein are reasonable only if 1981 is the next earliest test year used to set base rates for Edison.

23. Application of the new federal corporate income tax rate of 46 percent for the test year (and for use in the net-to-gross multiplier) results in a reduction in gross revenue requirement of approximately \$9.7 million.

24. Given the adopted test year results of operation (set forth on Table I, page 11) and the return on rate base and common equity found reasonable, Edison has an increase in jurisdictional revenue requirement of approximately \$124 million over the revenues produced by the base rates ~~authorized in the last general rate proceeding (D.86794, A.54946).~~ ✓

25. A management audit conducted by independent consultants, into areas approved by the Commission, could result in expense savings to Edison (that would ultimately benefit ratepayers).

26. The accounting changes, if adopted, set forth on page 107 will make Edison's books more reflective on a ratemaking basis and more useful in processing revenue requirement requests. ✓

27. Edison needs to review all its options for repowering existing generating facilities, expanding facility modification and maintenance efforts that can improve generating efficiency and reliability.

28. Edison needs to review and catalog all auxiliary power and cogeneration sources in its service area and determine their availability and potential to contribute power during Edison's highest demand periods.

29. Edison needs to prepare future electricity supply and investment plans for a period of a minimum of 20 years and estimate the corresponding marginal costs for demand and energy.

30. Continued vigorous conservation activity is necessary to make the public aware of the need for and the economic benefits of conservation.

31. Edison's present customer bill format does not adequately inform customers of the results of their energy conservation efforts, nor does it explain the operation and effect of Edison's conservation oriented rate design.

32. If Edison's service voltage ranges are reflected in its tariffs as set forth in Appendix A of Exhibit 82, the conservation of energy will result.

33. To assure that energy savings will continue under Edison's Conservation Voltage Regulation Program and that all possible additional energy savings be obtained by full cost effective expansion of that program, Edison should develop data and file reports as required of Pacific Gas and Electric Company (PG&E) by D.89315, Ordering Paragraphs 2, 3, 4, and 6.

34. Edison should commence a Voltage Surveillance Program similar to that set forth for PG&E in D.89315, Ordering Paragraph 5, to assure that feeder circuits which have been adjusted to the new service voltage range under the Conservation Voltage Regulation Program remain within the voltage range established.

35. Edison should revise its Rule No. 14.1, "Prohibitions and Curtailment Provisions", to curtail the use of pool filter pump motors during daily peak periods as recommended in Exhibit No. 82 modified to the corrected hours, from noon to 6:00 p.m., as suggested by Edison.

36. Cost allocation results between jurisdictional customer classes is but one factor to consider in apportioning a utility's revenue requirement among customer classes. Rates established with primary emphasis on marginal costs promote the most efficient use of resources by providing more accurate price/cost information to customers. Since marginal cost information is becoming more critical, Edison and the staff should increase efforts to develop and propose rates based on marginal costs. ✓

37. Conservation is a source of energy in that it enables the utility to forestall the building of otherwise necessary but extremely costly and environmentally degrading new generating facilities. The benefit of slowing the building of new generating capacity has tremendous economic benefits to Edison's ratepayers and environmental benefits that accrue to the public as a whole. ✓

38. Declining block rates discourage conservation in that the last commodity units used are priced the lowest, thus the economic signal and benefit to the customer to conserve is not as substantial and noticeable as it could be. ✓

39. Establishing a uniform domestic rate zone, with a \$2.00 monthly charge, will allow more revenue requirement burden to be placed on commodity use. The result will be commodity rates priced closer to marginal costs, which can serve as an economic usage sensitive signal to customers that conservation clearly equates to dollar savings. |

40. Establishment of a uniform lifeline commodity rate, and eliminating various rates based on zones, will result in a more simplified and easily understood rate schedule, which can be expected to result in better customer understanding of how energy pricing and their usage habits equate to dollars. ✓

41. Domestic air conditioning load demand contributes significantly to Edison's peak-load demand. ✓

42. A lifeline air conditioning quantity available to all domestic customers in qualifying climatic zones will result in a minimum of administrative problems and expenses for Edison. The small number of customers who do not have air conditioning will have an economic incentive not to acquire a unit, and thus not contribute to Edison's peak-load requirement. ✓

43. A significant increase in the nonlifeline commodity rate is justified because of increased power production costs and as a means of giving customers who exceed their lifeline quantities an economic signal that reduction of use to the lifeline quantity will result in more substantial savings. ✓

44. An increase in demand charges for large power customers will provide an incentive to reduce maximum demand and achieve a higher load factor. The result will be a reduction in peak-load demand. ✓

45. The \$5.05 per kW demand on-peak charge proposed by Edison for very large power customers will result in a substantial increase, but will provide a clear incentive to poor load factor customers to shift their load to off-peak periods. Marginal cost studies indicate an ever higher demand charge could be justified. ✓

46. Lowering charges for energy efficient high pressure sodium vapor street lamps and increasing charges for less efficient mercury vapor and incandescent lamps will encourage a shift to more energy efficient street lighting. ✓

47. Incandescent street lighting lamps should no longer be available from Edison because they are significantly less energy efficient than other available lamps. ✓

48. The rates authorized herein by Appendix A are just and reasonable. Any other rates applied after the rates in Appendix A are in effect are unjust and unreasonable to the extent that they differ from those in Appendix A. ✓

49. In order to secure Edison's earliest compliance with the following order it should be effective the date of signature. ✓

Conclusions

1. Edison's application should be granted to the extent of increasing base rates \$19.7 million annually over presently effective base rates (which were established by D.89175 on July 26, 1978, a partial general increase in this proceeding based on test year 1978). This increase is approximately \$124 million over the base rates authorized in Edison's last general rate proceeding (D.86794, dated December 31, 1976, A.54946).

2. Base rates should be established herein that exclude energy costs.

3. Edison should be authorized to file revised electric base rates effective no earlier than January 1, 1979 as set forth in Appendix A, which are designed to produce \$124 million in additional revenue (over the rates authorized by D.89175).

4. Edison should be authorized, since Article XIII-A of the California Constitution tax savings of \$42.9 million are reflected in the adopted results of operations for test year 1979, to discontinue its tax reduction billing factor when the rates authorized herein become effective.

5. Edison should be directed to undertake a management audit into areas subsequently approved by the Commission.

6. Edison should be directed to review its generating and power resource options and report its findings to the Commission, and thereafter proceed to implement all such cost-effective programs.

7. Edison should be directed to review and catalog all available auxiliary power sources and report its findings to the Commission.

8. Edison should be directed to continue vigorous imaginative programs to encourage and result in conservation.

9. Edison should be required to continue investigating, testing, and implementing Conservation Voltage Regulation.

10. Edison should be directed to develop necessary data to allow expansion of its Conservation Voltage Regulation Program whenever and wherever it is cost effective to do so.

11. Edison should be directed to establish a Voltage Surveillance Program to monitor its feeder circuit voltages established under the Conservation Voltage Regulation Program.

12. Edison should be directed to revise its Rule 14.1 to curtail the use of swimming pool filter pumps during its recognized summer daily peak periods.

13. Edison should be directed to revise the format of its customers' bills within 180 days from the effective date of the following order to enable consumers to better and more easily understand the operation and economic effect of the adopted conservation oriented rate design. Edison should coordinate closely with the Commission staff in this endeavor. The revised billing format should be approved by the Commission. ✓

14. Edison should be directed to file a letter of intent with the Commission of planned reclassifications or sales of land, improvements, intangibles, or mineral rights with book or appraised values in excess of \$100,000 indicating the proposed accounting treatment (see page 29 herein). ✓

15. Edison should be directed to implement the accounting changes discussed and adopted on page 107 herein. ✓

O R D E R

IT IS ORDERED that:

1. Southern California Edison Company (Edison) is authorized to file with this Commission revised schedules for electric service as set forth in Appendix A hereto on or after the effective date of this order. The revised tariff schedules shall become effective five days after filing but shall in no event be effective earlier than January 1, 1979. Edison's revised schedules shall be in compliance with requirements of General Order No. 96-A.

2. Edison may, when the revised rates reflected in Appendix A become effective, discontinue the current tax reduction billing factor.

3. Edison shall undertake a management audit conducted by independent consultants. Before consulting contracts are awarded and the audit is begun, the Executive Director shall submit to the Commission, for its approval, the specific areas of inquiry the management audit will cover.

4. Edison shall review all its options for repowering existing generating facilities (including hydroelectric plants) and for expanded facility modification and maintenance efforts that can improve efficiency and reliability. Edison shall also assess the cost-effectiveness of these options. Edison shall report to the Commission on its findings within two hundred forty days from the date of this order, and file a progress report after one hundred twenty days. Edison shall further proceed to implement all cost-effective programs as soon as possible after completing this review and shall incorporate all cost-effective repowering options into its resource plan or justify to this Commission its decision for not doing so.

5. Edison shall prepare and report to the Commission within two hundred forty days its future electricity supply and investment plans for a period of a minimum of 20 years, which also estimates the corresponding marginal costs for demand and energy.

6. Edison shall review and catalog all existing auxiliary power sources in its service area and all potential future auxiliary power and cogeneration projects and their availability to contribute power during its high demand periods. This review shall include an assessment of the economics, institutional arrangements, maintenance and fuel requirements, and possible cost-effective incentives necessary to enable it to call upon such auxiliary facilities as peaking capacity for its system. Edison shall report to the Commission on its findings within two hundred forty days from the date of this order with a progress report after one hundred twenty days.

7. All filings made by Edison in compliance with above Ordering Paragraphs 4, 5, and 6 shall be available for public inspection.

8. Edison shall continue programs designed to produce conservation, increase efforts to developing conservation oriented rates based on marginal costs, and apply vigor and imagination to developing new, innovative, and cost-effective conservation programs. ✓

9. Edison shall within one hundred eighty days from the date of this order submit for Commission approval revised customer billing formats that are designed to enable customer understanding of the conservation oriented rate design and the economic effect of energy conservation. Edison should work closely with the staff in preparing various proposed bill formats.

10. Edison shall within thirty days after the effective date of this order revise its tariff schedule titled, "Rule No. 2, Description of Service" to include the customer service voltages and customer utilization voltages set forth in Appendix B.

11. Edison shall continue to expand its implementation of conservation voltage regulation and file progress reports as scheduled and set forth in Appendix C.

12. Edison is hereby directed, in cooperation with the Energy Conservation Branch, to implement during the next 12 months a Voltage Surveillance Program to assure that those feeder circuits which have been adjusted to the new service voltage range under the Conservation Voltage Regulation Program remain within the voltage range prescribed herein.

13. Edison shall file within thirty days after the effective date of this order an amendment to its Rule No. 14.1 titled, "Prohibitions and Curtailment Provisions" to include the provisions set forth in Appendix D.

14. Edison shall file a letter of intent with the Commission's Finance and Operations Divisions as described in Conclusion 14 herein.

15. Edison shall adjust and hereafter maintain its books of account to reflect the accounting changes adopted herein (page 107).

16. All pending motions not heretofore ruled on are hereby denied. ✓

The effective date of this order is the date hereof.

Dated at San Francisco, California, this 12th day of DECEMBER, 1978.

Robert Bateman
President

Vernon L. Sturgeon
Charles D. Cook
Walter T. DeLid
Commissioners

*I will file a dissent -
William Synors Jr*

APPENDIX A
Page 1 of 10

RATES

Energy Cost Adjustment Billing Factor (ECABF)

Included in the present base rates is 0.732¢/kWh energy cost, which we will transfer to the Energy Cost Adjustment Clause (ECAC) so that all the fuel cost and purchased power will be computed under the ECAC. This was stated in Case No. 9886, Decision No. 85731 dated April 27, 1976. This will reduce all base rate energy charges by 0.739¢/kWh and increase all ECABF by 0.739¢/kWh. The 1% increase in the amount transferred to the ECABF is the allowance for uncollectibles and franchise tax.

The present and adopted ECABF are shown in the following table:

Energy Cost Adjustment Billing Factor ¢/kWh					
Effective Date	Applicable to Domestic Service (Schedules Nos. D-1, DE, DM, and DMS)		Applicable to Fuel Collection Balance Adjustment Factor ¢/kWh		
	Applicable to Lifeline Service or the First 300 kWh/Month, Whichever is Greater	Applicable to Service in Excess of Lifeline Amounts or 300 kWh/Month, Whichever is Greater	to Other Than Domestic Service	to	
7/26/78	0.857	1.589	1.461		None
1/1/79	1.596	2.328	2.200		None

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RATES

Schedule No. A-1

TERRITORY

Within the entire territory served, excluding Santa Catalina Island.

RATES

	<u>Per Meter</u> <u>Per Month</u>
Customer Charge:	
Single phase.....	\$4.500
Three phase.....	4.500
Energy Charge (to be added to Customer Charge):	
All kWh, per kWh.....	3.68¢

Schedule No. A-2

Demand Charge:	
First 20 kW or less of billing demand.....	\$76.000
All excess billing demand, per kW.....	3.800
Customer and Energy Charges (to be added to Demand Charge)	
First 150 kWh per kW of billing demand, per kWh	0.94¢
Next 150 kWh per kW of billing demand, per kWh	0.74¢
Over 300 kWh per kW of billing demand, per kWh.....	0.54¢

Schedule No. A-7

	<u>Per Meter</u> <u>Per Month</u>
Demand Charge:	
First 200 kW or less of billing demand.....	\$860.00
All excess kW of billing demand, per kW.....	4.30.
Energy Charge (to be added to Demand Charge):	
First 150 kWh per kW of billing demand, per kWh	0.73¢
Next 150 kWh per kW of billing demand, per kWh.....	0.53¢
All excess kWh, per kWh.....	0.33¢

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RATES

Schedule No. D-1

TERRITORY

Within the entire territory served, excluding Santa Catalina Island.

RATES

	<u>Per Meter Per Month</u>	
	<u>Lifeline Service</u>	<u>Non-Lifeline Service</u>
Customer Charge:	\$2.00	\$4.50
Energy Charge (to be added to Customer Charge):		

<u>Lifeline Allowances - Rates Per Meter Per Month</u>						
					Water	Water
					Heating	Heating
					Plus	Plus
				Air	Plus	Air
	Basic	Water	Space	Condi-	Space	Condi-
Billing Blocks	Only	Heating	Heating	tioning	Heating	tioning

Lifeline

First 240 kWh, per kWh	4.019¢	4.019¢	4.019¢	4.019¢	4.019¢	4.019¢
Next 60 kWh, per kWh	4.019¢	3.189¢	3.189¢	4.019¢	3.189¢	3.189¢
Next 190 kWh, per kWh	-	3.189¢	3.189¢	4.019¢	3.189¢	3.189¢
Excess kWh, per kWh	-	-	3.189¢	4.019¢	3.189¢	4.019¢

Nonlifeline

All kWh, per kWh	4.751¢	4.751¢	4.751¢	4.751¢	4.751¢	4.751¢
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Base Rates

- Lifeline Basic 2.423¢/kWh
- Lifeline Air Conditioning 2.423¢/kWh
- Lifeline Water Heating 1.593¢/kWh
- Lifeline Space Heating 1.593¢/kWh
- Nonlifeline 2.423¢/kWh

Energy Cost Adjustment Billing Factors

- Lifeline 1.596¢/kWh
- Nonlifeline 2.328¢/kWh

✓
✓
✓
✓

APPENDIX A
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RATES

Domestic Air Conditioning Lifeline Allowance

The allowances for all domestic customers in Zones V and H are 500 kWh per month and 280 kWh per month, respectively, for the months of May through October. The following districts within Edison's service area and charts describe Zones V and H.

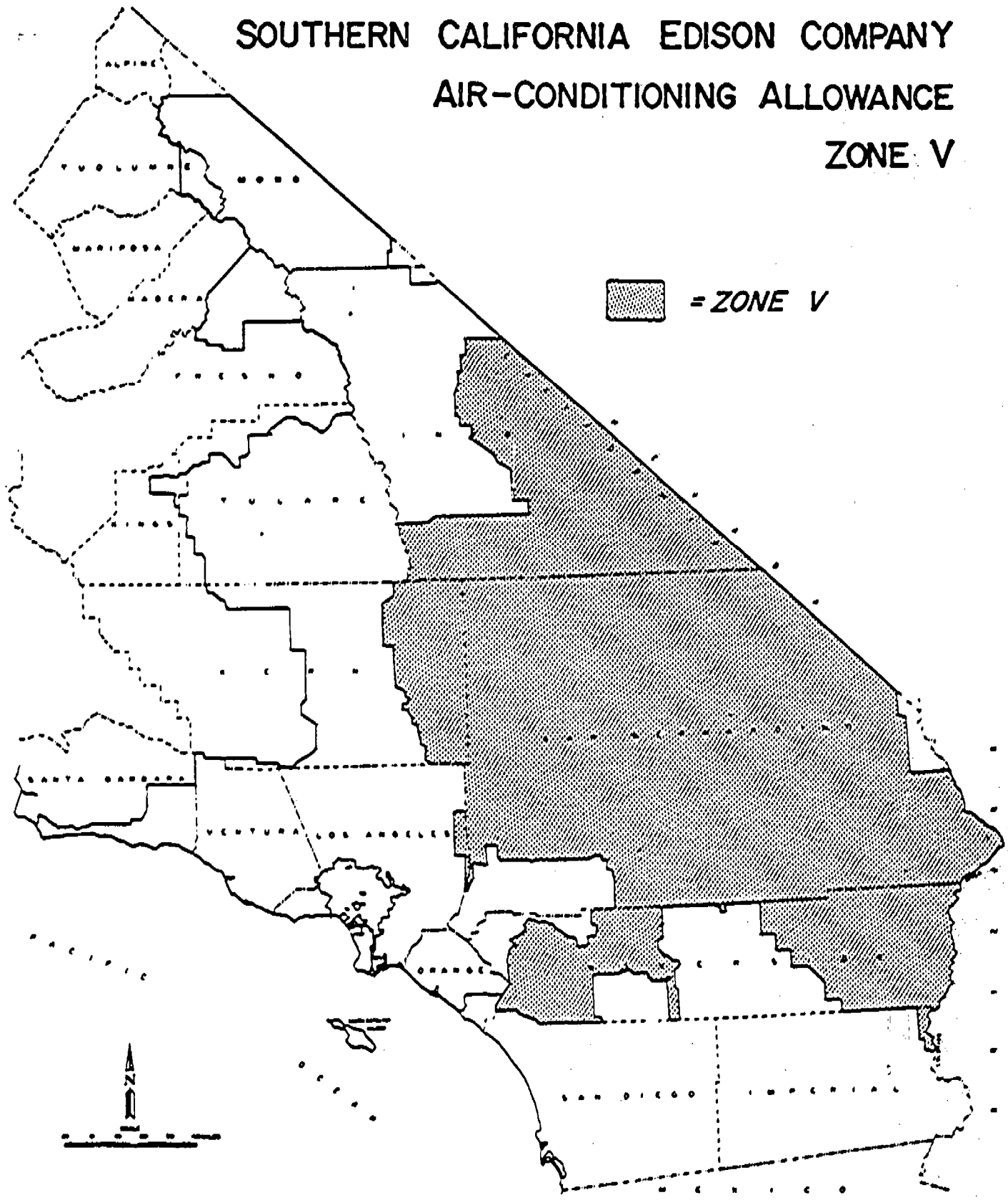
Districts of Zone V (Chart 1)

1. Barstow
2. Victorville
3. Perris
4. Hemet
5. Twenty-Nine Palms
6. Ridgecrest
7. Palm Springs
8. Blythe

Districts of Zone H (Chart 2)

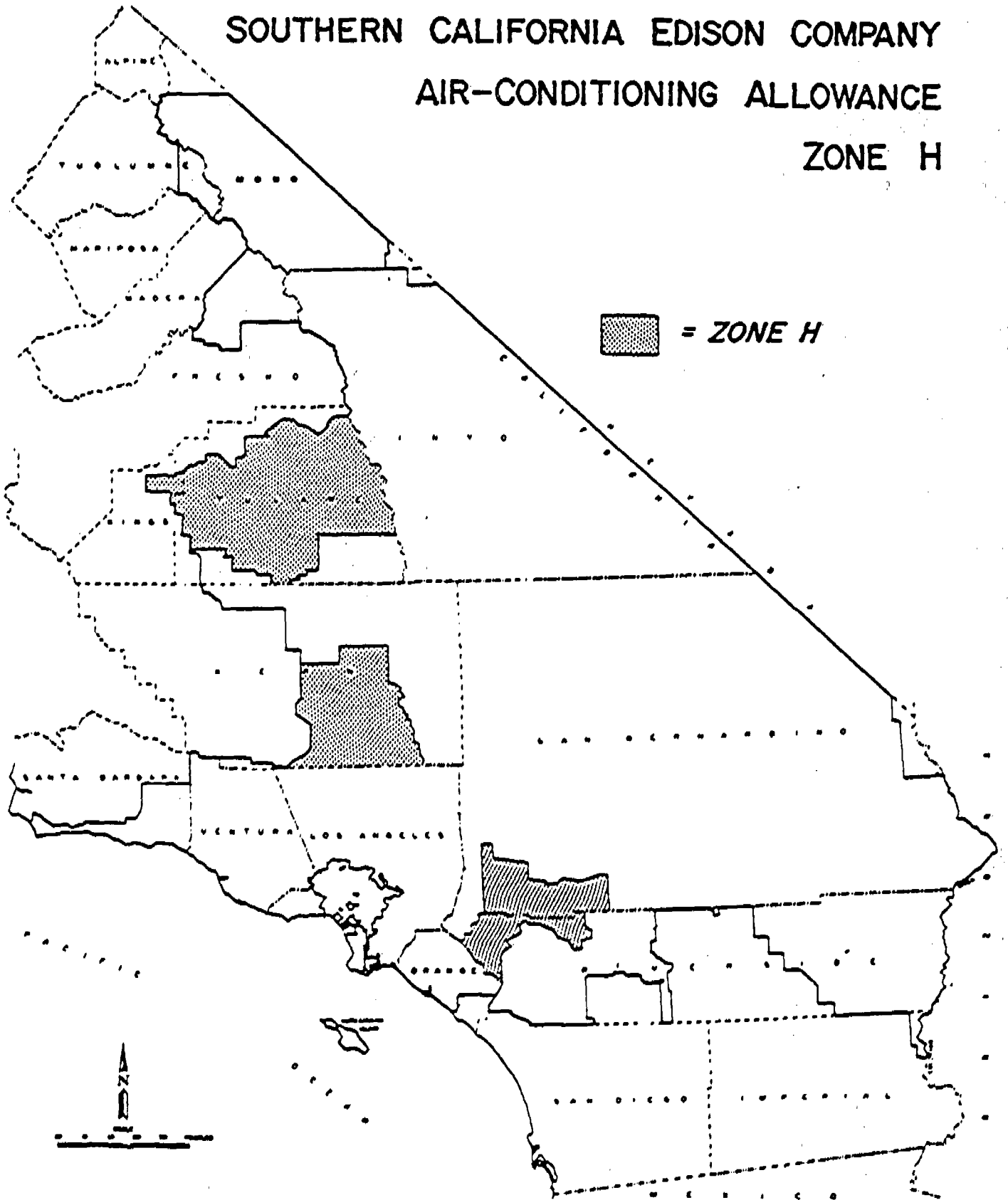
1. Lancaster
2. Visalia, southern part
3. Tulare
4. Porterville
5. Hanford
6. Redlands
7. San Bernardino

SOUTHERN CALIFORNIA EDISON COMPANY
AIR-CONDITIONING ALLOWANCE
ZONE V



RATES

SOUTHERN CALIFORNIA EDISON COMPANY
AIR-CONDITIONING ALLOWANCE
ZONE H



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RATES

Schedule No. DWL

Lamp Charge	<u>Per Month</u>
75 watt mercury vapor lamp, per lamp.....	\$5.40

Schedule No. LS-1

<u>Lamp Size-Lumens</u>	All Night Service Per Lamp Per Month	<u>Energy Curtailment Service</u>	
		<u>Midnight or Equivalent Service Per Lamp Per Month</u>	<u>Facilities Charge Per Lamp Per Month</u>
Incandescent Lamps*			
1,000 Lumens.....	\$ 3.15	\$2.70	\$1.90
2,500 Lumens.....	4.50	3.65	2.50
4,000 Lumens.....	5.35	4.00	2.35
6,000 Lumens.....	6.40	4.60	2.50
10,000 Lumens.....	8.45	5.75	2.75
Mercury Vapor Lamps			
3,500 Lumens.....	\$ 4.85	\$4.70	\$4.20
7,000 Lumens.....	5.45	5.00	4.20
11,000 Lumens.....	6.30	5.70	4.70
20,000 Lumens.....	7.45	6.40	4.95
35,000 Lumens.....	10.65	8.20	5.25
55,000 Lumens.....	12.90	9.30	5.30
High Pressure Sodium Vapor Lamps			
5,800 Lumens.....	\$ 5.40	\$5.25	\$4.40
9,500 Lumens.....	6.00	5.60	4.50
16,000 Lumens.....	6.80	6.20	4.90
22,000 Lumens.....	7.40	6.65	5.20
29,500 Lumens.....	8.20	7.10	5.25
47,000 Lumens.....	9.45	7.85	5.50

* Closed to new installations except where Utility and customer shall agree, incandescent lamps may be installed to provide compatibility with existing light sources.

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RATES

Schedule No. LS-2

RATE A-UNMEASURED SERVICE:	Per Month			
	<u>All Night Service</u>		<u>Midnight Service</u>	
	<u>Multiple</u>	<u>Series</u>	<u>Multiple</u>	<u>Series</u>
For each kW of lamp load, per kW.....	\$8.40	\$9.95	\$6.60	\$7.30 ✓

RATE B-MEASURED SERVICE:	Per Meter
Meter Charge:	<u>Per Month</u>
Multiple Service.....	\$ 3.00
Series Service.....	10.50
Energy Charge (to be added to Meter Charge):	
ALL kWh, per kWh.....	2.46c ✓

RATE C-MAINTENANCE SERVICE-OPTIONAL:

In addition to the Rate A and Rate B charges

<u>Lamp Rating</u>	<u>Lamp Type</u>	<u>Per Lamp</u>
<u>Lumens</u>		<u>Per Month</u>
1,000	Incandescent Extended Service.....	\$0.31
2,500	Incandescent Extended Service.....	.35
4,000	Incandescent Extended Service.....	.37
6,000	Incandescent Extended Service.....	.39
10,000	Incandescent Extended Service.....	.42
3,500	Mercury Vapor.....	.33
7,000	Mercury Vapor.....	.31
11,000	Mercury Vapor.....	.37
20,000	Mercury Vapor.....	.33
35,000	Mercury Vapor.....	.50
55,000	Mercury Vapor.....	.45
5,800	High Pressure Sodium Vapor.....	.74
9,500	High Pressure Sodium Vapor.....	.74
16,000	High Pressure Sodium Vapor.....	.72
22,000	High Pressure Sodium Vapor.....	.73
25,500	High Pressure Sodium Vapor.....	.73
47,000	High Pressure Sodium Vapor.....	.75

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RATES

Schedule No. OL-1

Luminaire Charge:

<u>Mercury Vapor Lamp Size</u>	<u>All Night Service Per Lamp Per Month</u>	<u>Energy Curtailment Service</u>	
		<u>Midnight or Equivalent Service Per Lamp Per Month</u>	<u>Facilities Charge Per Lamp Per Month</u>
7,000 Lumen.....	\$5.35	\$4.90	\$4.15
20,000 Lumen.....	8.85	7.60	6.00

Schedule No. P-1

<u>Horsepower of Connected Load</u>	<u>Monthly Service Charge Per Hp</u>	<u>Energy Charge to be Added to Service Charge Rate per kWh for Monthly Consumption of:</u>		
		<u>First 100 kWh per Hp</u>	<u>Next 100 kWh per Hp</u>	<u>All Over 200 kWh per Hp</u>
2 and Over.....	\$2.50	2.43¢	1.53¢	0.93¢ ✓

Schedule No. PA-1

<u>Horsepower of Connected Load Per Meter</u>	<u>Annual Service Charge Per Meter Per Hp</u>	<u>Energy Charge to Be Added to Service Charge Rate per kWh for Annual Consumption Per Meter of:</u>		
		<u>First 1,000 kWh per Hp</u>	<u>Next 1,000 kWh per Hp</u>	<u>All Over 2,000 kWh per Hp</u>
2 and Over.....	\$11.95	1.80¢	1.17¢	0.87¢ ✓

Schedule No. PA-2

	<u>Per Meter Per Month</u>
Demand Charge:	
First 75 kW or less of billing demand.....	\$281.25
All excess kW of billing demand, per kW.....	3.75
Energy Charge (to be added to Demand Charge):	
First 150 kWh per kW of billing demand, per kWh.....	0.76¢
Next 150 kWh per kW of billing demand, per kWh.....	0.56¢
All excess kWh, per kWh.....	0.36¢

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RATES

Schedule No. TC-1

	<u>Per Meter</u> <u>Per Month</u>
Customer Charge	\$4.00
Energy Charge (To be added to Customer Charge):	
All kWh, per kWh	2.00¢

Schedule No. TOU-8

Customer Charge	\$1,075.00
Demand Charge (To be added to Customer Charge):	
All kW of on-peak billing demand, per kW	5.05
Plus all kW of mid-peak billing demand, per kW	0.65
Plus all kW of off-peak billing demand, per kW	No Charge
Energy Charge (To be added to Demand Charge):	
All on-peak kW, per kWh	0.53¢
Plus all mid-peak kWh, per kWh	0.38¢
Plus all off-peak kWh, per kWh	0.23¢

Minimum Charge:

The monthly minimum charge shall be the sum of the monthly Customer and Demand Charges. The monthly Demand Charge shall not be not less than the charge for 25% of the maximum on-peak demand established during the preceding 11 months.

Schedule No. TOU-8-I

For each kW of maximum on-peak demand in excess of Firm Service:	<u>Reduction</u> <u>Per kW</u> <u>Per Month</u>
Rate A, Company Controlled	\$3.00
Rate B, Customer Controlled	2.50
Rate C, Company Controlled	3.00
Rate C, Customer Controlled	2.50

APPENDIX B
Page 1 of 2

Rule No. 2, (Description of Service

() Customer Service Voltages:

Under all normal load conditions, distribution circuits will be operated so as to maintain secondary service voltage levels to customers within the voltage ranges specified below:

<u>Nominal Two-Wire And Multi-Wire Service Voltage</u>	<u>Minimum Voltage To All Services</u>	<u>Maximum Service Voltage On Residential And Commercial Distribution Circuits</u>	<u>Maximum Service Voltage On Agricultural And Industrial Distribution Circuits</u>
120	114	120	126
208	197	208	218
240	228	240	252
277	263	277	291
480	456	480	504

() Exceptions to Voltage Limits. Voltage may be outside the limits specified when the variations:

- (a) Arise from the temporary action of the elements.
- (b) Are infrequent momentary fluctuations of a short duration.
- (c) Arise from service interruptions.
- (d) Arise from temporary separation of parts of the system from the main system.
- (e) Are from causes beyond the control of the utility.

() Customer Utilization Voltages:

- (1) All customer-owned utilization equipment must be designed and rated in accordance with the following utilization voltages specified by the American National Standard C84.1 if customer equipment is to give fully satisfactory performance:

<u>Nominal Utilization Voltage</u>	<u>Minimum Utilization Voltage</u>	<u>Maximum Utilization Voltage</u>
120	110	125
208	191	216
240	220	250
277	254	289
480	440	500

APPENDIX B
Page 2 of 2

Rule No. 2, Description of Service

- (2) The differences between service and utilization voltages are allowances for voltage drop in customer wiring. The maximum allowance is 4 volts (120 volt base) for secondary service.
- (3) Minimum utilization voltages from American National Standard C84.1 are shown for customer information only as the Company has no control over voltage drop in customer's wiring.
- (4) The minimum utilization voltages shown in (1) above, apply for circuits supplying lighting loads. The minimum secondary utilization voltages specified by American National Standard C84.1 for circuits not supplying lighting loads are 90 percent of nominal voltages (108 volts on 120 volt base) for normal service.
- (5) Motors used on 208 volt systems should be rated 200 volts or (for small single phase motors) 115 volts. Motors rated 230 volts will not perform satisfactorily on these systems and should not be used. Motors rated 220 volts are no longer standard, but many of them were installed on existing 208 volt systems on the assumption that the utilization voltage would not be less than 187 volts (90 percent of 208 volts).

APPENDIX C

Conservation Voltage Regulation Implementation
and Reporting Requirements

1. Edison shall actively continue its investigation and testing of distribution circuits, loads, motors, and appliances to maximize the saving of energy through control of voltage regulation. Priority shall be given to the analysis of agricultural and industrial services. Edison shall file in writing, progress reports on or before June 30 and December 31 of each year, setting forth detailed engineering data of individual investigations and tests.

2. Edison shall systematically and periodically review the service voltages of all of its distribution circuits to ensure that all service voltages are as close to the minimum voltages, specified in Appendix B, as is cost-effective and will maximize energy savings. Records shall be maintained of all distribution circuit voltage regulator control settings including bandwidth, voltage level, and line-drop compensator.

3. Edison shall review the design and operation of all of its distribution circuits and determine for each circuit the cost effectiveness of maximizing conservation of energy by optimizing service voltages. On or before March 31, 1979, Edison shall report in writing the results of this review including the regulator operating voltage levels for each circuit at the beginning and end of the circuit and the proposed circuit changes to maximize conservation of energy by optimizing service voltage for those circuits found to be cost-effective.

4. Edison shall, within one hundred twenty days after the effective date of this order, and annually thereafter, request authorization to continue to operate any residential and commercial distribution circuits that do not conform to the minimum and maximum secondary service voltage levels prescribed herein. The request for authorization shall list each circuit for which a deviation is requested, the factors which impede compliance, the status of the design and operation review, and any proposed circuit changes.

APPENDIX D

Rule No. 14.1 "Prohibitions and Curtailment Provisions"

"() Timers associated with swimming pool pumps and filtration equipment shall not be set to operate such equipment during the peak usage periods of the day from 12:00 noon to 6:00 PM".

"(a) Notwithstanding the provisions set forth above, a circulating pump not exceeding three-quarters horsepower in size may be used to circulate solar heated water from solar collector panels to any pool or to return pool water to solar collector panels."

"(b) Notwithstanding the provisions set forth above, pumps that activate hydro-massage and therapeutic or other equipment designed for the comfort of bathers may be set to operate by means of manual switches during any period when the pool is occupied".

SoCal Edison Company - General Rate Increase - Final Rate Design Order

COMMISSIONER WILLIAM SYMONS, JR., Dissenting

How can the majority ignore the mountain of evidence and expert opinion as to the Commission's unfair and destructive rate structure. By spun-out talk of "lifeline", "conservation" and "marginal pricing", that's how. These concepts elude hard analysis -- it's like sinking your teeth into cotton candy. Yet under this rubric, the Commission's energy pricing policies each day grow wackier.

1. Now It Is Lifeline for Air Conditioning. Edison customers face a devious subsidy problem caused by "lifeline" -- Exhibit 62 indicates it would require an excess of \$48,000,000 annually to make lifeline revenues sufficient to provide even a zero rate of return before income tax.

Today's decision aggravates that situation deplorably. Rather than adopt the utility's modest proposal for 50 Kwh and 100 Kwh allowances, the Commission increases lifeline quantities an additional 350 Kwh and 500 Kwh per month. Next, the Commission gives this quantity of less-than-cost electricity to every resident in the affected zones whether they have an air conditioner or not. These two unsound decisions triple the expense of what was a dubious program to start. The adopted rule will mean additional changes to customers who pay for the subsidy, in the range of \$20 to \$28 million a year.

Rather than compound error, this major rate case should have been a time to return to a little equity between customer classes. It is fundamental that each class of customer should bear its share of the actual expenses for

the service it is being provided, including return incurred by the utility. Yet, even at present rates, so much energy is sold at loss-producing lifeline rates, that the pre-tax rate of return on the total domestic class is only 0.43%. Small power customers on the other hand are forced to pay 16.20%.

Edison's proposed rate increases would have modestly begun the process of restoring some balance among customers. But this is not how today's decision ends up. Where as the Edison proposal caused for 43% of the increase to come from the domestic class and 38% from the large and very large power class, the adopted revenue increase comes 14% from the domestic class and 68% from the large and very large power customers.

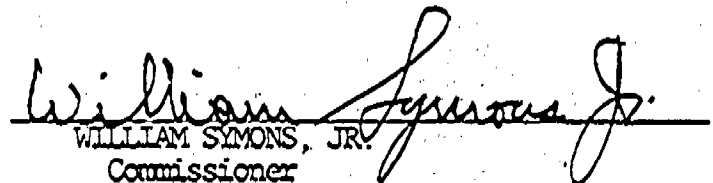
The majority's order does not clearly identify the steps it took to arrive at this result, but the expansion of another dimension of lifeline's subsidy contributed. Today the Commission abolishes cost-related zone schedules, where domestic customer charges had ranged from \$2.00 up to \$3.00, the lower \$2.00 will apply in all territories. Where the lifeline base rate had ranged from 3.162¢ to 3.562¢, base rates are lowered everywhere to 3.162¢. The net result of all these changes in lifeline, is to reduce the average rate for lifeline 7%. (From the present 4.96¢/Kwh to 4.59¢/Kwh. See today's decision, p. 179).

In the face of skyrocketing energy costs and the conservation, this is ridiculous.

'Marginal Cost' rhetoric is used to justify this inequitable behavior. rather than a lamp shedding light, it is apparent to me that 'Marginal Cost Analysis' serves as a smudge pot, providing cover for inexcusable discrimination. For an excellent discussion of the infirmities inherent in trying to apply marginal cost pricing theories to regulation, see the Joint Statement of Jefferson, Behrends, and Gallavan, page 141 - 151 in 'Rate Design and Load Control: Issues and Directions', A Report to the National Association of Regulatory Utility Commissioners, November 1977.

2. The CPUC Cannot Arbitrarily Limit a Utility's Legal Right to Seek a Necessary Rate Increase. Finding No. 21 seeks to condition the granted 13.49 rate of return only if the Edison does not seek rate relief until 1981. We cannot foresee all the possible developments between now and 1981. Under the law, we should be open to receive applications if conditions are such that the utility's invested property is earning a grossly inadequate return. The Commission is without legal basis for this Procrustean rule. Further, it will likely be honored only in the breach with a flurry of offsets and balancing mechanisms. The rule only serves cosmetic purposes and ought not to be promulgated.

December 12, 1978
San Francisco, California


WILLIAM SIMONS, JR.
Commissioner