ALJ/BDP/tcg

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SEP 14 1990

Decision 90-09-042 September 12, 1990

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SIERRA PACIFIC POWER COMPANY for Authority to Implement its Electric Revenue Requirement Adjustment Mechanism (ERAM)	Application 89-08-044 (Filed August 29, 1989)
In the Matter of the Application of SIERRA PACIFIC POWER COMPANY for Authority to Implement its Energy Cost Adjustment Clause (ECAC)	Application 89-08-046 (Filed August 29, 1989)

James D. Salo, Attorney at Law, for Sierra Pacific Power Company, applicant.
Catherine A. Johnson, Attorney at Law, for the Division of Ratepayer Advocates.

O P I N I O N

Summary

Sierra Pacific Power Company (Sierra) is authorized a net revenue decrease of $1,603,000 annually, or 11.5%, based on an Energy Cost Adjustment (ECAC) decrease of $165,000, an Annual Energy Rate (AER) increase of $121,000, and an Electric Revenue Adjustment Mechanism (ERAM) decrease of $1,559,000.

Sierra's fuel and purchased power transactions and related operations for the review period of July 1, 1988 through June 30, 1989 are found to be reasonable, except that the heat rate deviation reports are subject to further review.

This order approves the stipulation reached between Sierra and the Division of Ratepayer Advocates (DRA) on all forecast issues. The only contested matter relates to the Thermal Performance Standard (TPS) for Sierra's gas and oil fired power

plants. Sierra is directed to submit reports addressing this issue.

Background

On August 29, 1989, Sierra filed Application (A.) 89-08-044 requesting authority to increase its Energy Cost Adjustment Clause Billing Factor (ECACBF) and Annual Energy Rate (AER) by $2,000 and $150,000, respectively, to offset estimated under-recovery of revenue for the twelve months commencing April 1, 1990.

Also, on August 29, 1989, Sierra filed A.89-08-046 requesting authority to reduce its ERAM revenue requirement by $414,000 for the twelve months commencing April 1, 1990.

Both applications were consolidated for hearing and decision. Public hearings were held in San Francisco on February 6, 8, and 9, 1990. Concurrent opening briefs were filed on April 13, 1990. Concurrent reply briefs were filed on April 27, 1990.

The Stipulation

Sierra and DRA held extensive discussions during the week of February 6, 1990. Representatives of the two parties exchanged updated information and reviewed analytical approaches. As a result of this exchange, the majority of the issues in the case were resolved. Sierra and DRA representatives explained on the witness stand the basis for the changes in their positions. The comparison exhibit (Ex. 23) reflects the final results of the agreements which were explained on the record and are summarized below.

Following is a list of the main items covered by the stipulation:

- Sierra accepts DRA's audit recommendations, with the clarification that Sierra's tariff language for fuel inventory carrying costs should mirror that of Southern California Edison Company.

- Sierra accepts DRA's sales forecast although it does not agree with the DRA method.

- Sierra agreed to model its gas turbines as "quick start" in the final PROMOD runs.

- There are no disputed issues which affect revenue requirement, which is shown on late filed Exhibit 23.

- Sierra accepts DRA's forecast of hydroelectric generation as set forth in Chapter 5 of Exhibit 9.

- Sierra agrees with DRA's power forecast modified to reflect a forecast price of $22.85 per MWh for economy energy, including economy energy provided by Idaho Power Company.

- DRA agrees with the Qualifying Facility (QF) forecast in Exhibit 23. Sierra agrees to develop a QF identification system and to use it in all future filings.

- Sierra accepted DRA's revised fuel prices, although there was no agreement on method.

- DRA agreed to a 12-day supply for residual oil inventory, and a 60-day coal inventory. Sierra accepted DRA's recommendation of 4,377 barrels for diesel fuel inventory. Sierra agreed to examine the effect on inventory of using different means of transporting coal.

- DRA and Sierra reached agreement on how to proceed in developing a thermal performance standard for its coal fired power plants.

- DRA had recommended a disallowance because the Washoe hydroelectric plant remains out of service after several years. After the conclusion of these ECAC hearings, Sierra and DRA entered a stipulation in Sierra's General Rate Case (A.89-08-027). In that stipulation, Sierra agreed to exclude Washoe related rate base and associated depreciation expenses from its cost of service. DRA believes that the stipulation

protects both ratepayer and Sierra interests and, consequently, withdrew its recommended disallowance in this proceeding.

- In response to DRA's concerns about the magnitude of energy losses related to purchased power, Sierra submitted Exhibit 13 detailing an in-house loss reduction program. Sierra agreed to send DRA monthly and semi-annual summary reports on its progress.

- Sierra will study strategy options for coal purchase and will develop documentation to facilitate a DRA prudence review in a subsequent proceeding.

Both Sierra and DRA actively negotiated the stipulations described above. We have reviewed the agreements reached, and absent any evidence to the contrary, we are satisfied that the agreements are reasonable and should be adopted.

Appendix A to this decision reflects the above stipulations and sets forth the operating data, fuel and purchased power costs, revenue requirement, ECAC rate, AER rate, and the Balancing Rate adopted in this proceeding.

The Issues

The Commission established a Thermal Performance Standard (TPS) for Sierra's large gas and oil power plants in Decision (D.) 88-04-016 in Sierra's A.87-09-028. In the current reasonableness review, DRA has found Sierra's TPS compliance to be unsatisfactory, due to its reliance upon heat rate measurement instrumentation with limitations that preclude accurately recording heat rates. DRA requests the Commission to order Sierra to hire a consultant to address these reporting problems as detailed in DRA's Exhibit 17.

DRA contends that it is unreasonable for Sierra's TPS data to consistently show a negative deviation as Sierra does. Very simply, the data indicates that to produce a kWh of electricity, Sierra requires less fuel than is theoretically

required. Therefore, DRA is not confident of Sierra's efforts to minimize its fuel costs.

Position of Sierra

Sierra strongly disagrees that its heat rate deviation reports are inaccurate. Anthony W. Warburton, Supervisor of Results Engineering testified as follows:

> ". . . We have over the past several years developed a highly accurate test instrument setup which is mobile that we take to our different power plants for our heat rate testing."
>
> * * *
>
> "Our test engineering group added instrumentation, high accuracy instrumentation to the power plants, collects massive amounts of data, analyzes that data and generates a heat rate curve which is deemed as representative of unit operation.
>
> "That curve then is used as the basis for comparison of the actual reported monthly heat rates."
>
> * * *
>
> "The test curve which is created has associated with it, based on the uncertainty of the instruments we use for testing, a band width of its own.
>
> "For example, I believe the uncertainty at this point in time for our oil/gas units test curves is approximately three percent.
>
> "If the unit operation for a particular month has been very stable and the operators have been doing their job properly, which is generally the case, there is a reasonable probability that the actual recorded heat rate which we present in our monthly financial reports could be inside the band width of the theoretical heat rate curve, that is, up to 3 percent above or 3 percent below, and the actual reported heat rate, the one that is calculated for our financial reports has an

uncertainty of its own and it could be in approximately a plus or minus 3 percent range.

"So there are very real possibilities that in the long term you will see roughly half of our heat rate deviations fall below the curve and roughly above the curve if the curve really represents the way the unit itself operated."

Sierra argues that negative deviations in measured data are a normal, predictable result--not at all illogical as contended by DRA. Theoretical heat rate curves are developed from actual operations. Heat rate curves and instrumentation have inherent band widths of accuracy, so any measurement of actual heat rate and comparison of such measurement to the heat rate curve of necessity must recognize a margin of deviation, both positive and negative. According to Sierra, measured heat rate deviations are expected to fall roughly half above and half below the curve if it really represents unit operations.

Regarding the need for more accurate instruments to measure power plant performance, it is Sierra's opinion that the present plant instruments are totally adequate for the applications for which they were designed and are being used. According to Sierra, the instruments and control systems are typical of those found in gas/oil units of this vintage throughout the industry. In addition, as instruments become obsolete they are replaced with more modern devices, as is typical in the industry. Sierra contends that changes to plant instrumentation would not result in elimination of negative deviations, nor would they have any impact on the amount of fuel burned. Instrument changes may result in smaller variations centered about zero, both positive and negative, than are currently reported.

Sierra states that it is proceeding in a slightly different direction on new instrumentation. Sierra is installing on-line heat rate monitors in its plants, to give the operators "real time" feedback of relative heat rates in order to allow them

to fine tune unit operation in order to save fuel when possible. This program began in January 1989 with purchase of equipment for Fort Churchill Unit 2. The project will be expanded to North Valmy Station in 1990. Due to the software development cost and addition of computer-accessible instruments, the cost for this effort was approximately $60,000 for the first unit. The cost for each unit at Valmy is estimated to be $20,000. This effort will result in savings, through avoided fuel expenses. Sierra believes that these expenditures, which should result in real savings, are higher priority than new instruments whose primary purpose is after the fact analysis, not fuel savings.

Position of DRA

DRA states that the Adjusted Theoretical Heat Rate (ATHR) is obtained under as perfect as possible test conditions, usually after a plant overhaul. At that point, the plant has been brought to its most efficient condition. The heat rate then represents ideal conditions which generally cannot be achieved under normal operating circumstances. The Adjusted Actual Heat Rate (AHR) which is the recorded heat rate, is generally higher than the THR, which means more heat is required to produce a kWh under normal (recorded) conditions than under test conditions, because of plant degradation over time and less than optimum operation of the plant.

DRA further states that because the AHR is generally larger than the THR, the deviation is usually a positive quantity or, a positive deviation percent. DRA agrees that a few cases exist where negative deviations may be expected. One such case occurs when a plant is overhauled and its heat rate is significantly improved but not reflected in the THR reference database. In such a case, one may observe that the AHR after overhaul is lower than the THR because the latter is based on old data. However, if the new improved THR is used, however, the deviation will continue to be positive.

DRA's concern is that Sierra has been reporting and is now defending the routine reporting of negative deviations. DRA finds it unacceptable that Sierra defends its position even when the negative deviations constitute the majority of the data reported to the Commission during the record period. Because it is essentially illogical for negative deviations to exist over the lengthy time periods involved in Sierra's reports, DRA contends that it is not possible for utility management or DRA to assess Sierra's gas/oil plant performance.

DRA points out that under current Commission procedures, if the annual deviation system-wide exceeds 3 percent, then it may question the utility's performance. However, because so much of the data Sierra submitted in its application in support of the reasonableness of utility operation shows negative deviations, DRA contends it has little or no value.

In summary, DRA states that it cannot evaluate Sierra's performance when it routinely reports that its AHR is far superior to the best achievable heat rate, the THR. Since the AHR should be lower than the THR, DRA believes Sierra is simply reporting inaccurate heat rates apparently due to inadequate instrumentation.

Discussion

During the course of this hearing, DRA made several references to the fact that PG&E, and presumably, the other California utilities, did not report negative heat rate deviations as did Sierra.

On the other hand, it does appear from the testimony that Sierra's witness is confident of his position, notwithstanding that PG&E does not report as many negative heat rate deviations.

After reviewing the record in this proceeding, we conclude that the evidence is not sufficient to decide the issue. A standardized TPS reporting procedure for all utilities would have helped. But there is good reason for each utility not following the same method.

The history of the TPS is briefly recounted for background. The Commission, after rehearing, adopted a TPS method for PG&E, based on the method used by PG&E (D.86-01-030 and D.90-05-029). For Southern California Edison Company (Edison) the Commission did examine the question of using the PG&E method. However, the Commission found the method used by Edison more suitable for Edison (D.88-07-021). Likewise, the Commission found the method used by SDG&E reasonable and adopted a TPS for SDG&E (D.89-04-059). The Commission has in effect recognized that each utility's heat rate monitoring program is based on individual accounting and reporting procedures. Furthermore, each utility's ability to measure heat rate performance is dependent on available fuel metering facilities, and the design and loading of each unit. Therefore, we believe that there is no need to alter each utility's procedures so that there is standardization, so long as existing procedures provide credible results.

But we are not satisfied with Sierra's explanation why roughly half of its reported heat rate deviation figures are negative. As pointed out by DRA, negative figures may be construed to mean that Sierra's power plants are operating 50% of the time more efficiently than they did when their test curves were prepared under ideal steady-state conditions. The other California energy utilities do report considerably fewer negative deviations than Sierra does. Obviously, there is something wrong or needs further explanation. Heat rates are too important a matter to be set aside to be dealt with later. Therefore, we agree with DRA that Sierra needs to immediately address the problem.

There are many possible explanations for Sierra's negative deviations. The more obvious ones are: the test curves used as the standard for performance measurement do not reflect subsequent plant improvements; the test curves have been incorrectly recalibrated to reflect actual conditions; the incoming gas supply is not being measured accurately, especially on low

load; the gas consumption figures used to develop the test curves were not correctly computed; or, Sierra is simply using a method that is different from the methods used by the other California utilities. There are numerous other possibilities; however, it is not this Commission's function to speculate on the reasons for Sierra's negative heat rate deviations. It is Sierra's responsibility to explain its results.

For the time being, we will not adopt DRA's recommendation that Sierra be ordered to hire a consultant to look into this matter. Rather, we prefer to give Sierra the opportunity to work with DRA, and to compare its method with the other California energy utilities to resolve this conflict. Accordingly, we direct Sierra to submit no later than December 1, 1990 a comprehensive report and a plan to address the concerns raised in this proceeding.

We remind Sierra that it has the burden of proof. Only reasonably incurred fuel costs are recoverable through ECAC (4 CPUC 2nd, p. 701, D.92496). If this matter is not resolved to the Commission's satisfaction, we will not hesitate to make an appropriate disallowance to Sierra's fuel expense in a subsequent ECAC proceeding.

In summary, we conclude that Sierra's showing in this proceeding was not sufficient to meet its burden of proof. If Sierra continues to report negative heat rate deviations, it should consider presenting in its next ECAC proceeding, a consultant to support its position. Sierra should be ready to explain why it has roughly half of its reported heat rate deviations negative and the other California utilities do not. If it is because Sierra uses a different method, it is Sierra's burden to explain it.

Section 311 Comments

On July 25, 1990 the Administrative Law Judge's (ALJ) proposed decision was mailed to all parties for comments. Comments were received from Sierra and DRA. We have reviewed the comments

and conclude that the ALJ's proposed decision should remain essentially unchanged.

Findings of Fact

1. As a result of extensive negotiations, Sierra and DRA reached a stipulation on all issues in this proceeding, except the negative heat rate deviations reported by Sierra.

2. The record in this proceeding does not contain sufficient evidence to decide the heat rate deviation issue.

3. In all other respects, DRA agrees that Sierra's purchased power transactions and related operations for the review period are reasonable.

4. Sierra and DRA agree that Appendix A to this decision accurately reflects the stipulation on all issues, the operating data, fuel and purchased power costs, revenue requirement, ECAC rate, AER rate, and the Balancing Rate that should be adopted in this proceeding.

Conclusions of Law

1. The Stipulation entered into between Sierra and DRA is in the ratepayer interest and should be adopted by the Commission.

2. Sierra has failed in its burden of proof to establish that its method of measuring heat rate deviation is convincing.

3. Sierra should be given the opportunity to address the issue of heat rate deviations in its August 1990 ECAC proceeding.

4. Sierra should be placed on notice that failure to better explain its negative heat rate deviations may result in disallowance of fuel expenses in its August 1990 ECAC proceeding.

O R D E R

IT IS ORDERED that:

1. Sierra Pacific Power Company (Sierra) is authorized a net revenue decrease of $1,603,000 annually, or 11.5%, based on an Energy Cost Adjustment (ECAC) decrease of $165,000, an Annual

Energy Rate (AER) increase of $121,000, and an Electric Revenue Adjustment Mechanism (ERAM) decrease of $1,559,000.

2. Sierra's fuel and purchased power transactions and related operations for the review period of July 1, 1988 through June 30, 1989 are found to be reasonable, except that the heat rate deviation reports are subject to further review.

3. Sierra shall file with the Commission's Docket Office an original and 12 copies of a comprehensive report and a plan to address the concerns raised in this proceeding no later than December 1, 1990.

4. The stipulation entered into between Sierra and Division of Ratepayer Advocates is adopted.

5. Appendix A, which reflects the stipulation between Sierra and DRA, and sets forth the projected operating data for Sierra's next review period, is adopted.

This order is effective today.

Dated September 12, 1990, at San Francisco, California.

G. MITCHELL WILK
President
FREDERICK R. DUDA
STANLEY W. HULETT
PATRICIA M. ECKERT
Commissioners

Commissioner John B. Ohanian, being necessarily absent, did not participate.

I CERTIFY THAT THIS DECISION WAS APPROVED BY THE ABOVE COMMISSIONERS TODAY

NEAL J. SHULMAN, Executive Director

APPENDIX A
Page 1

LATE-FILED EXHIBIT NO. 7
SIERRA PACIFIC POWER COMPANY
PROJECTED OPERATING DATA
YEAR ENDING MARCH 1991
ENERGY MIX
PER STIPULATION IN APPLICATION NO. 89-08-046
(MWH)

LN NO		ANNUAL
1	VALMY No. 1 - COAL	1,025,900
2	VALMY No. 2 - COAL	1,044,900
3	TRACY	588,600
4	FT. CHURCHILL	927,000
5	DIESELS & GAS TURBINES	0
6	HYDRO	61,300
7		
8	TOTAL GENERATED	3,647,700
9		
10	IPC FIRM (ELKO)	96,300
11	UP&L FIRM	626,400
12	PACIFICORP	408,700
13	IPC FIRM (LONG-TERM)	558,500
14	SHORT TERM FIRM	11,900
15	VALMY USAGE	267,800
16	SURPLUS ECONOMY	256,400
17	QUALIFYING FACILITIES	508,700
18	CUSTOMER STANDBY	0
19		
20	TOTAL PURCHASED	2,734,700
21		
22	OUTPUT TO LINES	6,382,400
23		
24		
25	SYSTEM PEAK (MW)	1,026

LATE-FILED EXHIBIT NO. 7
SIERRA PACIFIC POWER COMPANY
PROJECTED OPERATING DATA
YEAR ENDING MARCH 1991
FUEL & PURCHASED POWER COSTS
PER STIPULATION IN APPLICATION NO. 89-08-046
($000)

LN NO		ANNUAL
1	COAL - VALMY No. 1	$20,261
2	COAL - VALMY No. 2	20,754
3	IGNITION DIESEL (COAL)	243
4	COAL TRAIN LEASE	316
5	RESIDUAL OIL	2,553
6	NATURAL GAS	26,617
7	GAS SERVICE CHARGE	6
8	DIESEL OIL	126
9	FUEL HANDLING	1,024
10		
11	TOTAL FUEL	71,900
12		
13	IPC DEMAND (ELKO)	881
14	IPC ENERGY (ELKO)	1,498
15	PG&E CUSTOMER CHG	186
16	UP&L DEMAND	9,924
17	UP&L ENERGY	9,622
18	UP&L REFUND SETTLEMENT	(1,056)
19	PACIFICORP DEMAND	5,998
20	PACIFICORP ENERGY	7,182
21	IPC DEMAND (LONG-TERM)	4,728
22	IPC ENERGY (LONG-TERM)	10,442
23	SHORT-TERM FIRM DEMAND	72
24	SHORT-TERM FIRM ENERGY	254
25	VALMY USAGE	6,467
26	SURPLUS ECONOMY	5,885
27	QUALIFYING FACILITIES	28,054
28	CUSTOMER STANDBY	132
29		
30	TOTAL PURCHASED	90,269
31		
32	TOTAL COSTS	$162,169
33		

LATE-FILED EXHIBIT NO. 7
SIERRA PACIFIC POWER COMPANY
PROJECTED OPERATING DATA
YEAR ENDING MARCH 1991
PER STIPULATION IN APPLICATION NO. 89-08-046

LN NO		FUEL CONSUMPTION (MMBTU)
1	COAL - VALMY No. 1	10,165,000
2	COAL - VALMY No. 2	10,422,000
3	IGNITION DIESEL (COAL)	47,460
4	RESIDUAL OIL	918,000
5	NATURAL GAS - STEAM	14,837,000
6	NATURAL GAS - GT	0
7	DIESEL OIL	24,648
8		
9	TOTAL MMBTU	36,414,108
10		
11		
12		
13		UNITS
14		
15	COAL - TONS - VALMY 1	492,000
16	COAL - TONS - VALMY 2	504,000
17	IGNITN DSL - GALLONS	342,000
18	RESIDUAL OIL - BARRELS	148,000
19	NAT. GAS - STM - MCF	14,130,000
20	NAT. GAS - GT - MCF	0
21	DIESEL OIL - GALLONS	177,600
22		

COMPARATIVE EXHIBIT NO. 23
SIERRA PACIFIC POWER COMPANY
REVENUE IMPACT
PER STIPULATION IN
APPLICATIONS NO. 89-08-044 (ERAM) & NO. 89-08-046 (ECAC)

LINE NO.		AS FILED	AS STIPULATED	DIFFERENCE $	DIFFERENCE %
1					
2	RATES				
3	ECAC OFFSET RATE (MILLS)	23.27	22.88	(0.39)	-1.68%
4	BALANCING RATE (MILLS)	1.55	1.55	0.00	0.00%
5					
6	ECACBF	24.82	24.43	(0.39)	-1.57%
7					
8	AER RATE	6.52	6.45	(0.07)	-1.07%
9					
10	ERAM RATE	(0.97)	(2.24)	(1.27)	130.93%
11					
12					
13	CALIFORNIA JURISDICTIONAL SALES (MWH)	428,783	430,626	1,843	0.43%
14					
15	REVENUE REQUIREMENT ($000)				
16	ECAC OFFSET	$9,980	$9,853	($127)	-1.28%
17	ECAC BALANCING	665	667	3	0.43%
18					
19	TOTAL ECAC	10,645	10,520	(124)	-1.17%
20	AER	2,796	2,778	(18)	-0.65%
21					
22	SUBTOTAL - ECAC	13,440	13,298	(143)	-1.06%
23	ERAM	(416)	(965)	(549)	131.92%
24					
25	TOTAL REVENUE REQUIREMENT	13,024	12,333	(691)	-5.31%
26					
27	ECAC & AER REVENUE AT PRESENT RATES (1)	13,879	13,938	59	0.42%
28					
29	INCREASE (DECREASE) (LN 25 - LN 27)	($855)	($1,605)	(750)	
30					
31					
32					
33	TOTAL REVENUE AT PRESENT RATES (1)	37,776	37,935		
34					
35	INCREASE (DECREASE) AS % OF TOTAL	-2.26%	-4.23%		
36					
37					
38					
39	(1) PRESENT RATE REVENUES PER STIPULATION HAVE BEEN ADJUSTED TO REFLECT INCREASED SALES.				

COMPARATIVE EXHIBIT NO. 23
SIERRA PACIFIC POWER COMPANY
CALCULATION OF ECAC RATE
PER STIPULATION IN APPLICATION NO. 89-08-046
($000)

LINE NO.		AS FILED	AS STIPULATED	DIFFERENCE $	DIFFERENCE %
1	FUEL COSTS				
2	DIESEL OIL	$127	$126	($1)	-0.79%
3	RESIDUAL OIL/NATURAL GAS	27,694	29,170	1,476	5.33%
4	NATURAL GAS SERVICE CHARGE	6	6	0	0.00%
5	COAL/DIESEL	40,922	41,574	652	1.59%
6	FUEL HANDLING	1,024	1,024	0	0.00%
7					
8	TOTAL FUEL COSTS	69,773	71,900	2,127	3.05%
9					
10	PURCHASED POWER COSTS				
11	PG&E	186	186	0	0.00%
12	UP&L	18,489	18,490	1	0.01%
13	IPC	17,487	17,549	62	0.35%
14	ECONOMY	10,129	12,352	2,223	21.95%
15	NEW FIRM	13,489	13,506	17	0.13%
16	QF & CUSTOMER STANDBY	32,527	28,186	(4,341)	-13.35%
17					
18	TOTAL PURCHASED POWER COSTS	92,307	90,269	(2,038)	-2.21%
19					
20	TOTAL FUEL & PURCHASED POWER COSTS	162,080	162,169	89	0.05%
21					
22	FRANCHISE & UNCOLLECTIBLES (F&U) EXPENSE				
23	(LN 20 * 1.41% \ 1.91%) (1)	2,285	3,097	812	35.54%
24					
25	TOTAL FUEL AND PURCHASED POWER COST				
26	REVENUE REQUIREMENT	164,365	165,266	901	0.55%
27					
28	ECAC RECOVERY (LN 26 * 78%)	128,205	128,907	703	0.55%
29					
30	FUEL INVENTORY REVENUE REQUIREMENT				
31	(PAGE 2, LN 17)	837	800	(37)	-4.42%
32					
33	ECAC RECOVERY (LN 31 * 100% \ 78%) (2)	837	624	(213)	-25.45%
34					
35	TOTAL ECAC RELATED COSTS (LNS 28 + 33)	$129,042	$129,531	$490	0.38%
36					
37	TOTAL SYSTEM MWH SALES	5,545,679	5,660,420	114,741	2.07%
38					
39	ECAC OFFSET RATE (MILLS) (LN 35 / LN 37)	23.27	22.88		
40					
41	BALANCING RATE (MILLS)	1.55	1.55		
42					
43	ECAC BILLING FACTOR (MILLS)	24.82	24.43		
44					

(1) F&U FACTOR HAS BEEN UPDATED TO REFLECT RATES CONTAINED IN STAFF REPORT IN A 89-08-027, SIERRA'S GENERAL RATE FILING.
(2) REPRESENTS CHANGE IN TREATMENT OF INVENTORY COSTS IN ECAC.

COMPARATIVE EXHIBIT NO. 23
SIERRA PACIFIC POWER COMPANY
CALCULATION OF AER RATE
PER STIPULATION IN APPLICATION NO. 89-08-046

LINE NO.		AS FILED	AS STIPULATED	DIFFERENCE $	DIFFERENCE %
1	FUEL INVENTORY BILLING FACTOR:				
2	DIESEL OIL				
3	AVERAGE INVENTORY LEVEL (BBLS)	4,843	4,377	(466)	-9.62%
4	AVERAGE COST ($/BBL)	$29.82	$29.78	($0.04)	-0.13%
5	INVENTORY VALUE ($000)	$144	$130	($14)	-9.72%
6	RESIDUAL OIL				
7	AVERAGE INVENTORY LEVEL (BBLS)	316,733	263,904	(52,829)	-16.68%
8	AVERAGE COST ($/BBL)	$16.18	$17.40	$1.22	7.54%
9	INVENTORY VALUE ($000)	$5,125	$4,592	($533)	-10.40%
10	COAL				
11	AVERAGE INVENTORY LEVEL (TONS)	138,477	138,477	0	0.00%
12	AVERAGE COST ($/TON)	$41.95	$41.95	$0.00	0.00%
13	INVENTORY VALUE ($000)	$5,809	$5,809	$0	0.00%
14					
15	TOTAL INVENTORY VALUE (LNS 5 + 9 + 13)	$11,078	$10,531	($547)	-4.94%
16					
17	FORECASTED BANKERS ACCEPTANCES RATE	7.45%	7.45%	0.00%	0.00%
18					
19	CARRYING COST OF FUEL INVENTORY (LN 15 x LN 17)	$825	$785	($40)	-4.85%
20					
21	FRANCHISE & UNCOLLECTIBLES (F&U) EXPENSE				
22	(LN 19 * 1.41% \ 1.91%) (1)	12	15	3	25.00%
23					
24	TOTAL FUEL INVENTORY REVENUE REQUIREMENT	837	800	(37)	-4.42%
25					
26	AER RECOVERY (LN 24 * 0% \ 22%) (2)	0	176	176	
27					
28	TOTAL FUEL AND PURCHASED POWER COST				
29	REVENUE REQUIREMENT	164,365	165,266	901	0.55%
30					
31	AER RECOVERY (LN 29 * 22%)	36,160	36,359	199	0.55%
32					
33	TOTAL AER RELATED COSTS (LNS 26 + 31)	$36,160	$36,535	$375	1.04%
34					
35	TOTAL SYSTEM MWH SALES	5,545,679	5,660,420	114,741	2.07%
36					
37	AER RATE (MILLS) (LN 33 / LN 35)	6.52	6.45		
38					

(1) F&U FACTOR HAS BEEN UPDATED TO REFLECT RATES CONTAINED IN STAFF REPORT IN A.89-08-027, SIERRA'S GENERAL RATE FILING.

(2) REPRESENTS CHANGE IN TREATMENT OF INVENTORY COSTS IN ECAC.

COMPARATIVE EXHIBIT NO. 23
SIERRA PACIFIC POWER COMPANY
CALCULATION OF BALANCING RATE
PER STIPULATION IN APPLICATION NO. 89-08-046
1990
($000)

LN NO.		BEGINNING BALANCE	MONTHLY ECAC DEFERRAL	MONTHLY AER DEFERRAL	NET BALANCING RATE REVENUE	REFUNDS & ADJUSTMENTS	ENDING BALANCE	INTEREST
1	1989							
2	JANUARY	$852	($82)	$0	$151	($22)	$899	$7
3	FEBRUARY	906	(76)	0	146	0	976	7
4	MARCH	983	19	0	136	0	1,138	8
5	APRIL	1,146	18	0	116	(77)	1,203	10
6	MAY	1,213	(44)	0	97	0	1,266	10
7	JUNE	1,276	(26)	0	93	0	1,343	10
8	JULY	1,353	42	0	97	0	1,492	10
9	AUGUST	1,502	(1)	0	(90)	0	1,411	11
10	SEPTEMBER	1,422	(38)	0	(95)	(46)	1,243	10
11	OCTOBER	1,253	1	0	(86)	0	1,168	9
12	NOVEMBER	1,177	(9)	0	(93)	0	1,075	8
13	DECEMBER	1,083	55	0	(114)	0	1,024	8
14	1990							
15	JANUARY	1,032	31	0	(133)	0	930	7
16	FEBRUARY	937	(38)	0	(126)	0	773	6
17	MARCH	779	(9)	0	(120)	0	650	5
18								
19	ENERGY COST ADJUSTMENT CLAUSE BALANCE AT APRIL 1						$655	
20								
21	CALIFORNIA JURISDICTIONAL MWH SALES						430,626	
22								
23	BALANCING RATE (MILLS)						1.52	
24								
25	FRANCHISE AND UNCOLLECTIBLE ALLOWANCE (LN 19 x 1.0191) (1)						1.55	
26							=========	

27 (1) F&U FACTOR HAS BEEN UPDATED TO REFLECT RATES CONTAINED IN STAFF REPORT IN A. 89-08-027,
28 SIERRA'S GENERAL RATE FILING.

(END OF APPENDIX A)