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Energy Branch

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

EVALUATION & COMPLIANCE DIVISION
Energy Branch

RESOLUTION E-2087
June 4, 1986

RESOLUTION

ORDER AUTHORIZING SAN DIEGO GAS AND ELECTRIC COMPANY (SDG&E) TO IMPLEMENT THREE NEW EXPERIMENTAL RATE SCHEDULES AND A NEW SAMPLE FORM ENTITLED "REQUEST FOR SERVICE ON SCHEDULE A-E" TO BE CONSISTENT WITH THE REQUIREMENTS OF SENATE BILL 1148

BACKGROUND

By Advice Letter 659-E filed January 2, 1986, San Diego Gas and Electric Company (SDG&E) requests authorization to implement three new experimental rate schedules identified as Schedules A-E1 - Experimental General Service; R-TOU-1 and R-TOU-2 - Experimental General Service; and Sample Form 142-4201 - "Request for Service on Schedule A-E" to be consistent with the requirements of Senate Bill 1148. The facts are as follows:

Advice Letter 659-E is filed in compliance with Section 743 of the California Public Utilities Code; that statute was established by Senate Bill 1148 and was signed into law on October 1, 1985. Section 743 requires every electrical corporation in California that serves a steel producer, frozen food processor, or other "heavy-industry" customer (as defined by the electrical corporation) to file special rates applicable to those customers on or before January 2, 1986. Section 216 of the Public Utilities Code defines an electrical corporation as a "public utility". This Commission is required to approve tariffs in compliance with the legislation by July 1, 1986.

In Section 743, steel producers are defined as California producers (in 1981 or after) of at least 75,000 tons of rolled or finished steel annually with an electric demand of at least 4,000 kilowatts at one plant location; frozen food processors are all customers classified under Standard Industrial Classifications 2037 and 2038, whatever their electrical demand.

Section 743 contains a number of criteria that heavy-industry rates must meet. The rates must:

- (1) Not increase rates for other classes of customers;
- (2) Be below the system average rate;
- (3) Consider "specific service requirements of individual customers, including...reliability, interruptibility, quantity of use, and requirements of voltage";
- (4) Provide incentive to achieve conservation, improvements in efficiency, and time-of-day load shifting;
- (5) Allow "implementation at the option of the customer"; and
- (6) Allow the "benefits from any cost savings" to accrue to customers taking service under the new rates.

In accordance with Senate Bill 1148 SDG&E requests that the tariffs in the above advice letter filing be made effective on or before July 1, 1986.

POSITION OF PARTIES

SDG&E's advice letter states the following:

The new tariff schedules have been designed to reduce system load at the time of SDG&E's annual peak, and secondarily, at such other times as it has a capacity shortage. The system load reduction would be accomplished by re-defining the on-peak period for these new rate schedules. Also, a new super-peak period is being proposed for Schedules R-TOU-1 and R-TOU-2. Specifically, SDG&E would electronically notify its customers of times (on-peak or super-peak period as applicable) that they will be charged much higher pre-established energy rates.

These new tariffs would provide those customers capable of reducing their contribution to SDG&E's annual peaks, a price option that they can use to reduce their bills. This price option would be in the form of very high energy rates at the time of SDG&E's annual peaks (newly established on-peak or super-peak periods that would apply) and relatively lower energy rates at all other times during semi-peak periods. This would be in conjunction with the customer setting a contract minimum demand as provided for within the Request for Service on Schedule A-E Form, for which the customer would pay a fixed price every month.

A contact cloure (signal) will be made by SDG&E to pre-empt the customer's semi-peak or off-peak period and indicate the start of either an on-peak or super-peak period, as appropriate. The on-peak and super-peak energy charge, as appropriate, will be applied to all consumption associated with demand exceeding the Contract Minimum Demand. Consumption associated with demand not exceeding the Contract Minimum Demand, will be billed at the energy charge of the pre-empted period.

The combination of the three tariff schedules is restricted to applying to no more than ten additional customers each year to minimize SDG&E's cost of testing this unique rate design. For their customer's protection SDG&E is requesting that 12-months notice be given by this Commission prior to eliminating these tariffs.

On January 10, 1986, the Public Staff Division (PSD), submitted a memorandum of protest. The comments are summarized below:

"Energy Rate Design and Economics Branch protests the above mentioned advice letter on the following grounds:

1. The following rates have been incorrectly calculated:

Tariff Schedules AE-1, R-TOU-1 and R-TOU-2

- (a) All energy rates
- (b) Customer Charge
- (c) Contract Minimum Demand

2. The following proposed service characteristics are not appropriate:

Tariff AE-1

- (a) Insufficient service length limitations

Tariffs R-TOU-1 and R-TOU-2

- (a) Load trigger levels defining on-peak and super-peak periods
- (b) Lack of service contract
- (c) Allowable contract minimum demand
- (d) Insufficient service length limitations
- (e) Starting time of mandatory on-peak and super-peak hours for Schedule R-TOU-2".

PSD submitted workpapers supporting their protests outlined above on January 14, 1986. PSD's recommendations for modification and adoption of SDG&E's advice letter are discussed in Attachment A to this Resolution. Page 1 summarizes PSD's recommendations on energy rates, customer charges, contract minimum demand rates and

load trigger levels defining on-peak and super-peak periods. Pages 2 and 3 discuss the reasons, where necessary, for rates recommended on Page 1 and present PSD's recommendations on service length limitation, service contracts, allowable contract minimum demand, and starting time of mandatory on-peak and super-peak hours. Pages 4 through 7 of the Attachment are workpapers supporting the rates recommended on Page 1.

SDG&E and PSD have subsequently refined their proposals through a series of meetings and telephone conversations.

FINDINGS

1. SDG&E stipulates to the rates contained in the new set of proposed recommendations and modifications shown in Attachment A to this Resolution.
2. The implementation of a heavy industrial tariff under Section 743 of the Public Utilities Code supersedes any tariff fixed or rate implemented under Section 742 of said Code.
3. The attached tariffs filed under Advice Letter 659-E when supplemented fully comply with the intent of Senate Bill 1148 and Section 743 of the Public Utilities Code.
4. The attached tariffs in Advice Letter 659-E shall become effective on July 1, 1986.
5. Public notification of this filing has been made by mailing copies to other utilities, governmental agencies, and to all interested parties who requested such notification. The Commission staff has received no other protests in this matter.
6. The staff of the Energy Branch of the Evaluation and Compliance Division has reviewed this filing together with the modifications and recommendations made by PSD and recommends it approval.

THEREFORE:

1. San Diego Gas and Electric Company is authorized by Section 454 of the Public Utilities Code and Section X.A. of General Order 96-A to place Advice Letter 659-E as modified by the supplement to incorporate the rates shown on Sheet 1 of Attachment A to this Resolution into effect on July 1, 1986.

2. The Advice Letter 659-E and the accompanying tariff sheets shall be marked to show that they were authorized for filing as modified by Commission Resolution E-2087.

3. Advice Letter 659-E as modified shall become effective on July 1, 1986. This Resolution is effective today.

I certify that this Resolution was adopted by the Public Utilities Commission at its regular meeting on June 4, 1986. The following Commissioners approved it:



Executive Director

DONALD VIAL
President

VICTOR CALVO
PRISCILLA C. GREW
FREDERICK R. DUDA
STANLEY W. HULETT
Commissioners

ADDENDUM TO
RATE DESIGN EVALUATION
SAN DIEGO GAS & ELECTRIC COMPANY'S
EXPERIMENTAL GENERAL SERVICE

ADVICE # 659-E

SUMMARY

San Diego Gas and Electric Company (SDG&E) originally submitted a set of three experimental general service rate schedules.

The CPUC Public Staff Division, Energy Rate Design and Economics Branch (RD&E), prepared an evaluation of the proposal which stated RD&E's recommendations for modification and adoption of the experimental rates. SDG&E and RD&E have subsequently refined their proposals through a series of meetings and telephone conversations. This addendum to RD&E's evaluation states the Branch's recommendations on the revised rates contained in Advice # 659-E.

The following table summarizes RD&E's recommendations for rates to be adopted pursuant to Advice 659-E; workpapers are attached and explain the calculation of these rates.

	A-E1	<u>RATE SCHEDULE</u> R-TOU-1	R-TOU-2
Customer Charge	\$600	\$600	\$600
Demand Charge			
Contract Minimum Demand	\$13.75	\$13.75	\$13.75
Semi-Peak Demand	\$ 0.50	\$ 0.50	\$ 0.50
Limit on Contract Minimum Demand (% of average demand)	100%	75%	75%
Energy Charge			
Super-Peak	n/a	\$.95000	\$.50000
On-Peak	\$8.25000	\$.30000	\$.14000
Semi-Peak	\$.09988	\$.10306	\$.10014
Off-Peak	\$.05447	\$.05343	\$.05343
Denominator of On-Peak & Super- Peak Definition (Special Condition 5 a&b footnotes)			
Super-Peak	n/a	.60	.65
On-Peak	.55	.65	.70
On-Peak and Super-Peak System Load Level, Megawatts (based on 1984 on-system sales)			
Super-Peak	n/a	2020	1864
On-Peak	2203	1864	1731

DISCUSSION

Customer Charges

RD&E's recommended customer charges are based on differentials in the marginal cost of customer service, compared to Schedule AL-TOU, using the methodology recommended by RD&E in SDG&E's Test Year 1986 General Rate Case. RD&E found in that proceeding that the cost of serving a given customer on Schedule A-6 TOU is \$160 per month greater than on Schedule AL-TOU. Data supplied by SDG&E during RD&E's consideration of Proposal 1286-E indicates that Schedule A-E1 involves another \$150 per month, and Schedules R-TOU-1 and R-TOU-2 add yet another \$150 per month. The differential in cost for Schedules R-TOU-1 and R-TOU-2 is then \$160 + \$150 + \$150, or \$460 per month, to be added to Schedule AL-TOU's customer charge of \$20 per month. Since customer charges were left unchanged by the Commission's decision on SDG&E's general rate case (D. 85-12-108), RD&E recommends using Schedule A-6 TOU's customer charge of \$600 per month as a floor under the customer charges on Schedules A-E1, R-TOU-1, and R-TOU-2.

Contract Minimum Demand

On Schedules R-TOU-1 and R-TOU-2, RD&E recommends limiting the allowable Contract Minimum Demand (Special Condition 4) to 75% of the customer's average demand, to provide marginal cost pricing signals as often as is practical. SDG&E proposed setting 100% of a customer's most current twelve month average demand, at the time of filing the Request for Service, as the limit on Contract Minimum Demand. The Contract Minimum Demand serves a useful role in providing bill stability during the year, since most on-peak and super-peak hours will occur in the summer. However, using SDG&E's 1984 load research data, there are more twice as many customer-hours during R-TOU-1 On- and Super-Peak periods, and R-TOU-2 Super-Peak periods, when customer loads would be less than the permitted Contract Minimum Demand, if the customers are permitted to specify 100% rather than 75% of their average demand. Restricting Contract Minimum Demand to 75% of average demand should enhance the tariffs' marginal cost pricing signals without excessive loss of bill stability to customers. RD&E feels that the relationship of Contract Minimum Demand to average demand will be less of a problem under Schedule A-E1, since the small number of on-peak hours maximizes customers' ability to reduce their load rather than being tempted to pay for enough Contract Minimum Demand to cover their full load; thus RD&E can accept SDG&E's proposed limit for Schedule A-E1.

Real-Time System Load Telemetry

RD&E recommends adding a sentence (e.g., at the end of the first paragraph) to Special Condition 5 of each schedule (definition of on-peak and super-peak periods) similar to the following: "In addition, the customer is entitled to receive the telemetry service normally available to customers on Schedule A-6 TOU, provided that the customer pays the expense of the required telephone lease line." The

California Manufacturers Association has suggested that SDG&E provide a no-fault forecast of when on-peak periods would occur and supported the possibility of a no-fault forecast by reference to the Supreme Court's decision in *Waters v. Pacific Telephone Co.* (12 C. 3d 1). SDG&E would need to add to its existing customer service functions to provide such a forecast, but the utility has the existing capability to provide real-time telemetry concerning its system load, which defines the on-peak and super-peak periods. RD&E's suggested sentence would ensure that customers are aware of this method of anticipating on-peak and super-peak periods.

R-TOU-2 Peak Starting Times

RD&E recommends changing the starting time of mandatory on-peak and super-peak hours on Schedule R-TOU-2 (Special Condition 5c), from noon on the first Monday after July 1, to 10 AM on the same date; the mandatory on- and super-peak period has an eight-hour duration. The current definition of the on-peak period in Schedule AL-TOU and A-6 TOU is 11 AM to 6 PM (seven hours). Average capacity costs are higher from 10 AM to 11 AM than after 6 PM, so it would be more appropriate to begin the eight-hour on-peak period at the earlier hour (10 AM) than to delay its start and add hours later in the day.

Tariff Switching Limitation

RD&E also recommends adding a Special Condition stating that customers who leave the experimental service provided by Schedules A-E1, R-TOU-1, and R-TOU-2, cannot go back onto these tariffs within 12 months. Without such a condition, customers could arbitrage the experimental rates against SDG&E's existing TOU rates by switching between the AE/R-TOU rates in winter when there are few on-peak hours and the existing TOU rates in summer when rates include only a fraction of annual capacity costs. RD&E sees little problem, though, if customers wish to change schedules within the AE/R-TOU series.

Service Contract

Finally, the Request for Service form included in Advice # 659-E should be clarified to apply to Schedules R-TOU-1 and R-TOU-2 as well as Schedule A-E1.

RD&E Workpapers, Schedule A-E1

1. Customer charge	\$600.00/month
2. Semi-peak demand charge	\$.50/kw/month
3. Marginal capacity cost from D.85-12-108, allocable to peak hours	
a. Generation	\$73.26/kw/year
b. Transmission	36.24
c. 50% of Distribution	53.98

d. Total	\$163.48
4. Contract minimum demand charge: at least (Line 3d / 12 months)	\$13.62/kw/month
5. Estimated average number of hours of on-peak periods per year	20
6. On-peak energy rate	
a. Capacity allocation (Line 3d / line 5)	\$8.17390/kwh
b. Marginal energy cost	\$.07929

c. Total	\$8.25319
d. Total, rounded to nearest \$.05	\$8.25000/kwh
7. Sales (Use entire AL-TOU/A-6 TOU class for revenue neutrality.)	
a. On-peak	8,076 Mkw
b. Semi-peak	1,414,771 Mkw
c. Off-peak	1,082,650 Mkw

d. Total	2,505,497 Mkw
e. Semi-peak demand	5,971 MW-months
f. Customers	381
8. Average rate for Sched. AL-TOU & A-6 TOU from D. 85-12-108, neglecting voltage discount and franchise fee adjustments	\$.10881
9. Revenue target	272,633 M\$
10. Rate calculations	
a. Customer charge revenue	2,743 M\$
b. Semi-peak demand charge revenue	2,986 M\$
c. On-peak energy charge revenue	66,627 M\$
d. Remaining revenue requirement	200,277 M\$
e. Ratio, semi/off-peak energy cost **	1.8335148

RD&E Workpapers, Schedule A-E1, Continued

f.	Off-peak rate (Line 10d / [(line 10e * line 7b) + line 7c]; use a cap of the R-TOU-1 off-peak rate)	\$.05447
g.	Off-peak energy charge revenue	58,975 M\$
h.	Remaining revenue requirement	141,302 M\$
i.	Semi-peak rate	\$.09988
j.	Ratio, semi/off-peak energy charge	1.8335148

** Sales

A-E1 semi-peak		
AL-TOU/A-6 TOU on-peak		
summer		261,761 Mkw
winter		155,774 Mkw
AL-TOU/A-6 TOU semi-peak		
summer		336,314 Mkw
winter		670,877 Mkw
A-E1 off-peak		
summer		453,074 Mkw
winter		627,697 Mkw

Marginal energy cost (from D.85-12-108)

A-E1 semi-peak		
AL-TOU/A-6 TOU on-peak		
summer		\$.07929
winter		\$.08020
AL-TOU/A-6 TOU semi-peak		
summer		\$.07474
winter		\$.07635
Weighted average		\$.07693
Distribution component		\$.02665
A-E1 off-peak		
summer		\$.04700
winter		\$.05110
Weighted average		\$.04938
Distribution component		\$.00711
Ratio of weighted averages plus distribution component		1.8335148

RD&E Workpapers, Schedule R-TOU-1

1. Customer charge	\$600.00/month
2. Semi-peak demand charge	\$.50/kw/month
3. On- & Super-peak energy charges	.93
(Lines 6a&b * revenue reconciliation, rounded to nearest \$.05)	.30
a. Super-peak	\$.95000/kwh
b. On-peak	\$.30000/kwh
4. Contract minimum demand charge: at least (From Schedule A-E1)	\$13.62/kw/month
5. Sales (Use entire AL-TOU/A-6 TOU class for revenue neutrality.)	
a. Super-peak	50,823 Mkw
b. On-peak	98,873 Mkw
c. Semi-peak	1,271,271 Mkw
d. Off-peak	1,084,529 Mkw
e. Total	2,505,497 Mkw
f. Semi-peak demand	5,971 MW-months
g. Customers	381
6. Marginal cost (energy + capacity)	
a. Super-peak	\$.91649
b. On-peak	\$.29708
c. Semi-peak	\$.10193
d. Off-peak	\$.05284
7. Revenue at line 6's marginal cost (Neglects customer & 50% of distribution costs)	262,834 M\$
8. Revenue target	272,633 M\$
9. Rate calculations	
a. Customer charge revenue	2,743 M\$
b. Semi-peak demand charge revenue	2,986 M\$
c. Super-peak energy charge revenue	48,282 M\$
d. On-peak energy charge revenue	29,662 M\$
e. Remaining revenue requirement	188,960 M\$
f. Ratio, semi/off-peak energy cost	1.9289490
g. Off-peak rate (Line 9e / [(line 9f * line 5c) + line 5d]; use a cap of the AL-TOU/A-6 TOU off-peak rate)	\$.05343
h. Off-peak energy charge revenue	57,944 M\$
i. Remaining revenue requirement	131,016 M\$
j. Semi-peak rate	\$.10306
k. Ratio, semi/off-peak energy charge	1.9289490

RD&E Workpapers, Schedule R-TOU-2

1. Customer charge	\$600.00/month
2. Semi-peak demand charge	\$.50/kw/month
3. On- & Super-peak energy charges	.52
(Lines 6a&b * revenue reconciliation, rounded to nearest \$.05 & \$.01)	.14
a. Super-peak	\$.50000/kwh
b. On-peak	\$.14000/kwh
4. Contract minimum demand charge: at least (From Schedule A-E1)	\$13.62/kw/month
5. Sales (Use entire AL-TOU/A-6 TOU class for revenue neutrality.)	
a. Super-peak	149,697 Mkw
b. On-peak	170,842 Mkw
c. Semi-peak	1,100,429 Mkw
d. Off-peak	1,084,529 Mkw
e. Total	2,505,497 Mkw
f. Semi-peak demand	5,971 MW-months
g. Customers	381
6. Marginal cost (energy + capacity)	
a. Super-peak	\$.50738
b. On-peak	\$.13945
c. Semi-peak	\$.09610
d. Off-peak	\$.05284
7. Revenue at line 6's marginal cost (Neglects customer & 50% of distribution costs)	262,834 M\$
8. Revenue target	272,633 M\$
9. Rate calculations	
a. Customer charge revenue	2,743 M\$
b. Semi-peak demand charge revenue	2,986 M\$
c. Super-peak energy charge revenue	74,848 M\$
d. On-peak energy charge revenue	23,918 M\$
e. Remaining revenue requirement	168,138 M\$
f. Ratio, semi/off-peak energy cost	1.8186980
g. Off-peak rate (Line 9e / [(line 9f * line 5c) + line 5d]; use a cap of the R-TOU-1 off-peak rate)	\$.05343
h. Off-peak energy charge revenue	57,944 M\$
i. Remaining revenue requirement	110,194 M\$
j. Semi-peak rate	\$.10014
k. Ratio, semi/off-peak energy charge	1.8742619