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Decision 44838

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of CECIL J. McINTYRE, KENNETH D. McINTYRE and DORIS E. SCRUGGS doing business as a Co-partnership under the firm name and style of INDIAN VALLEY LIGHT AND POWER COMPANY for an order of the Public Utilities Commission of the State of California authorizing applicant to withdraw and cancel its filed and effective rate schedule D-1 applicable to its domestic electric service and to file and make effective in lieu thereof rate schedule D-1 for domestic electric service, attached hereto and made a part hereof.	Application No. 31642

C. J. McIntyre for applicants; E. N. Dye for California Farm Bureau Federation, interested party.

O P I N I O N

Cecil J. McIntyre, Kenneth D. McIntyre, and Doris E. Scruggs, doing business as Indian Valley Light and Power Company, by the above-entitled application filed August 1, 1950, request an order of the Commission authorizing an increase in the terminal block of the domestic service rate, Schedule D-1, to customers located in, and in the vicinity of, the towns of Greenville and Crescent Mills, Plumas County, California. A copy of the proposed rate is attached to the application and marked Exhibit "A."

A public hearing on this application was held before Examiner Edwards on September 5, 1950 at Greenville, California, and the matter was submitted on that date for Commission decision.

Applicants' reason for requesting an increase in the level of the terminal rate on the domestic schedule is to obtain a compensatory revenue from space heating service. The present terminal rate

level is 1.0 cent per kwhr, and an increase to 1.4 cents per kwhr, beyond 1,000 kwhr monthly usage, is sought. Applicants' present and proposed rates are as follows:

Schedule D-1, Domestic Service

	Present	Proposed
Service Charge, per Meter per Month . . .	$0.60	$0.60
First 40 kwhr, per kwhr	4.4¢	4.4¢
Next 60 kwhr, per kwhr	3.0	3.0
Next 100 kwhr, per kwhr	2.3	2.3
Next 800 kwhr, per kwhr	1.0	1.0
Over 1,000 kwhr, per kwhr	1.0	1.4

Minimum Charge: The service charge is the minimum charge per month.

Charges for service under the proposed, as compared to the present rates, may be compared in the following manner:

Monthly Usage Kwhr	Monthly Billing: Present	Monthly Billing: Proposed	Increase: Amount	Increase: Ratio
40	$ 2.36	$ 2.36	$ 0.00	0.0%
100	4.16	4.16	0.00	0.0
200	6.46	6.46	0.00	0.0
500	9.46	9.46	0.00	0.0
1,000	14.46	14.46	0.00	0.0
2,000	24.46	28.46	4.00	16.4
3,000	34.46	42.46	8.00	23.2
5,000	54.46	70.46	16.00	29.4

The Indian Valley Light and Power Company is one of the smaller electrical utilities in the state which does not own or operate any power production facilities, but depends upon the Pacific Gas and Electric Company for its source of electricity. Electricity is purchased under a resale rate Schedule P-6, at a potential of 4,160 volts. The energy is stepped down by means of distribution transformers to a secondary voltage of 120/240 volts for domestic use and supplied through two or three wire services and meters. During 1949 an average of 617 customers received service under the domestic schedule of which 55 used more than 1,000 kwhr in any month and only these latter customers would be affected by applicants' proposed rate

change. The over-all effect of the proposal is to increase the present total system revenue by less than four-tenths of one per cent.

In substantiation of the need for an increase in the rate for electric heating, applicants introduced a study as Exhibit No. 1 entitled: "Estimate of Cost of Serving Electric Space Heating." This study contains some brief data as to the history, territory served and current operations of the system, as well as estimates of cost of serving the electric heating load. With the present-day costs of competitive heating fuels like wood, stove oil, and liquefied petroleum gas, applicants anticipate a rapid conversion to electric heating if the present 1 cent terminal rate is maintained.

Three characteristic types of customers were analyzed in order to determine the unit incremental cost of imposing electric heating load on the existing distribution system. The characteristic connected loads, demand factors, and diversity factors assumed by applicants are as follows:

Typical Connected Loads

	Customer A	Customer B	Customer C
Lights, Refrigerator and Small Appliances	1.75 kw	1.75 kw	1.75 kw
Range	-	8.00	8.00
Water Heater	-	3.00	3.00
Air Heat	-	-	12.00
Total Connected Load	1.75 kw	12.75 kw	24.75 kw
Demand Factor (Conn. Load to Meter)	0.68	0.36	0.67
Demand at Meter	1.20 kw	4.60 kw	16.60 kw
Diversity Factor (Meter to Transformer)	1.50	2.19	1.27
Demand at Transformer	.80 kw	2.10 kw	13.10 kw
Diversity Factor (Transformer to Substation)	2.28	1.10	1.20
Demand at Substation	.35 kw	1.90 kw	10.90 kw
Over-all Demand Factor (Connected Load to Substation)	0.20	0.15	0.44

Applicants' estimates of demands at various points on the system were checked by means of recording ammeters and are typical of the coldest winter days when the temperature in applicants' service

area may go as low as -20°F, with snow on the ground as deep as 4 feet. The poor diversity characteristics of the air heating load compared to the other domestic loads is well illustrated by this analysis, and is one of the reasons why applicants believe it necessary to establish a higher terminal rate.

From the above analysis, applicants computed that each new kw of connected heating load will impose 3/4 kw of additional load at the substation where energy is purchased on a demand and commodity basis. Because the air heating load is on only during cold weather, when ambient temperatures are below the basic design level for electrical equipment, the distribution transformers can safely be worked at an overload rating. Applicants used 150% transformer loading and a diversity factor of 1.09; therefore, each connected kilowatt of new air heat requires only an additional 0.61 kw of distribution transformer capacity. They also assumed for purpose of this analysis that the existing primary and secondary circuits could handle this added load during these cold periods without increasing their sizes. Adding as much as 12 kw of heat to an existing range and water heater customer would, however, call for a change in size of service wires from No. 6 to No. 4, and in meter size from 15 ampere to 50 ampere.

With transformers costing $11.67 per kva installed, applicants estimated the incremental distribution transformer, meter and service capital at $8.02 per kw of new connected air heating load. An additional allowance of $5.86 per kw of connected heating load was figured for the substation transformers and regulators. Under the assumption that approximately 62 customers would install an average of 12 kw of heat, a total new load of 750 kw would be handled. On this basis, $10,410 of new system facilities would be necessary, exclusive of enlargement of primary and secondary wires in some cases.

The cost of purchased power was estimated to increase by over $10,000 annually for a sale of an additional 931,500 kwhr of air

heat energy. This amount was determined by taking the month-to-month purchased energy figures for 1949 and superimposing the heating demand and energy estimates plus 10% loss and recomputing the monthly bills. The estimated increases may be summarized as follows:

Purchased Power Increase Estimate

Month	Hours Heaters Would Operate	Kwhr Used By Heaters	Kw Demand Added to System Peak	Increase Demand Charge	Increase Energy Charge	Increase Total Charge
Jan.	239	179,250	600	$ 344.11	$1,241.09	$ 1,585.20
Feb.	206	154,500	600	343.74	1,151.53	1,495.27
Mar.	173	129,750	600	344.84	989.85	1,334.69
Apr.	99	74,250	500	288.68	610.82	899.50
May	48	36,000	400	230.98	642.48	873.46
June	14	10,500	300	173.89	151.81	325.70
July	-	-	-	-	-	-
Aug.	-	-	-	-	-	-
Sept.	10	7,500	300	172.90	132.05	304.95
Oct.	104	78,000	500	289.51	633.38	922.89
Nov.	133	99,750	500	289.72	768.03	1,057.75
Dec.	216	162,000	600	346.70	1,192.37	1,539.07
Year	1,242	931,500	4,900	2,825.07	7,513.41	10,338.48

In addition to the increase in purchase power, there would be increases in taxes, depreciation, and operating expenses on the new load and equipment.

Annual Cost Increase Estimate For
750 Kw of New Connected Air Heating Load

Purchased Power	$10,338.48
Local Taxes	248.64
Federal 3-1/3% Elec. Energy Tax	310.00
Depreciation	425.00
Operation Expense	279.45
Total	$11,601.57

If this energy is all sold on the 1.0 cent terminal rate, the revenue would be (931,500 @ 1.0¢) = $9,315.00

Indicated Deficit: 2,286.57

Applicants propose raising the terminal rate by 4 mills (beyond 1,000 kwhr) to cover the deficit illustrated, and claim that this is not a new or novel form of rate structure in this state.

San Diego Gas and Electric Company operates under such a rate form for its domestic Schedules D-1 (L) and D-2 (L).

Illustrative San Diego Domestic Rate Schedule
D-2(L) With Stepped Up Terminal Rate

First	12 kwhr, or less	$0.90
Next	28 kwhr, per kwhr	4.2¢
Next	60 kwhr, per kwhr	2.3¢
Next	100 kwhr, per kwhr	2.0¢
Next	300 kwhr, per kwhr	1.3¢
All over	500 kwhr, per kwhr	1.5¢

The main difference between the San Diego rate and applicants' proposal is that the step-up occurs at 500 kwhr monthly usage instead of 1,000, and the jump is two mills per kwhr instead of four mills. Because of the more extreme climate in applicants' service area, starting the step-up at 500 kwhr would penalize some of the domestic appliance, range, and water heater load other than air heating.

Only two customers appeared at the hearing, of which only one objected to the proposed rate increase. This customer testified that for the coldest winter months, his bill is approximately $50 and the proposed rate change would increase such bills to the extent of $12 or more. While the greater part of the present customers receive little or no increase by applicants' proposal, only five will receive increases in their bills in excess of 15%.

In analyzing the record in this proceeding and in reaching a conclusion as to the level of the heating rate for the future, we note that the applicants did not test out their proposed rate to see if it were too high or too low, compared to the estimated deficit. Our analysis, shown below, leads us to believe that the 1.4 cent terminal rate is too high a level for electric heating service on this system, assuming that the heating load starts after 800 kwhr monthly usage for the average customer.

Month	Kwhr Used By Heaters	Quantity Sold At 1.0¢	Quantity Sold At 1.4¢
Jan.	179,250	12,400	166,850
Feb.	154,500	12,400	142,100
March	129,750	12,400	117,350
April	74,250	12,400	61,850
May	36,000	12,400	23,600
June	10,500	10,500	-
July	-	-	-
Aug.	-	-	-
Sept.	7,500	7,500	-
Oct.	78,000	12,400	65,600
Nov.	99,750	12,400	87,350
Dec.	162,000	12,400	149,600
Total	931,500	117,200	814,300

Revenue at Proposed Rates	117,200 @ 1¢ equals	$1,172
	814,300 @ 1.4¢ =	11,400
		12,572
Revenue at Present Rates	931,500 @ 1.0¢ =	9,315
Proposed Rate Increase		3,257

This amount of increase is nearly $1,000 greater than the deficit shown in the study. Applicants' study of costs did not include interest on the increment investment to serve the heating load. If a 6% interest rate is assumed, then the proposed increase is approximately $400 greater than necessary. Under such assumptions, an increase of 3.5 mills per kwhr appears justified.

We are of the opinion that the record in this proceeding and the particular local conditions warrant an increase in the domestic schedule to compensate for electric heating and the order will authorize applicants to refile their domestic rate and step up the terminal rate to 1.35 cents per kwhr after 1,000 kwhr monthly usage. While this is an unusual form of rate in this state, the Commission has authorized this type of rate before where the particular situation so justified. The effect of this 1.35 cent terminal rate, based on 1949 consumption, will result in annual gross revenue increase of $324 in lieu of $370 under the conditions of applicants' request.

A-31642 NB

ORDER

Cecil J. McIntyre, Kenneth D. McIntyre, and Doris E. Scruggs, doing business as Indian Valley Light and Power Company, having applied to this Commission for an order authorizing certain increases in its domestic rate Schedule D-1, a public hearing having been held, the matter having been submitted, and now being ready for decision,

IT IS HEREBY FOUND AS A FACT that the increases in rates and charges authorized herein are justified; therefore,

IT IS HEREBY ORDERED that applicants are authorized to file in quadruplicate with this Commission, after the effective date of this order, in conformity with General Order No. 96, the schedule of rates shown in Exhibit "A" attached to the application, except with the terminal rate modified so as not to exceed 1.35 cents per kwhr for consumption in excess of 1,000 kwhr per month, and, after not less than ten (10) days' notice to the Commission and the public, to make said rates effective for service during billing periods ending on and after November 15, 1950.

The effective date of this order shall be twenty (20) days after the date hereof.

Dated at San Francisco, California, this 26th day of September, 1950.

R. E. Mittelstaedt
Justus F. Craemer
Ira H. Rowell
Harold P. Huls
Kenneth Potter
Commissioners.