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Decision No. 43368

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of PACIFIC GAS AND ELECTRIC COMPANY for an order of the Public Utilities Commission of the State of California authorizing applicant to withdraw and cancel all of its filed and effective rate schedules applicable to natural gas service and to file and make effective in lieu thereof the natural gas rate schedules attached to and made a part of this petition, etc.	Application No. 29777

Pacific Gas and Electric Company by Robert H. Gerdes and Ralph W. Duval; City of San Francisco by Dion R. Holm, City Attorney, and Paul L. Beck, Chief Valuation and Rate Engineer; City of Oakland by John W. Collier, City Attorney, Archer Bowden, Assistant City Attorney, and Loren W. East, Public Utilities Engineer; City of Berkeley by Fred C. Hutchison, City Attorney, and Robert T. Anderson, Assistant City Attorney; City of Bakersfield by Carl J. Thornton, City Manager; City of Fresno by A. L. Hildebrand, Commissioner of Finance, and C. M. Ozias, City Attorney; City of Palo Alto by Arnold Rumwell, City Attorney, Harold May, Gas Engineer, and F. S. Miller, Engineer; U.S. Department of Justice for the Departments of Army, Navy, and Air Force by Colin A. Smith, Special Assistant to the Attorney General; U. S. Federal Public Housing Administration by J. E. Prisin-Zano; City of Sacramento by Everett M. Glenn, City Attorney; California Manufacturers Association by Alfred Hampon, Jr. and George D. Rives of Brobeck, Phleger and Harrison; Mission Linen Supply, et al, by L. H. Stewart and W. D. MacKay.

O P I N I O N

Pacific Gas and Electric Company[1] seeks authority to increase the rates charged for gas service. Formal hearings have been held on 26 days before Commissioners Rowell and Potter and Examiner O'Brien. The record contains almost 2,800 pages of transcript and 100 exhibits

1/ Hereinafter referred to as Pacific.

presented by 31 witnesses who testified in behalf of applicant, the Commission's staff, and certain of the interested parties who entered appearances in the proceeding.[2] Written arguments were submitted by the parties, both upon the motion of Pacific early in the proceeding for an interim increase in rates and upon the entire case following the formal hearings.

Pacific furnishes gas for domestic, commercial, industrial, agricultural, and resale uses in 31 counties in northern California. The territory includes some 108 incorporated cities and towns, with some unincorporated communities and rural territory. At the end of 1948, about 920,000 customers were receiving gas service of which about 4,000 received service from isolated butane-propane-air distribution plants. Natural gas was furnished on a firm basis to almost 915,000 customers, and 751 industrial customers received natural gas on an interruptible basis. Relatively small amounts of gas manufactured from fuel oil were produced to meet peak-day requirements. Total 1948 send-out was almost 209 billion cubic feet of which 52% was used to supply firm service customers, 26% for interruptible service customers, and 17% for the operation of Pacific's steam-electric generating plants.

In 1948, Pacific purchased 90% of its natural gas requirements from field producers in northern California and obtained the remainder from Southern California Gas Company and Southern Counties Gas Company in accordance with a contract submitted to the Commission in Application No. 28652 and authorized by Decision No. 40671 on August 26, 1947. Pacific is presently constructing a 500-mile transmission line to the California boundary near Topock, Arizona, through which it will receive deliveries of gas from mid-continent fields commencing early in 1951. Of its 1948 purchases, 51% were obtained from the Rio Vista dry gas field in the Sacramento Valley and 14% from the Kettleman oil field in the San Joaquin Valley.

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[2] A list of witnesses is incorporated in the appendix hereto.

Pacific furnishes electric service to most of the territory in which gas is distributed, as well as to a considerably more extensive area in northern California in which gas service is not rendered. It also provides water service in a few areas and steam heat service in parts of San Francisco and Oakland.

Pacific filed its original application for changes in gas rates in this proceeding on October 20, 1948, asking that the rates proposed therein be made effective January 1, 1949. Initial hearing on the application was set for January 19, 1949, on which date a new and higher set of proposed gas rates was submitted in an amended application with a request for authority "to immediately file and make effective" the proposed rates. Following presentation of its direct evidence on January 27, 1949, Pacific made a motion asking the Commission to grant interim rate relief pending the complete presentation of evidence. Additional direct evidence was submitted by Pacific at a series of hearings commencing March 2, 1949, at which time cross-examination, directed principally toward the issues raised by the motion, was conducted by the several interested parties. The Commission's staff introduced exhibits showing the results of operations for 1947 and 1948. The Commission has not granted any interim rate increases as requested by Pacific. Accordingly, the entire rate application is before us for consideration.

Pacific summarizes the reasons for its proposed increase in rates as follows:

1. Reduced and inadequate earnings as the result of the combined impact of increased capital and operating costs.

2. The decline in gas availability from California fields and substantially increased cost of gas resulting from the expiration of favorable flat prices on January 1, 1949 and the reinstatement of escalator provisions in some of the company's important gas purchase agreements, together with upward adjustments of prices to be paid producers under other gas purchase contracts.

3. Increases in salaries and wages paid to employees.

4. Materially higher Gas Department maintenance expenditures in 1949 and 1950, such added annual costs being estimated to be in excess of $900,000 for 1949 with further added expenditures in 1950.

5. Extraordinarily large capital expenditures for gas holders and other related facilities (including an 80-mile section of the Topock-Milpitas pipe line), to enable the company to meet customer winter demands and afford reasonable certainty of continuity of service, which expenditures will produce only nominally increased gross revenues entirely insufficient to meet the carrying costs and operating expenses, including depreciation annuity and taxes, associated therewith.

6. The need for added net revenues from its Gas Department operations to afford the company a fair return on the capital cost of its properties and help maintain its credit and enable it to obtain, on favorable terms, the funds essential to carry forward the largest construction program of its entire history.

EVIDENCE ON GAS DEPARTMENT EARNINGS

Income

For many years Pacific's gas tariff schedules have contained certain rates, the level of which changed automatically with changes in the posted price of fuel oil. A number of the contracts under which gas purchases are made likewise contain prices which fluctuate with the posted price of fuel oil. Several decreases in this posted price occurred during the pendency of the proceeding,[3/] resulting in numerous revisions of both revenue and expense estimates. Both Pacific and the Commission's staff made estimates of over-all revenue and expense items which reflect the earning position and income requirements of applicant's gas operations. The following figures will serve to show generally the differences between the several estimates assuming sales under average temperature conditions:

3/ The several posted prices of Standard Bunker Fuel Oil, f.o.b. Richmond, California, which were in effect during the pendency of this proceeding, are:

$2.30 per barrel effective November 12, 1948
$2.05 per barrel effective January 25, 1949
$1.85 per barrel effective April 1, 1949
$1.70 per barrel effective June 1, 1949
$1.35 per barrel effective September 1, 1949

Revenue, Expense and Rate Base

Thousands of Dollars

	1948	1949			
				Pacific	
		Pacific	Staff	Regular	Pro Forma d
	(a)	(b)	(b)	(c)	(c)
Operating Revenues	71,082	71,709	72,459	69,996	70,200
Operating Expenses					
Expenses Other Than Taxes and Depreciation	45,096	50,928	50,508	49,334	49,747
Taxes	9,845	7,660	8,322	7,612	7,647
Depreciation	2,638	2,713	2,742	2,713	3,010
Total Operating Expense	57,579	61,301	61,572	59,659	60,404
Net Operating Revenue	13,502	10,408	10,887	10,337	9,796
Rate Base	183,485	210,909	205,661	210,909	231,049
Rate of Return	7.36%	4.93%	5.29%	4.90%	4.24%

a. Oil prices as experienced, rates as on file from time to time.
b. Oil $1.85 per barrel for full year under present tariff schedules.
c. Oil $1.70 per barrel for full year under present tariff schedules.
d. Revenues, expenses, and base adjusted to reflect, for a full year, capital added in 1949.

It is significant, as revealed in the foregoing table, that, assuming a lower price of oil of $1.70 per barrel, prevailing for the full year 1949, revenues show a reduction from 1948, while both expenses and capital base show substantial increases. The sharp drop in rate of return illustrates the cumulative effect of declining net revenues coincident with an expanding plant. The further depressing effect of capital additions, necessary to maintain rather than expand sales, is likewise evident from Pacific's showing on a "pro forma" basis.

The Commission staff estimate was predicated on a fuel oil price of $1.85 per barrel for the entire year. Pacific submitted estimate of revenue and expenses based upon an oil price of $1.85 and, following the June 1, 1949 reduction to $1.70, presented a revised estimate showing results under the lower oil price. Accordingly, differences between Pacific and the staff will be revealed by comparing the respective studies at the $1.85 oil price. The differences in the respective revenue and expense items shown by a comparison of Pacific's estimates at $1.85 and $1.70 oil provide a basis for estimating acceptable results at the lower oil price. As may be seen from the table, the reduction in oil prices results in a relatively minor decline in net revenues.

Gross Revenues

The staff's revenue estimate, for 1949, at a posted price of fuel oil of $1.85 per barrel, exceeds Pacific's estimate by $750,000. The principal difference is the staff estimate of $1,000,000 more revenue from curtailable sales than that estimated by Pacific. Pacific's estimate of general service revenue was $280,000 greater than the staff estimate. Differences in other sales categories were in lesser amounts.

The difference in curtailable sales results from Pacific's estimate of larger curtailments of service to this class of customer. The staff witness anticipated curtailment of about 2% or approximately 1.2 billion cubic feet, but concluded that such adjustment need not be reflected specifically, as it fell within the over-all limits of accuracy in such a study. While Pacific's method of computing curtailment was said by the staff witness to be appropriate and would yield reasonable results, we are not convinced that Pacific's estimate of interruptible sales should be given more weight than that of the staff since it accepted the staff's estimate of total interruptible demands.

The estimates of revenue for 1949 are predicated upon assumed sales under average temperature conditions. The City of Oakland points out that the actual sales in the first three months of 1949 exceeded the adjusted sales under assumed average temperatures by $3,141,511 in Pacific's estimate. While the temperature adjustment made by Pacific was based upon a method recently developed by the Commission's staff, the city questions whether the method employed would result in a balancing of actual revenues which fell above or below a level corresponding to average temperature conditions.

The estimates of revenues submitted are such as to lead us to the conclusion that for rate-fixing purposes, Pacific's revenues under present rates, on 1949 operations with average temperature conditions and oil prices assumed at a level of $1.70 per barrel throughout the year, would approximate $70,500,000.

Operating Expenses

The difference in expense estimates, exclusive of taxes and depreciation, with oil at $1.85 per barrel, is $420,000, or about 3/4 of 1%. In the aggregate the estimates are in substantial agreement. Comparison of the estimates by individual classes of expense shows that the staff estimate of the cost of natural gas exceeded that of Pacific by $630,000, and $32,000 for the cost of propane and butane. In all other classes, the staff estimate was lower than Pacific. Principal differences were $604,000 in maintenance expense and $183,000 in pension expense.

Pacific estimated 200 billion cubic feet of natural gas purchased at a weighted average cost of 17.34 cents per Mcf. The staff estimate approximated 204 billion cubic feet at a weighted average cost of 17.30 cents. Since the unit prices used in the estimates are substantially the same, the principal reason for the difference is the estimate of available gas supplies.

Of the $604,000 difference in maintenance expense, $545,000 is attributable to differences in estimates of distribution plant maintenance, $486,000 of this amount being in connection with the cost of installing leak clamps. Pacific estimated it would install 44,800 clamps in 1949 at a cost of $980,000. It showed that of 743,000 cast-iron main joints on the system about 508,000 still required clamps. It asserts that these clamps, which were difficult to obtain during the war, are now available in greater quantity and will be installed at the estimated rate to take advantage of extensive city street repairs that are under way. The staff estimated its maintenance expense allowance as the average of such expenses during 1947, 1948, and early 1949, after making a price level adjustment for 1947. It estimated $494,000 for leak clamp work during the current year which would permit installation of about 23,000 clamps.

The cost of installing leak clamps has been an issue in each gas rate proceeding involving Pacific since the introduction of natural gas. Such clamps are required to reduce the hazard from gas leakage resulting from the drying effect of natural gas on the packing in cast-iron main joints. The Commission believes that the substantial increase in this item estimated by the staff is an adequate amount to reflect the appropriate level of average maintenance expenses for 1949, although circumstances may justify Pacific in actually incurring a greater expense during this particular year.

Differences in the estimates of administrative and general expense, pensions, insurance, injuries and damages, and uncollectible accounts show a disparity of about 10%, or $285,000. Both Pacific and the staff estimated these expenses for the entire company operation and then allocated a portion to the Gas Department. Pacific in general based its estimates on the cost per customer of the principal classifications and the estimated future customers. The staff in general estimated the 1949 costs by accounts, and reflected the recent trends in those accounts. Pacific made its allocations on the basis of the relationship of gross revenues of the several departments. The validity of the gross revenue method was challenged on cross-examination where it was shown that substantial changes in cost allocation resulted from rate adjustments and fuel oil price fluctuations, neither of which had a bearing upon the costs involved. Pacific's witness agreed that other methods could be used but contended that none were as simple to apply nor productive of any more reasonable results. The adoption of the gross revenue method of allocation by the company and its use of that method since 1920 was shown to have been influenced by treatment said to have been accorded to such items by this Commission in a number of its earlier decisions. The staff developed a number of ratios based upon revenues, expenses, plant, pay rolls, customers and past injury and damage payments, and used such ratios alone or in combination as seemed appropriate. The staff analysis permits evaluation of the reasonableness of the results of application of the gross revenue method. Both estimates will be given due consideration.

Based upon the estimates of expenses, exclusive of taxes and depreciation, and the differences discussed in the several arguments, we conclude that for rate-fixing purposes, based upon 1949 operations under average temperature conditions and with the market price of fuel oil at $1.70 per barrel, an amount of $49,200,000 is appropriate to cover such costs.

A comparison of the tax estimates of Pacific and the staff indicates substantial agreement except for those taxes which are based upon income. Since the staff estimates of revenue were greater and its estimates of expense were less than Pacific's, the larger income tax net income resulted in a staff income tax estimate almost $730,000 more than Pacific's. The method of estimating income taxes and the tax rates adopted are not in controversy. The staff estimated property taxes for 1949 at $4,649,000, an increase over 1948 of 17.9%. Pacific's estimate was only $33,000 higher. Both estimates were based upon predicted increases in assessed valuation as well as increases in the tax rates. The Commission believes that such estimates are somewhat more liberal than necessary to cover actual tax increases which may be incurred. For the purpose of this proceeding an estimate of 1949 taxes chargeable to Gas Department operations, consistent with the above adopted estimates of revenues and expenses, is concluded to be $7,950,000.

The estimated expense of providing a depreciation annuity, derived in accordance with the 5% sinking fund method, as computed by the staff, is $2,742,000, about 1% higher than Pacific's estimate.

In its presentation, the staff recommended that a depreciation reserve requirement study be made, such information being desirable in the determination of appropriate depreciation annuity rates. Pacific agreed that such reviews should be made from time to time and indicated its willingness to participate in an analysis of the reserve requirement. We believe that such studies should be undertaken by Pacific at this time and carried to completion as expeditiously as possible.

Conclusion on Net Revenue

From the foregoing review of revenue and expense estimates, the Commission concludes that under present rates, expected 1949 volume of sales under average temperature conditions, and a posted price of fuel oil at $1.70 per barrel prevailing throughout the year, Pacific would realize a net revenue of $10,600,000. That net revenue may appropriately be related to a rate base hereinafter found reasonable as a test of the adequacy of Pacific's present rates.

Rate Base

Pacific estimated a capital base which it terms "Cost of Properties plus Working Capital," applicable to the year 1949, in the amount of $210,909,000. The staff rate base for 1949 was $205,661,000. Both included the cost of standby gas manufacturing plants. The non-landed capital cost of such plants for 1949 was reported at $10,810,000. The staff also made a showing on a rate base which excluded such capital. A comparative summary of the principal items of the rate base and the differences between the staff's and Pacific's estimates is shown in the following tabulation:

Summary Comparison of Weighted Average Rate Bases
Year 1949

	C.P.U.C.Staff	Pacific	Difference
Organization and Franchises.....	$ 682,000	$ 688,000	$ (6,000)
Tangible Capital Departmental			
Gas Department #..............	188,703,000	187,361,000	1,342,000
Common Utility - Pro Rata......	11,560,000	11,573,000	(13,000)
Deductions and Adjustments......	(999,000)	(893,000)	(106,000)
Subtotal, Tangible.........	199,264,000	198,041,000	1,223,000
Difference between Cost to P.G.&E. Co. of certain acquired properties and "Original Cost" at which these properties are included above.	-	667,000	(667,000)
Materials and Supplies..........	3,000,000	3,374,000	(374,000)
Working Cash....................	2,715,000	8,139,000	(5,424,000)
Totals #....................	205,661,000	210,909,000	(5,248,000)

\# Includes manufactured gas plants at cost.
( ) Indicates staff lower than Pacific.

Plant Costs

Except for tangible Gas Department capital, Pacific's estimate exceeds that of the staff. The excess in the staff estimate of tangible capital arises in part from a larger staff estimate of customer increase during 1949 and the estimated capital costs of installing distribution facilities required to serve the added customers. The weighted average effect of such costs on rate base is estimated to be $923,000. The remaining variation appears to have resulted from differences in treatment of operative fixed capital costs carried in construction work in progress. Rather minor differences result from Pacific's larger estimates of intangible capital, its proration of common utility capital, and the estimated capital adjustments for rate base purposes.

As mentioned above, the staff presented an alternate rate base which excluded the non-landed tangible book cost of the standby gas manufacturing plants. In doing so, it pointed out that Pacific had accrued on its books a depreciation provision equal to the cost of the plants and was no longer crediting interest on that portion of its depreciation reserve. The staff's witness pointed out that the plants were still serviceable and perform a useful function in system operations, as a consequence of which it felt that the plant investment merited some recognition. Pacific in support of its contention that the capital costs be included in rate base, introduced evidence of the cost of installing new plants which would provide the same service. The estimated cost ranged from 16 to 19 million dollars as contrasted to the $10,810,000 cost of the present plants. If the plants were new or only partially depreciated, no question would arise regarding the propriety of including them in rate base. It would appear equitable to both Pacific and its customers to include the standby plant capital in rate base at approximately one-half of the recorded cost, with no allowance made in expenses for depreciation annuities on the fully depreciated capital.

Pacific has included in its base an item of $667,000 which it contends is the Gas Department's proportion of the unamortized excess of the estimated cost of acquisition of certain acquired properties over the estimated costs at which such properties are carried on its fixed capital accounts. In Decision No. 38638,[4] the Commission discussed the same item at some length and concluded that no decision regarding the disposition of the matter should be made until it gave consideration to the reclassification of Pacific's capital accounts for all departments. The uncertainties then confronting the Commission have not since been resolved and this item will be excluded from rate base.

Materials and Supplies

Pacific estimated a rate base addition of $3,374,000 to reflect the cost of materials and supplies on hand. The amount was determined by assigning to the Gas Department certain arbitrary portions of the cost of various classes of materials and supplies reportedly

[4] Case No. 4749 dated January 23, 1946 (46 CRC 304)

on hand on August 31, 1948, which its witness testified were used in gas operations. The ratio of the amount of the August balance assignable to the Gas Department was applied to the average of the total monthly balances for the first eight months of 1948 to obtain the estimated rate base addition. The staff estimated the average materials and supplies allocable to the Gas Department from the monthly reports, and for 1948 obtained an amount of $3,236,000. The balances reported for January and February, 1949, led the staff to believe that balances would be less in 1949 than in the previous year. It estimated an amount of $3,000,000 for the year. The sharp rise in price levels since the removal of federal price controls and the expanded rate of use of such supplies by Pacific is offset somewhat by a lesser need to maintain large stocks as a protection against material shortages and slow deliveries. The Commission believes that an allowance as large as that proposed by the staff will be liberal.

Working Cash

Pacific estimated an allowance for working cash in the rate base of $8,139,000. That amount was determined to be the Gas Department's portion of an estimated requirement of $30,000,000 for all departments. This latter sum was adopted by Pacific after determining that the average monthly balance of cash and government securities was approximately 33 and 34 million dollars in 1947 and 1948, respectively. Pacific contends that working cash requirements are dependent upon volume of business, extent of construction programs, spacing of new financial offerings and the magnitude and timing of dividend, interest, and tax payments and settlements on construction projects. It also asserts that sizable working cash balances enhance the credit standing of a utility, tending to minimize the cost of money which is advantageous to its customers.

The staff computed a working cash allowance of $2,715,000, $5,424,000 less than Pacific's estimate. The staff testified that it recognized the principles[5/] upon which the Commission has predicated allowances for a reasonable working cash requirement, and that the amount selected was determined by a method long used by the staff. One average month's cost of purchased gas and other fuels and two average months' other operating expenses are taken as the gross requirement and that sum is reduced by an amount which will reasonably recognize that considerable sums for the payment of taxes are accrued in advance of such payments, are intermingled with other corporate funds, and are available to the utility to meet a portion of its working cash requirements. The staff analysis showed that the average balance of tax accruals exceeded the gross working cash requirements. Guided by its interpretation of the effect of a prior decision[6/] of this Commission respecting Pacific's Gas Department, it concluded that an amount of working cash equal to one-half of the gross requirement would be adequate. Inclusion in rate base for operating working cash in the amount suggested by the staff will, we believe, provide an adequate return to Pacific for such funds as may be required. The rate of return herein found reasonable is measured primarily by Pacific's cost of capital invested in its properties. Any construction cash capital needed is an element of the cost of capital and is not includible in rate base.

5/ In Decision No. 41416 dated April 6, 1948 (48 Cal PUC 1) in Application No. 28211, the Commission said "The purpose of including a working cash allowance in the rate base is to compensate the investors for capital which they have supplied to enable the company to operate efficiently and economically and for which they would not otherwise be compensated. If, through the availability and use of tax accrual moneys or other funds supplied by the subscribers, the investors are required to supply a smaller sum, their compensation should be proportionately less. This Commission has for many years recognized the effect upon working cash capital requirements of accruing taxes considerably ahead of payment."

6/ Decision No. 38638 dated January 23, 1946 in Case No. 4749, (46 CRC 304).

Plant Additions

In addition to the capital base just considered, Pacific submitted a base for 1949 on a "pro forma" basis and a capital base for 1950. Using these bases and what it considered appropriate revenues and expenses at present gas rates and oil at $1.70 per barrel, it developed a rate of return of 4.90% on its 1949 base, 4.24% for the same year using the "pro forma" basis, and 4.06% in 1950. Its "pro forma" base in 1949 is $20,140,000 greater than the regular base, all of the increase being costs of fixed capital. The increase is obtained by reflecting for the entire year certain capital items being installed during the year. Normally such items are reflected for only that portion of the year during which they are in operation. The structures so treated are gas storage holders, associated compressors and lines and a portion of the Topock-Milpitas transmission line with which little increase in sales and revenue can be associated. Pacific urges that primary consideration should be given to its showing on a "pro forma" basis in 1949 and to the 1950 estimates if its present heavy capital additions are to be given adequate consideration. The staff, although it made no specific estimates of capital additions beyond 1949, pointed out that the scheduled heavy additions of capital that will be unaccompanied by proportionate revenue growth, require recognition.

1949 Rate Base and Return

Following the customary method of developing a rate base, in which capital is reflected only for its period of operation, and giving consideration to the estimates heretofore discussed, we conclude that for 1949 an appropriate base is the sum of $199,700,000. Using the net revenue of $10,600,000 previously discussed, Pacific would realize a rate of return of about 5.3% from its Gas Department operations under its present tariffs, assuming average temperature conditions and a posted price of oil of $1.70 per barrel throughout the year.

Fair Rate of Return

Pacific asserts that a return of 6½% on its Gas Department cost rate base is fair, reasonable and necessary. Pacific has financed its investment in its plants and properties primarily through the issue of bonds, preferred stock and common stock and the use of earnings. It presented testimony showing the effective interest rate on the bonds at 3.48% and on the preferred stock at 6.04%, as of the close of 1948, while the staff in its presentation arrived at effective interest rates on the bonds ranging from 2.97% to 3.27%, depending on whether or not certain items of discount, expense and premium relating to refunded issues are taken into consideration, and on the preferred stock at 5.94%. The differences between the amounts in the two presentations, while not substantial, are accounted for primarily by the inclusion in Pacific's calculations of items relating to securities of predecessor companies and to refunded issues, some of which items were not recorded on its books and some of which, while recorded, have long since been written off by charges to income and surplus.

As to the common stock, Pacific urges that earnings of $2.87½ a share are necessary in order to enable it to do equity financing in the future. Giving consideration to estimated issues subsequent to 1948, it developed an over-all percentage of 5.89% as the weighted cost of capital represented by bonds, preferred stock and equity capital, excluding from its calculations any consideration of funds represented by its reserves for depreciation. On this basis, and upon giving consideration to its estimated financial and capital needs during the next few years, to its anticipated heavy construction program, to the necessity of a larger volume of equity financing and to other factors, it concludes that an over-all rate of return of 6.1%, an amount slightly higher than its calculated costs, is necessary to maintain its credit. It states that to realize such an over-all return it should earn not less than 6.0% in its Electric Department and 6.5% in its Gas Department.

The City of San Francisco disagreed with Pacific's rate of return contentions. In a memorandum dated March 21, 1949, filed in objection to Pacific's request for an interim rate increase, the city estimated the weighted cost of capital at 5.09%, including in its calculation depreciation reserves and equity capital based on common stock earnings of $2.50 a share and, as a result of its studies, it concluded that at that time Pacific was entitled to an increase in gross revenues of approximately $2 million annually. The city did not file a further brief following the submission of the proceeding.

The City of Oakland in its opening brief, developed the cost of capital represented by outstanding securities and surplus as of December 31, 1948, at 5.11%, and it argued that a rate of that amount would be sufficient to pay the full cost of capital, including bond interest, preferred dividends, and an 8% return on common stock equity, including the earned surplus. It asserts that a return of 5.11% applied to capital less reserves based upon 1949 operations, average temperatures and oil at $1.85, or upon Pacific's estimate with oil at $1.70, would yield rates of return of 5.87% and 5.22%, respectively. It concluded that with oil at $1.70 per barrel, Pacific would enjoy a return of 5.82%, which would meet all its operating and financial costs.

W. D. MacKay and L. H. Stewart state in their brief that a maximum rate of return of 5½% should be allowed. California Manufacturers Association stated that Pacific's revenues should be increased $2,600,000 to produce a 6% return and $4,400,000 to produce a 6½% return.

A review of the record shows that Pacific is engaged in a construction program calling for expenditures during 1949, 1950 and 1951, for all departments, of from $350 million to $400 million; that since the close of 1948 it has issued additional bonds, preferred stock and common stock to meet in part its construction program, and that with such issues its debt has risen to approximately 57% of its capital structure.

It is clear that Pacific is faced with the problem of reducing its debt ratio and of obtaining additional sums in substantial amounts from the issue of stock rather than bonds. In our opinion, it is in the public interest that earnings, so far as possible, be maintained at a level enabling the utility to service not only the outstanding securities but also those necessary to finance a reasonable expansion program. Giving full consideration to the record herein, we find that a rate of return of 5.9% on the Gas Department rate base should be allowed.

From the results heretofore shown for 1949 it is clear that present rates must be increased.

EVIDENCE ON RATE PROPOSALS

We now turn to another important aspect of the proceeding, the spread of rates. In the foregoing discussion the Commission has determined Pacific's total income requirement upon the sole basis of the cost of rendering the entire service. The portion of total cost which is to be supplied by each customer class will depend upon the relative levels of the class rates adopted. Considerable interest was manifested by the intervenors in this proceeding relating to such spread of rates.

The problems presented are not new. The Commission, when determining a reasonable rate for a particular class of service, frequently has indicated that no single formula or process has yet been devised by which it might reach an objective result. Studies made of relative costs of service by classes are valuable guides, as are studies of the relative worth to the consumer of an alternate service, but consideration must also be given to the volume, regularity, and other characteristics of customer uses with the object of permitting the utility to operate its plant facilities at maximum efficiency and thus insure the lowest reasonable rates to its customers as a whole. In addition, consideration must be given to the historical development of the existing rate structure and the impact of rate changes upon particular service areas and customer classes.

Pacific proposed a set of revised rate schedules which it contended would substantially improve the form of its present rates and at the same time raise additional revenue sufficient to provide it a fair return. The proposed schedules would have increased revenues $9,586,000 annually, of which $7,457,000 would have come from general service customers and $2,090,000 from curtailable service customers, with only minor changes in other classes of revenue.

Pacific enumerated a number of improvements in the form of the proposed tariffs over the existing tariffs. It believed the six rate zones for general service established by the Commission in 1942 and reaffirmed in 1946 should be continued, and that certain deviations from the rate zone plan then permitted should be eliminated. This proposal particularly affected customers in the Bakersfield area. Pacific not only proposed to retain the use of a price adjustment clause in its tariffs which would permit automatic changes in gas rates to be made when changes occurred in the quoted market price or "posted" price of fuel oil, but it also suggested application of this "escalation" to a greater volume of the natural gas consumption than provided for by present tariff schedules. The upward movement of present rates by reason of escalation is now limited or "stoppered" by the level of the nonescalated rates. Pacific proposed to separate the several rate levels to reestablish what it believed to be proper differentials. It proposed, however, to permit the rates to escalate only when oil prices were above a "floor" of $2 per barrel. The introduction of the floor of $2 in the fuel escalator clause as well as the use of any such escalator clause was criticized by representatives of the industrial customers and by the federal government.

Pacific also proposed to withdraw special contract rates departing from filed tariffs, which are now applicable to several military establishments and to two large industrial customers, suggesting that these customers be served on the applicable filed tariffs. A special contract with the City of Palo Alto would be continued at a higher rate. Pacific suggested a modification in the formulas now included in the present rates under which changes are made to reflect differences in the heating value of gas served in various areas.

The rate proposals contemplated the withdrawal of the commercial building heating rates which, as was pointed out, the Commission in 1946 considered too low. Pacific likewise seeks permission to withdraw the closed surplus or "GS" schedules, under which gas is sold to industrial customers on a noncontinuous basis. These schedules, which were closed early in the war to new customers or heavier consumptions, are at a level substantially below the interruptible or "GI" schedules.

The level of rates established for any particular class of service cannot be determined without full consideration of the rate level fixed for each of the other classes of service. The record in this proceeding is replete with evidence relating particularly to the claimed rate differentials that should be established between sales of gas on a curtailable service basis and those on a firm delivery basis. There is incorporated in this record by reference the entire record made in an earlier proceeding instituted upon the Commission's own motion, at the suggestion of the California Manufacturers Association, for the purpose of inquiring into the proper level of charges for large industrial gas sales on a curtailable basis. Much of the evidence before us relates to the purpose and design of the fuel oil price adjustment provisions which are now contained in such curtailable service schedules and to some portions of the firm service schedules. There is some suggestion in the record that all of such automatic rate adjustment provisions be eliminated.

The record in this proceeding compels the conclusion that an appropriate fuel oil adjustment provision should be preserved in rate schedules applicable to interruptible gas service. The level of the rate for interruptible service is dictated almost wholly by competitive fuel oil costs and other factors which control the volume and timing of the customer's use of gas. Consequently, the revenue received by the utility from that class of service does not provide the same degree of stability of net income that should reasonably be expected from its gas service as a whole. Rates for other large gas uses on a firm basis are influenced by competitive factors to a lesser extent and must be fixed at a somewhat higher level than those applicable to interruptible service. The general service rate schedules cover a class of sales which, in total number of customers, total volume of use, total revenue produced, together with the sustained demand and essential need for gas service, clearly differentiates this from other classes of gas service. Therefore, the level of rates established for general service as a whole must be such that the utility will be assured its over-all net revenue requirements after allowance is made for revenue reasonably expected from other service classifications. Heating value and rate zone differentials must be incorporated in those schedules where such provisions are appropriate.

In now considering the evidence with respect to the fixing of rates for each class of gas service in order to provide Pacific with increased revenue, it is necessary first to consider the operation of the fuel oil adjustment provisions and extent of their application. Thereafter, consideration will be given to the interruptible and other large use service schedules, and then to the rate adjustments necessary in the general service schedules.

Fuel Oil Price Adjustment Provisions

Present rates for consumptions in excess of 20,000 cubic feet per month on all schedules, except agricultural power schedules, are subject to escalation. Surplus, commercial building heating, and some special schedules also provide rate escalation for the first 20,000 cubic feet per month. The upward escalation is limited by the level of nonescalated rates and the downward escalation is limited by floors at or slightly below the base oil price.

The rates as proposed by Pacific contain a clause so worded that some or all of the rates on each schedule increase or decrease with increases or decreases in the posted price of oil above $2 per barrel, the effect of which would prevent downward escalation with changes in oil prices below $2 per barrel. This differs from the present tariff provisions which are limited by various oil prices slightly below $1 per barrel. As the price of oil declined during the course of this proceeding, estimates of the revenues produced by the proposed rates at floors below $2 were introduced. Pacific contends that use of an appropriate price floor is not only reasonable but necessary to prevent gas being sold to customers at rates below out-of-pocket costs. While urging that primary consideration be given the $2 floor, it offered no objection to a floor as low as $1.75, provided the amount of total revenue sought is left undisturbed.

Pacific justifies the proposed $2 floor, which would result in a minimum interruptible rate of about 31.5 cents per Mcf, on the basis that, historically, curtailable gas has been sold from six cents to nine cents above the cost of purchased gas, and that the estimated future cost of out-of-state gas is between 24 cents and 25 cents per Mcf. Although Texas gas will not be available until 1951, Pacific justifies the use of such a rate floor in the interim on the theory that it represents the value of the service, as measured by cost to the customer of providing the same service with an alternate fuel.

The California Manufacturers Association objects to the $2 floor and removal of the ceilings. The United States is opposed to the use of a fuel oil escalator clause, it claiming that the establishment of rates based upon the variable price of fuel oil is not proper rate regulation. W. D. MacKay and L. H. Stewart, representing several commercial and industrial customers, argue that the Commission should terminate the use of a fuel oil price adjustment provision or, if it is retained, it should remove all "ceilings" and "floors" and extend escalation to a greater amount of the consumption under 20 Mcf per month.

The Commission, in its decisions over many years, has prescribed gas service tariffs containing provisions providing for the automatic change of gas rates to reflect changes in the price of fuel oil. It has stated two purposes for which such clauses can be used. In an early proceeding[7] in which it appeared necessary to gear rates to fluctuations in operating costs, the Commission said:

> "...we deem it desirable to fix a rate that will be flexible in so far as it is affected by changes in the price of oil, and which will thereby render unnecessary repeated proceedings for adjustments in the rate."

Another purpose to which fuel price adjustments have been put is to maintain gas prices at levels competitive with other fuels to promote slack season use and, in the early days of natural gas service, to prevent actual gas wastage. This use of a fuel oil adjustment provision was before the Commission in 1936 in Cases Nos. 4138, 4149, 4150, and 4151. The Commission's decision in those proceedings recognized[8] that:

> "To a large extent and certainly as to the lower bracket schedules surplus industrial gas rates have developed under competitive conditions. The lower bracket rates are very clearly competition-forced rates."
>
> * * *
>
> "A properly constructed fuel oil clause whereby rates automatically go up or down with the price of fuel oil is, under the circumstances here shown, justifiable."

7/ Application No. 3300, Decision No. 5440 (15 CRC 776) dated May 28, 1918.
8/ Decision No. 29287 dated November 23, 1936.

The Commission is still of the opinion that an escalator clause geared to the price level of competitive fuels, when properly applied, is not only practical but is necessary. It is an appropriate mechanism to stimulate interruptible use and improve system load factor. The relative levels of competitive prices are of major consequence in determining the volume of interruptible sales. Economies resulting from such improved load factors react to the benefit of all customers.

The Commission believes it desirable, in retaining the escalator principle, that some changes be made in the form and applicability of the existing oil adjustment provision. An equitable formula should change gas rates as oil prices fluctuate above or below some convenient base within the probable future range of oil prices. For this proceeding such an oil price is considered to be a posted price of $1.50 per barrel. As oil prices depart from that base, it seems appropriate to reflect the gas-oil heating value ratio of six to one in the gas rates for a reasonable range of fluctuation which in this case is considered to be 30 cents above and below $1.50. It is likewise considered necessary to lessen the effect of oil price changes on gas revenues as gas rates approach the lower limit of the increment cost of service or before they impinge upon the higher firm industrial rates, and that this ratio should be twelve to one. The Commission believes that these limiting gas rates should correspond to posted oil prices of $1 and $2 per barrel, respectively.

Heretofore, the posted oil price for which changes in gas rates would be made were those of Standard Oil Company f.o.b. its Richmond Refinery. There have been instances where changes made by major oil companies have occurred on different dates and in some cases in different amounts. If gas rates are to be maintained fully competitive with oil prices, it seems necessary to base escalation on the lowest of the prices posted by any of the major oil companies.

Some confusion in application of escalator clause provisions followed the introduction in 1948 of two grades of fuel oil, both of which were encompassed by the description theretofore applicable to a single grade. The fuel oil price to be used in the escalator clause herein adopted will be the heaviest grade commercially adaptable to the uses for which the utility's customers use gas when available. At present that grade is commonly referred to as Bunker Fuel Oil.

The Commission concludes that the fuel oil clause adopted herein should be incorporated only in the tariffs for interruptible natural gas service, although Pacific proposed retention of such a clause in tariffs for all classes of service. A customer who selects continuous service places upon the utility an obligation to provide the service to the extent of its ability to do so at whatever costs it may incur. Consequently, rates must be established at a level sufficiently high to provide a reasonable margin of safety to the utility against fluctuations in the cost of gas which it purchases or other similar operating costs.

Interruptible Natural Gas Service

Pacific proposes a single set of interruptible service rate schedules applicable to all customers who have equipment and fuel available to supply their own needs during periods of interruption. With this proposal the Commission is in accord. Pacific suggests four zones or rate levels, designed to reflect the competitive delivered fuel oil costs in the respective areas. The Commission cannot agree with Pacific's proposed zoning of interruptible and firm industrial rates. Because of the multiplicity of sources and variations in cost of gas purchased, it must be assumed that the unit cost of production and transmission is the same at all points of delivery from the transmission system except in the Eureka area. It therefore seems proper to establish uniform system-wide industrial rates.

The California Manufacturers Association concluded on the basis of evidence presented by its witness that an average rate of 21 cents in 1949 for surplus service would be fully compensatory as contrasted to the estimated 27.9 cents under present rates at $1.70 oil and 31.5 cents proposed under the $2 floor.

The Commission believes that single system-wide series of block type base rates applicable in all territory except the Humboldt Division should be established. The rates adopted for gas having a heating value of 1100 Btu per cubic foot when the posted price is $1.50 per barrel range from an initial block of 1,000 Mcf at 27.9 cents per Mcf to a terminal rate for consumptions over 10,000 Mcf of 24 cents per Mcf. These base rates will be subject to change with changes in the posted price of fuel oil pursuant to the fuel escalator clause heretofore discussed, and changes in base rates will also reflect differences in heating value of gas served in accordance with a heating value adjustment clause. Such a schedule is designed to maintain gas rates at a level as high as competitive costs of other fuels warrant but low enough to induce a large number of industrial customers to take gas service on an interruptible basis. Since present surplus rates are somewhat below the level of the present interruptible rates and slightly below the level of the new interruptible rate, customers on the present surplus schedules, in general, will receive only minor increases while those on interruptible schedules will receive some reductions. The over-all effect on revenues of the changes resulting from the new rates is summarized in a later section.

The prescribed interruptible rate schedule will apply in the Bakersfield area. A few customers now receiving surplus service in that area under a closed schedule will pay more under the new rate. Many other customers who do not have service available under the interruptible rates will become eligible for service at a lower charge.

General Service Rates

In accordance with a plan adopted in Decision No. 36082[9] to establish average base rates uniformly applicable throughout areas of substantially equal service characteristics, present general service schedules are set up to cover six zones. Since the average heating value of the gas served may vary within individual zones because of the sources from which gas supplies are obtained, rate differentials are established on subzone schedules to reflect increment differences of 50 Btu per cubic foot in heating value.

Pacific proposes to reduce the number of blocks and to make substantial increases in the block rates of all general service schedules. It is also proposed to eliminate subzone rates applicable to Bakersfield, Biggs, Willows and certain unincorporated areas and to put customers in those areas on the basic zone rate applicable to other areas in the same zone. Escalation without stoppers for consumptions in excess of 20 Mcf per month would be retained but only for oil prices above $2 per barrel.

The City of Bakersfield opposes Pacific's plan to include Bakersfield in the same zone as Fresno and a number of other areas.

The California Manufacturers Association believes that the presently effective general service rates are too low with respect to the initial charge in view of Pacific's estimate that about $16 per customer per year was the cost incurred whether any gas is served or not. The cost is contrasted with the initial charge of the present schedules which varies from 65 cents to $1.05 per month. The Association estimates that, if the initial charge were increased enough to cover such costs, industrial rates could be reduced $4,700,000 and still permit Pacific a 6% return over-all.

9/ Dated December 29, 1942 in Cases Nos. 4621 and 4622 (44 CRC 583)

The Commission believes that the use of rate zones as a means of establishing area differentials within certain service classifications is proper and equitable. The zone classifications adopted in 1942 and considered proper in 1946 will be retained. Pacific's proposal to eliminate the Bakersfield subzone would have resulted, as the city pointed out, in sharp increases ranging from 7% to 63% above present rates. The system rate increases herein found necessary, being much less than those proposed by Pacific, permit the establishment of zone rates which if uniformly applied to Bakersfield along with other Zone 3 areas would not result in undue increases. Although the Bakersfield revenues will increase by a greater percentage, the increase in billing for average consumption in that area will be no greater than in other Zone 3 areas served gas having similar heating value. The Commission believes that the uniform application of zone rates is desirable and that such increases as are necessary to bring Bakersfield rates to the Zone 3 level are justified.

The general service rates hereinafter adopted are predicated primarily on the existing rate structure with some modifications in blocking. The Commission is of the opinion that the present zone differentials do not adequately reflect the higher cost of serving the less densely populated areas. Accordingly, the differentials between Zone 6 and Zone 1 have been increased, with appropriate adjustments in other zones. The levels of all zone rates are then moved up enough to yield the total increased revenue requirement. The amount and per cent of the resulting increases are hereinafter set forth.

<u>Firm Industrial Gas Service</u>

Service to firm industrial customers, where available under present schedules, reflects a uniform level of base rates throughout the natural gas system. No such schedules are applicable in the Bakersfield area and the Humboldt Division. The effective rates are adjusted to reflect changes in heating value and above 20 Mcf per month to reflect changes in fuel oil prices. Pacific's proposed tariffs would introduce four zone rates and would extend escalation to all consumptions. Heating value differentials would be retained with minor modifications.

Zone differentials heretofore discussed in connection with the general service rates reflect primarily the differences in customer costs and to a lesser degree the differences in distribution costs. For the reasons indicated in the discussion heretofore covering interruptible natural gas service, the rate established herein will not incorporate zone differentials. Neither will it include a fuel price adjustment clause for the reasons already discussed. So long as the rate provides changes to reflect heating value variations, block sizes and rates compatible with service volumes used in firm industrial service, minimum charges which will properly compensate for high demands and low load factors, and safeguards against uneconomic extension of the utility plant, both the customer and utility interests will be protected. The rates adopted have such advantages and their application will result in relatively minor changes in firm industrial revenues.

Gas Engine Agricultural Power Service

Natural gas service for agricultural power produced by gas engines is available throughout the system at rates which do not fluctuate with the posted price of fuel oil but which reflect heating value levels of 950-1050 and 1050-1150 Btu per cubic foot, except that a special lower rate is available in the Bakersfield area. In its application Pacific proposed to establish a single system-wide rate, retaining a heating value adjustment provision and introducing a fuel price adjustment clause. The proposed rates would result in substantial increases and for average load factors would be about 25% above the present rate.

As substantially all of the natural gas used for agricultural power service is consumed in pumping water, and since pumping demands do not in the aggregate coincide with peak gas system demands, the agricultural power load has favorable characteristics from a system operation standpoint. On the other hand, service is rendered to such customers on substantially a continuous or firm basis so that some such loads may coincide with system peaks. The alternative source of power for such customers is principally through the use of electric motors. In selecting a moderate increase in the fixed base rate level to produce a moderate increase for this class of service, without fuel oil price escalation, consideration has been given to the comparable level of both firm and interruptible industrial gas rates as well as to the cost of equivalent service under prevailing electric rate schedules.

Special Contracts

Pacific furnishes natural gas service under special contracts which contain rates and conditions differing from filed tariff provisions to the City of Palo Alto for distribution and resale by the city, to the federal government at nine of the large military installations, and to two large industries.

The contract with the City of Palo Alto, dated March 27, 1946, for service to and including February 21, 1951, and from year to year thereafter until terminated by six months' written notice, was authorized by Decision No. 39094.[10] Pacific proposed to increase the rate to Palo Alto from 24.6 cents to 31.7 cents per Mcf. Its testimony in support of the proposed increase indicates that its witness believed that Palo Alto should pay the equivalent of the firm industrial rate, which under the proposed tariffs would have been about 36.3 cents per Mcf. Palo Alto did not take issue with Pacific over its proposal. For the most part the Palo Alto load has characteristics much like the general service class of customer. The Commission believes that the

10/ Dated June 18, 1946 in Application No. 27538.

city is entitled to as low a rate as will protect Pacific's other customers from paying any of the costs properly assessable to furnish service to Palo Alto. In view of the evidence herein, and the rates being established for other classes of service, the Commission believes that the rate for service to the City of Palo Alto should be increased from 24.6 cents to 28.5 cents per Mcf.

The federal government, in behalf of its departments of Army, Navy, and Air Force, took an active part in the entire proceeding. The United States has many installations in northern California to which Pacific furnishes natural gas service. The government contends that special rate treatment should be accorded 24 military establishments, including the nine locations presently served under special contracts, primarily because the government owns, operates and maintains the distribution system within such establishments and consequently does not receive the same full service supplied to other customers. It concedes, however, that service to all other government installations can be rendered under one or more of the existing or proposed filed tariff classifications.

The government introduced factual evidence of the magnitude of the service supplied the 24 military establishments, as well as the physical location and pipe-line facilities used. It likewise presented testimony regarding the cost of supplying gas. In 1948 this group of customers received 7,634,913,000 cubic feet of available gas for which the government paid $2,706,248.

The government introduced a study, based upon 1948 operations, of the allocated cost of gas service from Pacific's transmission system. It enumerates a number of factors which it claims set the 24 military installations apart as a separate class of customer. These factors include: the higher average use; deliveries at high pressure from transmission mains or short taps connected thereto, with a consequent reduction in service imposed on Pacific's distribution network;

avoidance of costs and losses associated with distribution facilities owned, operated, and maintained by the government; and reduced billing and collecting expense because of consolidation of large scale deliveries. It compares service to the military establishments to that supplied to the City of Palo Alto, which has lower rates available under special contract. As a result of its study, the government concluded that service to the 24 military installations cost an average of 20 cents per Mcf for 1948.

While the government presentation has been of material assistance in the proceeding, we are not persuaded that the specific rate proposed as a result of its cost studies is realistic. The Commission believes that all of these services should properly be billed at the rates prescribed in the filed rate schedules. Where firm industrial or interruptible gas service is received, the firm or interruptible rates fixed herein are deemed appropriate, including the service to the San Francisco Naval Shipyard. However, a new lower rate block is established in the general service schedules to give appropriate recognition to the type of service accorded. In placing the nine special rate contract services on the rates authorized herein, the resulting increase to eight of them will be somewhat in excess of the average general service rate increase, while the San Francisco Naval Shipyard will receive some decrease in annual billing for its interruptible service.

The two industrial customers served interruptible gas under special contracts should likewise be charged at the rates set forth in the filed tariff schedules with resultant minor adjustments in charges.

<u>Heating Value Adjustments</u>

The present schedules contain provisions which adjust effective rates for differences in the heating value of the gas served. These adjustments reflect increments of 50 Btu per cubic foot. The amount of the rate change is related to the commodity cost of gas and the level of the class rate. The factor is 4% for each 50 Btu change in most of the general service schedules, 2% in certain commercial building heating rates, and 4%, 3%, or 2% in the interruptible tariffs. Pacific proposed that a uniform clause be used for all schedules. The suggested adjustment was 3% for each 50 Btu change between 1100 and 900 Btu per cubic foot and 2% for each 50 Btu below 900 Btu. We prefer to retain the present form of clause but will specify changes in the factors used. In the general service schedules adopted the factor will be 3%, and 2% in all other natural gas schedules.

Curtailment Priorities

Customer priority and curtailment procedures as applied to interruptible customers were a matter of considerable concern. Pacific's testimony indicated that, at present, customers are grouped into blocks of demand of varying sizes and that estimated system demand deficiencies are met by discontinuing service to customers in the requisite number of blocks. As far as practicable the extent of curtailment is equalized between the blocks. Such a procedure in effect gives each customer proportionately the same amount of service whether he be large or small.

Pacific's schedules presently accord superior priority to its own plants. At the hearings, however, it enunciated a policy of subordinating its own use to service to interruptible customers except where operating necessity prevents. The Commission concurs with this proposed policy with respect to steam-electric plant use priority.

Company Plant Gas Usage

Industrial customers questioned the sufficiency of the price at which Pacific accounted for consumption of gas in its own steam-electric generating plants. Comparisons were made by the parties between the characteristics of such service and that rendered to large industrial customers on an interruptible basis and to the large military installations. Attempts were made to show that the costs developed by Pacific as elements of the charge to its own plants were appropriate for application to the other customers. We cannot agree that such a conclusion is justified. However, we are confronted with the necessity of determining a reasonable interdepartmental charge inasmuch as such revenues must be reflected in the Gas Department's earning position.

The record shows that Pacific's own plants provide a more desirable type of interruptible load than do other industrial customers because, by the close control of plant operations by the gas and electric system dispatchers, fuel substitutions can be made in Pacific's own plants more rapidly than in customer plants. Its plants also provide an outlet for gas at times when other customers' demands are at a minimum. In addition, industrial customers will enjoy a priority over company plant use under the schedules adopted. The Commission concludes that a reasonable interdepartmental charge for gas used in each of Pacific's own plants should give full recognition to the factors just mentioned and, upon the evidence before us, we find that charges for company plant use computed in accordance with the applicable interruptible rates reduced by a factor of 20% are reasonable with a minimum rate equal to the cost of gas including direct transportation charges. Where operating necessity at company steam-electric and steam heat plants requires use of gas on a firm service basis, the filed tariff rates applicable to that type of service less 10% are found to be a reasonable interdepartmental charge. The effect of these conclusions is to increase the interdepartmental revenues of the Gas Department.

Conclusion

The schedules attached to the order herein contain what the Commission finds to be just and reasonable rates for all classes of natural gas service. In so far as the present schedules and rates depart therefrom, they are found to be unjust and unreasonable. In cancelling the present tariff schedules, it should be noted that no schedules are provided in the new tariffs for commercial building heating and surplus natural gas service. Customers now served on those tariffs are to be served under appropriate rates on the general service and interruptible service tariffs, respectively. With the cancellation of the surplus service tariffs, the rule closing those tariffs to new customers can be withdrawn.

The rate schedules herein prescribed require Pacific to file its revised interruptible service rates upon each change made in the posted price of fuel oil by the same procedure now provided for in its existing tariffs. Such revised schedules shall be based upon the full escalation resulting from the oil price change unless application is made and granted for a deviation therefrom. Whether the revised schedules result in increased or decreased rates, the Commission may make an order thereon of suspension and investigation if good cause appears.

The following table shows the estimated natural gas revenues under present rates and under the rates now authorized, and in each instance the price of oil is assumed to be $1.70 per barrel for the estimated average year 1949. The resulting increased revenues in amount and percentage are shown for each of the major service classifications.

Authorized Service Classification	Revenue - Thousands of Dollars: At Present Rates	At Authorized Rates	Authorized Increase: Amount	Per Cent
General Service	$47,166	$50,464	$3,300	7.0%
Firm Industrial	2,198	2,112	(86)	(3.9)
Interruptible	17,143	17,207	64	0.4
Resale	247	286	39	15.8
Total Sales to Customers	66,754	70,069	3,317	5.0
Interdepartmental	3,582	4,261	679	19.0
Total Natural Gas Sales	70,336	74,330	3,996	5.7

(Red Figure)

The over-all increase provided is approximately $4,000,000 as shown by the foregoing table for rates in effect with oil at $1.70 per barrel. As heretofore noted the posted price of fuel oil declined to $1.35 per barrel effective September 1, 1949. The effect of that oil price change is to reduce gross revenues, effective October 1, from natural gas customers and interdepartmental charges shown in the above table by approximately $4,450,000, thus reducing the natural gas revenues from $70,336,000 to $65,886,000. The effect of the rates herein prescribed, when related to the newly filed tariffs based on oil at $1.35, will still yield added revenues of $4,000,000 a year for the Gas Department, although the resultant increase above present rates with fuel oil at $1.35 per barrel will be somewhat different, being larger in the firm sales classification and less in the interdepartmental charges. The reduction in gross revenue resulting from the oil price change to $1.35 per barrel will not materially change Pacific's net revenue because, as the record indicates, its costs of purchased gas will decline about $4,211,000. Such variations are inherent in the operation of the fuel oil escalator clause and are contemplated in the rates set forth.

The reasonableness of Pacific's net earnings at the rates here authorized must be tested against a rate base considerably in excess of that hereinabove adopted for the year 1949, for the record shows that by the end of this year its plant capital will increase by at least $20,000,000 without corresponding revenue growth, and that further large plant additions of the same nature will be made in 1950. Pacific's net earnings under the prescribed rates will yield not less than the 5.9% rate of return herein found to be justified, upon a rate base augmented for such plant additions only to the extent of $20,140,000.

Reference should here be made to certain pending complaint proceedings raising issues identical with those raised in the instant application and here decided, namely: Case No. 4937, an investigation by the Commission into the operation of the fuel oil clauses in Pacific's gas schedules; and Case No. 4995, the complaint of California Manufacturers Association concerning Pacific's gas rates for industrial service. Those matters may now be dismissed.

ORDER

Pacific Gas and Electric Company having applied to this Commission for an order authorizing certain increases in rates and charges, public hearings having been held, the matter having been submitted for decision upon the filing of reply briefs and the Commission being fully advised in the premises,

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

IT IS HEREBY ORDERED as follows:

1. Applicant is authorized and directed to file the schedule of rates shown in Exhibit A attached hereto on or after the effective date hereof and, not less than five (5) days thereafter, to make said rates effective for service rendered during billing periods ending on and after November 28, 1949; said filing to be by advice letter, in quadruplicate, and in conformity with the Commission's General Order No. 96.

2. Applicant is authorized and directed to cancel, concurrently by said advice letter, its presently effective tariff sheets applicable to Commercial Building Heating Service and Surplus Natural Gas Service, together with its Emergency Rule and Regulation A-4.

3. Applicant is authorized and directed to apply and charge the rates provided in the schedules set forth in Exhibit A attached hereto, in accordance with the first ordering paragraph above, for service rendered to any customer receiving gas service under a special rate contract, other than with the City of Palo Alto, and under its special contract with the City of Palo Alto shall charge the rate of 28½ cents per Mcf for all gas supplied.

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

Dated at San Francisco, California, this 4th day of October, 1949.

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

LIST OF WITNESSES

Evidence was presented on behalf of applicant by E. J. Beckett (finances and capital structure, working cash, fair rate of return), J. S. Moulton (economic outlook, rate of return, policies of operation), Rudolph Jenny (scope of operations, rates), G. M. Thomas (cost of properties plus working capital, operating expenses, depreciation annuity, taxes other than income, rate of return), E. J. Lage (material prices and wages), L. N. Knapp (materials and supplies), John W. Ellis (customers, sales and revenues, temperature adjustment), Philip E. Beckman and Noel H. Neel (cost of gas), E. W. Hodges (administrative and general expenses, uncollectibles, trend of earnings), R. S. Fuller (maintenance expenses), K. C. Christenson (income taxes), L. A. Reynolds (cost of money), Richard T. Peterson (gas availability, curtailment procedure), J. F. Brennan (statistical analysis).

Evidence was presented by Oliver O. Rands, Lewis A. Todd and DeWolfe H. Miller (rates and service areas of military installations), and Clarence A. Winder (cost of service), on behalf of the United States Government; by Edwin Fleischmann for California Manufacturers Association (rate changes, cost of service); and by William D. MacKay for other parties (gas reserves).

Evidence was presented on behalf of the Commission's staff by Lloyd E. Cooper (operating expenses, depreciation annuity), Charles W. Mors (rate of return, working cash), Chesley G. Ferguson and Joseph Waithman (rate base), C. V. Shawler (financial statements, reserves for depreciation and amortization), H. R. Ross (revenues, sales, customers, cost of gas), John J. Doran, Jr. (administrative and general expenses), Donald C. Neill (taxes), G. B. Weck (depreciation reserve), and Frank F. Watters (temperature adjustment).

A-29777 *
AGE

Schedule No. G-1

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to domestic, commercial, industrial or other customers for gas used for cooking, water heating, space heating and all other purposes at the option of the customer.

TERRITORY

A-(1100 Btu)

Within the incorporated city limits of San Francisco and Daly City; also, the built-up unincorporated areas of Bayshore (3) and Daly City Suburban (57) as more fully described under the reference numbers in Description of Special Rate Areas.

RATES

Commodity Charge	Per Customer Per Month Base Rates 1100 Btu	Per Customer Per Month Effective Rates A 1100 Btu
First 200 cu.ft. or less:		
Incorporated territory...........	$0.65	$0.65
Unincorporated territory.........	$0.75	$0.75
Next 2,300 cu.ft., per 100 cu.ft............	3.93¢	3.93¢
Next 17,500 cu.ft., per 100 cu.ft............	3.82¢	3.82¢
Next 80,000 cu.ft., per 100 cu.ft............	3.75¢	3.75¢
Next 4,900,000 cu.ft., per 100 cu.ft............	3.70¢	3.70¢
Over 5,000,000 cu.ft., per 100 cu.ft............	3.60¢	3.60¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu.ft. or less..........................	The commodity charge for the first 200 cu.ft. or less
Over 400,000 cu.ft. to 800,000 cu.ft........	$40.00
Over 800,000 cu.ft..........................	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

Schedule No. G-2

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to domestic, commercial, industrial or other customers for gas used for cooking, water heating, space heating and all other purposes at the option of the customer.

TERRITORY

B - (1050 Btu)

Within the incorporated city limits of Alameda, Albany, Berkeley, Emeryville, Oakland, San Leandro and Piedmont; also, the built-up unincorporated area of Kensington Park (18) as more fully described under the reference number in Description of Special Rate Areas.

C - (1000 Btu)

Within the incorporated city limits of Sacramento; also, the built-up unincorporated area of Sacramento City Suburban North Area (35) and Sacramento City Suburban South Area (36) as more fully described under the reference numbers in Description of Special Rate Areas.

RATES

		Per Customer Per Month		
Commodity Charge		Base Rates	Effective Rates B	Effective Rates C
		1100 Btu	1050 Btu	1000 Btu
First	200 cu. ft. or less:			
	Incorporated territory..................	$0.70	$0.70	$0.70
	Unincorporated territory................	$0.80	$0.80	$0.80
Next	2,300 cu. ft., per 100 cu. ft...	4.12¢	4.00¢	3.87¢
Next	17,500 cu. ft., per 100 cu. ft...	4.00¢	3.88¢	3.76¢
Next	80,000 cu. ft., per 100 cu. ft...	3.75¢	3.64¢	3.52¢
Next	4,900,000 cu. ft., per 100 cu. ft...	3.70¢	3.59¢	3.48¢
Over	5,000,000 cu. ft., per 100 cu. ft...	3.60¢	3.49¢	3.38¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu. ft. or less	The commodity charge for the first 200 cu. ft. or less.
Over 400,000 cu. ft. to 800,000 cu. ft.......	$40.00
Over 800,000 cu. ft..........................	$80.00

(Continued)

Schedule No. G-2

GENERAL NATURAL GAS SERVICE
(Continued)

RATES (Continued)

Minimum Charge (Continued)

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

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Schedule No. G-3

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to domestic, commercial, industrial or other customers for gas used for cooking, water heating, space heating, and all other purposes at the option of the customer.

TERRITORY

A-(1100 Btu)

Within the incorporated city limits of Atherton, Belmont, Burlingame, Hillsborough, Menlo Park, Millbrae, Redwood City, San Bruno, San Carlos, San Jose, San Mateo, and South San Francisco; also, the built-up unincorporated areas of Atherton Suburban (2), East San Jose (13), Lomita Park (21), North Palo Alto (31), Redwood City Suburban South Area (33), San Jose Suburban Burbank-Sunol Area (38), and San Jose Suburban Lincoln Glen (40) as more fully described under the reference numbers in Description of Special Rate Areas.

B-(1050 Btu)

Within the incorporated city limits of Bakersfield, El Cerrito, Fresno, Hayward, Richmond and San Pablo; the built-up unincorporated areas of Calwa (7), Fresno Suburban Northeast Area (15), Fresno Suburban Northwest Area (16), Richmond Annex Addition (34), San Leandro-Hayward Suburban (41), San Pablo Suburban (42), and South Hayward Suburban (46) as more fully described under the reference numbers in Description of Special Rate Areas; also, all unincorporated territory served from the Bakersfield distribution system, and the balance of the unincorporated territory, outside the Special Rate Areas, supplied from the Fresno distribution system.

C-(1000 Btu)

Within the incorporated city limits of Stockton and the built-up unincorporated areas of Stockton Suburban East Area (48), Stockton Suburban Northwest Area (49), Stockton Suburban South Area (50) and Stockton Suburban Southwest Area (51) as more fully described under the reference numbers in Description of Special Rate Areas.

RATES

Commodity Charge		Per Customer Per Month			
		Base Rates	Effective Rates A	Effective Rates B	Effective Rates C
		1100 Btu	1100 Btu	1050 Btu	1000 Btu
First	200 cu.ft. or less:				
	Incorporated territory..	$0.75	$0.75	$0.75	$0.75
	Unincorporated territory	$0.85	$0.85	$0.85	$0.85
Next	2,300 cu.ft., per 100 cu.ft....	4.43¢	4.43¢	4.30¢	4.16¢
Next	17,500 cu.ft., per 100 cu.ft...	4.19¢	4.19¢	4.06¢	3.94¢
Next	80,000 cu.ft., per 100 cu.ft...	3.85¢	3.85¢	3.73¢	3.62¢
Next	4,900,000 cu.ft., per 100 cu.ft...	3.80¢	3.80¢	3.69¢	3.57¢
Over	5,000,000 cu.ft., per 100 cu.ft...	3.60¢	3.60¢	3.49¢	3.38¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

(continued)

Schedule No. G-3

GENERAL NATURAL GAS SERVICE
(continued)

RATES (continued)

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu.ft. or less........................	The commodity charge for the first 200 cu.ft. or less
Over 400,000 cu.ft. to 800,000 cu.ft..........	$40.00
Over 800,000 cu.ft............................	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

Schedule No. G-4

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to domestic, commercial, industrial or other customers for gas used for cooking, water heating, space heating, and all other purposes at the option of the customer.

TERRITORY

A - (1100 Btu)

Within the incorporated city limits of Carmel, Los Gatos, Monterey, Mountain View, Pacific Grove, Salinas, Santa Clara, Sunnyvale and Tracy; also, the built-up unincorporated areas of Alisal (1), Carmel Suburban South Area (9), Mountain View Suburban (27), Salinas Suburban North Area (37), and Seaside (45) as more fully described under the reference numbers in Description of Special Rate Areas.

B - (1050 Btu)

Within the incorporated city limits of Madera, Merced, Mill Valley, Napa, Petaluma, San Anselmo, San Rafael, Santa Rosa and Vallejo; also, the built-up unincorporated areas of Merced Suburban East Area (23), Napa Suburban North Area (28), Santa Rosa Suburban Northeast Area (43), Santa Rosa Suburban Southwest Area (44) and Vallejo Suburban (53) as more fully described under the reference numbers in Description of Special Rate Areas.

C - (1000 Btu)

Within the incorporated city limits of Lodi, Marysville, Modesto, Roseville, Turlock, Woodland and Yuba City; also, the built-up unincorporated areas of Marysville Suburban Linda-Olivehurst (22), Modesto Suburban East Area (25) and Modesto Suburban West Area (26) as more fully described under the reference numbers in Description of Special Rate Areas.

E - (900 Btu)

Within the incorporated city limits of Chico; also, the built-up unincorporated area of Chico Suburban (11) as more fully described under the reference number in Description of Special Rate Areas.

RATES

Commodity Charge	Per Customer Per Month				
	Base Rates	Effective Rates			
		A	B	C	E
	1100 Btu	1100 Btu	1050 Btu	1000 Btu	900 Btu
First 200 cu.ft. or less:					
Incorporated territory......	$0.80	$0.80	$0.80	$0.80	$0.80
Unincorporated territory....	$0.90	$0.90	$0.90	$0.90	$0.90
Next 2,300 cu.ft./100 cu.ft..	4.80¢	4.80¢	4.66¢	4.51¢	4.22¢
Next 17,500 cu.ft./100 cu.ft..	4.40¢	4.40¢	4.27¢	4.14¢	3.87¢
Next 80,000 cu.ft./100 cu.ft..	3.95¢	3.95¢	3.83¢	3.71¢	3.48¢
Next 4,900,000 cu.ft./100 cu.ft..	3.90¢	3.90¢	3.78¢	3.67¢	3.43¢
Over 5,000,000 cu.ft./100 cu.ft..	3.60¢	3.60¢	3.49¢	3.38¢	3.17¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

(Continued)

Schedule No. G-4

GENERAL NATURAL GAS SERVICE
(Continued)

RATES (Continued)

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu. ft. or less....................	The commodity charge for the first 200 cu.ft. or less
Over 400,000 cu.ft. to 800,000 cu.ft.......	$40.00
Over 800,000 cu.ft........................	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

Schedule No. G-5

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to domestic, commercial, industrial or other customers for gas used for cooking, water heating, space heating, and all other purposes at the option of the customer.

TERRITORY

A - (1100 Btu)

Within the incorporated city limits of Alviso, Colma, Newman and Patterson; also, the built-up unincorporated areas of Brisbane (4), Campbell (8), Monte Vista (55) and Saratoga (56) as more fully described under the reference numbers in Description of Special Rate Areas.

B - (1050 Btu)

Within the incorporated city limits of Atwater, Belvedere, Benicia, Calistoga, Chowchilla, Corte Madera, Fairfax, Fairfield, Fowler, Galt, Healdsburg, Isleton, Larkspur, Livermore, Livingston, Pleasanton, Rio Vista, Ross, Sanger, Sausalito, Sebastopol, Selma, Sonoma, St. Helena, Suisun and Vacaville; also, the built-up unincorporated areas of Centerville (10), Decoto (12), Kentfield (19), Newark (29), Niles (30) and Tiburon (52) as more fully described under the reference numbers in Description of Special Rate Areas.

C - (1000 Btu)

Within the incorporated city limits of Ceres, Colusa, Davis, Dixon, Gridley, Lincoln, Live Oak, Manteca, North Sacramento, Oakdale, Ripon, Riverbank and Wheatland; also, the built-up unincorporated areas of Broderick (5), Bryte (6), Escalon (14), Gardenland (17), Hughson (54) and North Sacramento Suburban East Area (32) as more fully described under the reference numbers in Description of Special Rate Areas.

D - (950 Btu)

Within the incorporated city limits of Kerman.

E - (900 Btu)

Within the incorporated city limits of Willows.

F - (850 Btu)

Within the incorporated city limits of Biggs and Oroville; also, in the built-up unincorporated area of South Oroville (47) as more fully described under the reference number in Description of Special Rate Areas.

(Continued)

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Schedule No. G-5

GENERAL NATURAL GAS SERVICE
(Continued)

RATES

Commodity Charge	Base Rates	Per Customer Per Month — Effective Rates					
		A	B	C	D	E	F
	1100 Btu	1100 Btu	1050 Btu	1000 Btu	950 Btu	900 Btu	850 Btu
First 200 cu. ft. or less:							
Incorporated territory	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85
Unincorporated territory	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95	$0.95
Next 2,300 cu.ft., per 100 cu.ft.	5.20¢	5.20¢	5.04¢	4.89¢	4.73¢	4.58¢	4.42¢
Next 17,500 cu.ft., per 100 cu.ft.	4.65¢	4.65¢	4.51¢	4.37¢	4.23¢	4.09¢	3.95¢
Next 80,000 cu.ft., per 100 cu.ft.	4.05¢	4.05¢	3.93¢	3.81¢	3.69¢	3.56¢	3.44¢
Next 4,900,000 cu.ft., per 100 cu.ft.	4.00¢	4.00¢	3.88¢	3.76¢	3.64¢	3.52¢	3.40¢
Over 5,000,000 cu.ft., per 100 cu.ft.	3.60¢	3.60¢	3.49¢	3.38¢	3.28¢	3.17¢	3.06¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu.ft. or less..........................	The commodity charge for the first 200 cu.ft. or less.
Over 400,000 cu.ft. to 800,000 cu.ft........	$40.00
Over 800,000 cu.ft............................	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

Schedule No. G-6

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to domestic, commercial, industrial, or other customers for gas used for cooking, water heating, space heating and all other purposes at the option of the customer.

TERRITORY

All unincorporated territory not provided for in other rate schedules, as follows:

A - (1100 Btu)

Coast Valleys, San Jose and San Francisco Divisions. Portion of Stockton Division supplied from Stanpac transmission line and Tracy distribution system.

B - (1050 Btu)

San Joaquin Power Division, except area supplied from Gill Ranch Gas Field transmission line including Kerman tap line. East Bay and North Bay Divisions. Portion of Stockton Division supplied from the transmission line between Tracy Gas Field and Tracy terminal. Portions of Stockton and Sacramento Divisions supplied from: transmission lines from Rio Vista Gas Field to Las Vinas and the Calaveras Cement Plant, to Antioch gas terminal, to Rio Vista Y (junction of lines 220,210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line between Las Vinas metering station and its junction with Thornton Gas Field line.

C - (1000 Btu)

Portion of Stockton Division supplied from Sacramento-Vernalis transmission line between Vernalis and Las Vinas metering stations and north of its junction with Thornton Gas Field line. Sacramento Division, except area supplied from: transmission lines from Rio Vista Gas Field to Las Vinas, to Antioch gas terminal, and to Rio Vista Y (junction of lines 200, 210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line south from its junction with Thornton Gas Field line. Placer District of Drum Division. Colgate Division, except area supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line.

D - (950 Btu)

Portion of San Joaquin Power Division supplied from Gill Ranch Gas Field transmission line including Kerman tap line. Portion of Stockton Division supplied from transmission line 110 and from the transmission line between McDonald Island Gas Field and Tracy terminal.

E - (900 Btu)

De Sabla Division, except area supplied from Marysville-Chico transmission line south of its junction with Ord Bend Gas Field transmission line.

F - (850 Btu)

Portions of Colgate and De Sabla Divisions supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line to its junction with Ord Bend Gas Field transmission line.

(Continued)

Schedule No. G-6

GENERAL NATURAL GAS SERVICE
(Continued)

RATES

Commodity Charge

			Base Rates	Per Customer Per Month Effective Rates					
			1100 Btu	A 1100 Btu	B 1050 Btu	C 1000 Btu	D 950 Btu	E 900 Btu	F 850 Btu
First	200	cu.ft.or less	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05	$1.05
Next	2,300	cu.ft./100 cu.ft.	5.60¢	5.60¢	5.43¢	5.26¢	5.10¢	4.93¢	4.76¢
Next	17,500	cu.ft./100 cu.ft.	4.90¢	4.90¢	4.75¢	4.61¢	4.46¢	4.31¢	4.16¢
Next	80,000	cu.ft./100 cu.ft.	4.15¢	4.15¢	4.03¢	3.90¢	3.78¢	3.65¢	3.53¢
Next	4,900,000	cu.ft./100 cu.ft.	4.10¢	4.10¢	3.98¢	3.85¢	3.73¢	3.61¢	3.48¢
Over	5,000,000	cu.ft./100 cu.ft.	3.60¢	3.60¢	3.49¢	3.38¢	3.28¢	3.17¢	3.06¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu.ft. or less........................	The commodity charge for the first 200 cu.ft. or less
Over 400,000 cu.ft. to 800,000 cu.ft.........	$40.00
Over 800,000 cu.ft............................	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for correspondong months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

Schedule No. G-6.2

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service of a heating value of 650 to 775 Btu per cubic foot to domestic, commercial, industrial or other customers for gas used for cooking, water heating, space heating and all other purposes at the option of the customer. Service under this schedule is subject to termination as provided for in special conditions below.

TERRITORY

I-(700 Btu)

Unincorporated territory in portion of Stockton Division supplied from the transmission lines between Lodi Gas Field and Las Vinas.

RATES

Commodity Charge		Per Customer Per Month	
		Base Rates	Effective Rates I
		1100 Btu	700 Btu
First	200 cu.ft. or less	$1.05	$1.05
Next	2,300 cu.ft., per 100 cu.ft.	5.60¢	4.42¢
Next	17,500 cu.ft., per 100 cu.ft.	4.90¢	3.87¢
Next	80,000 cu.ft., per 100 cu.ft.	4.15¢	3.28¢
Next	4,900,000 cu.ft., per 100 cu.ft.	4.10¢	3.24¢
Over	5,000,000 cu.ft., per 100 cu.ft.	3.60¢	2.84¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu.ft. or less	The commodity charge for the first 200 cu.ft. or less
Over 400,000 cu.ft. to 800,000 cu. ft.	$40.00
Over 800,000 cu.ft.	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

(continued)

Schedule No. G-6.2

GENERAL NATURAL GAS SERVICE
(continued)

SPECIAL CONDITIONS

1. A contract will be required for a period of one (1) year when service is first rendered and thereafter until cancelled by either party by written notice thirty (30) days in advance of the date service is to be terminated. Such contract must be on one of the standard forms of the company regularly filed with the California Public Utilities Commission, in force at the time and applicable to service under this schedule.

2. Service under this schedule will be rendered only so long as the company shall continue to use its collection and transmission lines from Lodi Gas Field to Las Vinas metering station. The company shall have the right to terminate gas service hereunder as provided for in 1 above in the event it shall at any time discontinue the use of said collection and transmission lines.

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EL

Schedule No. G-10

GENERAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to domestic, commercial, industrial or other customers for gas used for cooking, water heating, space heating, and all other purposes at the option of the customer.

TERRITORY

B-(1050 Btu)

Within the incorporated city limits of Arcata, Eureka and Fortuna, and all unincorporated territory in Humboldt Division served from Tomkins Hill Gas Field.

RATES

Commodity Charge	Per Customer Per Month Base Rates 1100 Btu	Effective Rates B 1050 Btu
First 200 cubic feet or less:		
Incorporated territory	$0.85	$0.85
Unincorporated territory	$1.05	$1.05
Next 2,300 cubic feet, per 100 cubic feet ...	9.42¢	9.14¢
Next 17,500 cubic feet, per 100 cubic feet ...	5.85¢	5.67¢
Next 80,000 cubic feet, per 100 cubic feet ...	5.65¢	5.48¢
Over 100,000 cubic feet, per 100 cubic feet ...	5.44¢	5.28¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
400,000 cu. ft. or less..........................	The commodity charge for the first 200 cu. ft. or less
Over 400,000 cu. ft. to 800,000 cu. ft.	$40.00
Over 800,000 cu. ft..............................	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

Schedule No. G-40

FIRM INDUSTRIAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to industrial establishments for gas used for all purposes at the option of the customer, except directly for the cooking of meals, where such establishments are located along existing mains having a delivery capacity in excess of the then existing requirements of firm customers.

TERRITORY

The entire territory served natural gas by the company, except Humboldt Division and portion of Stockton Division supplied from the transmission lines between Lodi Gas Field and Las Vinas, as follows:

A-(1100 Btu)

Coast Valleys, San Jose and San Francisco Divisions. Portion of Stockton Division supplied from Stanpac transmission line and Tracy distribution system.

B-(1050 Btu)

San Joaquin Power Division, except area supplied from Gill Ranch Gas Field transmission line including Kerman tap line. East Bay and North Bay Divisions. Portion of Stockton Division supplied from the transmission line between Tracy Gas Field and Tracy terminal. Portions of Stockton and Sacramento Divisions supplied from: transmission lines from Rio Vista Gas Field to Las Vinas and the Calaveras Cement Plant, to Antioch gas terminal, to Rio Vista Y (junction of lines 200, 210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line between Las Vinas metering station and its junction with Thornton Gas Field line.

C-(1000 Btu)

Portion of Stockton Division supplied from Sacramento-Vernalis transmission line between Vernalis and Las Vinas metering stations and north of its junction with Thornton Gas Field line. Sacramento Division, except area supplied from: transmission lines from Rio Vista Gas Field to Las Vinas, to Antioch gas terminal, and to Rio Vista Y (junction of lines 200, 210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line south from its junction with Thornton Gas Field line. Placer District of Drum Division. Colgate Division, except area supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line.

D-(950 Btu)

Portion of San Joaquin Power Division supplied from Gill Ranch Gas Field transmission line including Kerman tap line. Portion of Stockton Division supplied from transmission line 110 and from the transmission line between McDonald Island Gas Field and Tracy terminal.

E-(900 Btu)

De Sabla Division, except area supplied from Marysville-Chico transmission line south of its junction with Ord Bend Gas Field transmission line.

(continued)

Schedule No. G-40

FIRM INDUSTRIAL NATURAL GAS SERVICE
(continued)

TERRITORY (continued)

F-(850 Btu)

Portions of Colgate and De Sabla Divisions supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line to its junction with Ord Bend Gas Field transmission line.

RATES

Commodity Charge	Base Rates	Per Customer Per Month Effective Rates					
		A	B	C	D	E	F
	1100 Btu	1100 Btu	1050 Btu	1000 Btu	950 Btu	900 Btu	850 Btu
First 100 Mcf, per Mcf.....	36.0¢	36.0¢	35.3¢	34.6¢	33.8¢	33.1¢	32.4¢
Next 900 Mcf, per Mcf.....	35.0¢	35.0¢	34.3¢	33.6¢	32.9¢	32.2¢	31.5¢
Next 2,000 Mcf, per Mcf.....	34.0¢	34.0¢	33.3¢	32.6¢	32.0¢	31.3¢	30.6¢
Over 3,000 Mcf, per Mcf.....	33.0¢	33.0¢	32.3¢	31.7¢	31.0¢	30.4¢	29.7¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C).

Minimum Charge

The minimum charge specified below corresponding to the maximum consumption in any billing month of the full year ending the preceding June 30th.

Maximum Billing Month Consumption	Minimum Charge Per Customer Per Month
800,000 cu. ft. or less.	$40.00
Over 800,000 cu. ft.	$80.00

Whenever premises were not served for the full year ending the preceding June 30th or whenever substantial changes (100% or greater for corresponding months) are made in the gas consumption, the company may estimate the maximum billing month consumption.

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Schedule No. G-45

GAS ENGINE AGRICULTURAL NATURAL GAS SERVICE

APPLICABILITY

Applicable for natural gas service to internal combustion engines used for agricultural purposes where such installations are located along existing mains having a delivery capacity in excess of the then existing requirements of firm customers.

TERRITORY

The entire territory served natural gas by the company, except Humboldt Division and portion of Stockton Division supplied from the transmission lines between Lodi Gas Field and Las Vinas, as follows:

A-(1100 Btu)

Coast Valleys, San Jose and San Francisco Divisions. Portion of Stockton Division supplied from Stanpac transmission line and Tracy distribution system.

B-(1050 Btu)

San Joaquin Power Division, except area supplied from Gill Ranch Gas Field transmission line including Kerman tap line. East Bay and North Bay Divisions. Portion of Stockton Division supplied from the transmission line between Tracy Gas Field and Tracy terminal. Portions of Stockton and Sacramento Divisions supplied from: transmission lines from Rio Vista Gas Field to Las Vinas and the Calaveras Cement Plant, to Antioch gas terminal, to Rio Vista Y (junction of lines 200, 210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line between Las Vinas metering station and its junction with Thornton Gas Field line.

C-(1000 Btu)

Portion of Stockton Division supplied from Sacramento-Vernalis transmission line between Vernalis and Las Vinas metering stations and north of its junction with Thornton Gas Field line. Sacramento Division, except area supplied from: transmission lines from Rio Vista Gas Field to Las Vinas, to Antioch gas terminal, and to Rio Vista Y (junction of lines 200, 210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line south from its junction with Thornton Gas Field line. Placer District of Drum Division. Colgate Division, except area supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line.

D-(950 Btu)

Portion of San Joaquin Power Division supplied from Gill Ranch Gas Field transmission line including Kerman tap line. Portion of Stockton Division supplied from transmission line 110 and from the transmission line between McDonald Island Gas Field and Tracy terminal.

E-(900 Btu)

De Sabla Division, except area supplied from Marysville-Chico transmission line south of its junction with Ord Bend Gas Field transmission line.

(continued)

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ACE

Schedule No. G-45

GAS ENGINE AGRICULTURAL NATURAL GAS SERVICE

(continued)

TERRITORY (continued)

F-(850 Btu)

Portions of Colgate and De Sabla Divisions supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line to its junction with Ord Bend Gas Field transmission line.

RATES

Commodity Charge	Base Rates	Per Meter Per Year Effective Rates					
		A	B	C	D	E	F
	1100 Btu	1100 Btu	1050 Btu	1000 Btu	950 Btu	900 Btu	850 Btu
First 14 Mcf, per hp, per Mcf...	37.0¢	37.0¢	36.3¢	35.5¢	34.8¢	34.0¢	33.3¢
Next 14 Mcf, per hp, per Mcf...	29.5¢	29.5¢	28.9¢	28.3¢	27.7¢	27.1¢	26.6¢
Over 28 Mcf, per hp, per Mcf...	25.0¢	25.0¢	24.5¢	24.0¢	23.5¢	23.0¢	22.5¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulations No. 2(C).

Minimum Charge

May to October, inclusive	$5.00 per meter per month
November to April, inclusive	$1.00 per meter per month

Minimum charges for twelve months' continuous service are accumulative at the rate of $36 per meter per year.

SPECIAL CONDITIONS

1. For the purpose of this schedule, the horsepower of engine capacity will be determined by the manufacturers' rating, or at the option of the company, by test or estimate.

2. Under this schedule, the agricultural or service year shall commence with the regular meter reading in April and end with the regular meter reading taken in April of the succeeding year.

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ACE

Schedule No. G-50

INTERRUPTIBLE NATURAL GAS SERVICE

APPLICABILITY

Applicable, subject to interruptions in supply as provided in special conditions below, for natural gas service to commercial and industrial establishments for gas used for all purposes at the option of the customer, except directly for the cooking of meals, where such establishments are located along existing mains having a delivery capacity in excess of the then existing requirements of firm customers.

TERRITORY

The entire territory served natural gas by the company, except Humboldt Division and portion of Stockton Division supplied from the transmission lines between Lodi Gas Field and Las Vinas, as follows:

A-(1100 Btu)

Coast Valleys, San Jose and San Francisco Divisions. Portion of Stockton Division supplied from Stanpac transmission line and Tracy distribution system.

B-(1050 Btu)

San Joaquin Power Division, except area supplied from Gill Ranch Gas Field transmission line including Kerman tap line. East Bay and North Bay Divisions. Portion of Stockton Division supplied from the transmission line between Tracy Gas Field and Tracy terminal. Portions of Stockton and Sacramento Divisions supplied from: transmission lines from Rio Vista Gas Field to Las Vinas and the Calaveras Cement Plant, to Antioch gas terminal, to Rio Vista Y (junction of lines 200, 210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line between Las Vinas metering station and its junction with Thornton Gas Field line.

C-(1000 Btu)

Portion of Stockton Division supplied from Sacramento-Vernalis transmission line between Vernalis and Las Vinas metering stations and north of its junction with Thornton Gas Field line. Sacramento Division, except area supplied from: transmission lines from Rio Vista Gas Field to Las Vinas, to Antioch gas terminal, and to Rio Vista Y (junction of lines 200, 210 and 220) and westward to beyond Fairfield and including Vacaville tap line; and, Sacramento-Vernalis transmission line south from its junction with Thornton Gas Field line. Placer District of Drum Division. Colgate Division, except area supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line.

D-(950 Btu)

Portion of San Joaquin Power Division supplied from Gill Ranch Gas Field transmission line including Kerman tap line. Portion of Stockton Division supplied from transmission line 110 and from the transmission line between McDonald Island Gas Field and Tracy terminal.

E-(900 Btu)

De Sabla Division, except area supplied from Marysville-Chico transmission line south of its junction with Ord Bend Gas Field transmission line.

(continued)

Schedule No. G-50

INTERRUPTIBLE NATURAL GAS SERVICE
(continued)

TERRITORY (continued)

F-(850 Btu)

Portions of Colgate and De Sabla Divisions supplied from Marysville-Chico transmission line north from immediately south of its junction with Biggs tap line to its junction with Ord Bend Gas Field transmission line.

RATES

Commodity Charge	Base Rates Fuel Oil $1.50 per Bbl. 1100 Btu	Per Customer Per Month Effective Rates A 1100 Btu	B 1050 Btu	C 1000 Btu	D 950 Btu	E 900 Btu	F 850 Btu
First 1,000 Mcf, per Mcf...	27.9¢	25.4¢	24.8¢	24.3¢	23.7¢	23.2¢	22.6¢
Next 2,000 Mcf, per Mcf...	27.0¢	24.5¢	24.0¢	23.4¢	22.9¢	22.3¢	21.8¢
Next 3,000 Mcf, per Mcf...	26.0¢	23.5¢	23.0¢	22.5¢	21.9¢	21.4¢	20.9¢
Next 4,000 Mcf, per Mcf...	25.0¢	22.5¢	22.0¢	21.5¢	21.0¢	20.5¢	20.0¢
Over 10,000 Mcf, per Mcf...	24.0¢	21.5¢	21.0¢	20.5¢	20.1¢	19.6¢	19.1¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C), and a posted price of fuel oil of $1.35 per barrel as set forth in Special Condition 1 below.

Minimum Charge

$80 per customer per month, accumulative annually.

SPECIAL CONDITIONS

1. The rates in effect at any time vary with the market price of fuel oil in tank car lots as regularly quoted or "posted" either by the Standard Oil Company of California f.o.b. its Richmond Refinery, or by the Union Oil Company of California f.o.b. its Oleum Refinery, or by the Shell Oil Company, Inc., f.o.b. its Martinez Refinery, or by the Tide Water Associated Oil Company f.o.b. its Avon Refinery, whichever posted price is the lowest, and shall be determined from the base rates by deducting or adding, respectively, 1¢ for each 6¢ that such price of oil is below or above $1.50 per barrel from $1.20 to $1.80 per barrel, both inclusive, and further by deducting or adding, respectively, 1¢ for each 12¢ that such price of oil is below $1.20 or above $1.80 per barrel, within the limits of $1.00 and $2.00 per barrel, both inclusive.

When a change in the price of fuel oil occurs, the company shall submit to the California Public Utilities Commission, within a period of fifteen (15) days, an Advice Letter and appropriate tariff sheets setting forth the new effective rates and accompanied by an affidavit of such change in the price of fuel oil. The new rates shall be effective on all regular meter readings taken on or after the thirtieth (30th) day following such change in the price of fuel oil.

(continued)

Schedule No. G-50

INTERRUPTIBLE NATURAL GAS SERVICE

(continued)

SPECIAL CONDITIONS (continued)

2. In case rate changes to be made in conformity with Rate Adjustment for Heating Value rule, Rule and Regulation No. 2(C), and Special Condition 1 above are due to become effective within fifteen (15) days of each other, then the two shall be combined and the later date of the two effective dates shall govern.

3. A contract will be required for a period of one (1) year when service is first rendered and year by year thereafter, continuing until cancelled by either party by written notice thirty (30) days in advance of the end of the initial year or any subsequent year. Such contract must be on one of the standard forms of the company regularly filed with the California Public Utilities Commission, in force at the time and applicable to the service of interruptible gas.

4. Service under this schedule is subject to discontinuance without notice in case of an actual or threatened shortage of natural gas, whether due to insufficient supply in the fields or to inadequate transmission or delivery capacity or facilities. The company will not be liable for damages occasioned by interruption or discontinuance of service supplied under this schedule.

5. No customer shall be entitled to service hereunder for new or additional equipment unless adequate standby equipment and fuel shall have been first provided therefor, said standby facilities to be ready at all times for immediate operation in the event that the supply of gas hereunder shall be partially or totally curtailed.

Schedule No. G-60

INTERRUPTIBLE NATURAL GAS SERVICE

APPLICABILITY

Applicable, subject to interruptions in supply as provided in special conditions below, for natural gas service to commercial and industrial establishments for gas used for all purposes at the option of the customer, except directly for the cooking of meals, where such establishments are located along existing mains having a delivery capacity in excess of the then existing requirements of firm customers.

TERRITORY

B-(1050 Btu)

The entire territory served natural gas by the company in Humboldt Division.

RATES

Commodity Charge	Per Customer Per Month Base Rates Fuel Oil $1.50 per Bbl. 1100 Btu	Effective Rates B 1050 Btu
First 1,000 Mcf, per Mcf..................	35.5¢	32.3¢
Next 2,000 Mcf, per Mcf..................	29.6¢	26.5¢
Next 3,000 Mcf, per Mcf..................	28.7¢	25.6¢
Next 4,000 Mcf, per Mcf..................	28.7¢	25.6¢
Over 10,000 Mcf, per Mcf..................	28.7¢	25.6¢

The above effective rates are based on the average monthly heating value per cubic foot indicated and as set forth in Rule and Regulation No. 2(C), and a posted price of fuel oil of $1.35 per barrel as set forth in Special Condition 1 below.

Minimum Charge

$80 per customer per month, accumulative annually.

SPECIAL CONDITIONS

1. The rates in effect at any time vary with the market price of fuel oil in tank car lots as regularly quoted or "posted" either by the Standard Oil Company of California f.o.b. its Richmond Refinery, or by the Union Oil Company of California f.o.b. its Oleum Refinery, or by the Shell Oil Company, Inc., f.o.b. its Martinez Refinery, or by the Tide Water Associated Oil Company f.o.b. its Avon Refinery, whichever posted price is the lowest, and shall be determined from the base rates by deducting or adding, respectively, 1¢ for each 6¢ that such price of oil is below or above $1.50 per barrel from $1.20 to $1.80 per barrel, both inclusive, and further by deducting or adding, respectively, 1¢ for each 12¢ that such price of oil is below $1.20 or above $1.80 per barrel, within the limits of $1.00 and $2.00 per barrel, both inclusive.

When a change in the price of fuel oil occurs, the company shall submit to the California Public Utilities Commission, within a period of fifteen (15) days, an Advice Letter and appropriate tariff sheets setting forth the new effective rates and accompanied by an affidavit of such change in the price of fuel oil. The new rates shall be effective on all regular meter readings taken on or after the thirtieth (30th) day following such change in the price of fuel oil.

(continued)

Schedule No. G-60

INTERRUPTIBLE NATURAL GAS SERVICE

(continued)

SPECIAL CONDITIONS (continued)

2. In case rate changes to be made in conformity with Rate Adjustment for Heating Value rule, Rule and Regulation No. 2(C), and Special Condition 1 above are due to become effective within fifteen (15) days of each other, then the two shall be combined and the later date of the two effective dates shall govern.

3. A contract will be required for a period of one (1) year when service is first rendered and year by year thereafter, continuing until cancelled by either party by written notice thirty (30) days in advance of the end of the initial year or any subsequent year. Such contract must be on one of the standard forms of the company regularly filed with the California Public Utilities Commission, in force at the time and applicable to the service of interruptible gas.

4. Service under this schedule is subject to discontinuance without notice in case of an actual or threatened shortage of natural gas, whether due to insufficient supply in the fields or to inadequate transmission or delivery capacity or facilities. The company will not be liable for damages occasioned by interruption or discontinuance of service supplied under this schedule.

5. No customer shall be entitled to service hereunder for new or additional equipment unless adequate standby equipment and fuel shall have been first provided therefor, said standby facilities to be ready at all times for immediate operation in the event that the supply of gas hereunder shall be partially or totally curtailed.

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AA

Revise Rule and Regulation No. 2, Description of Service, as follows:

Rule and Regulation No. 2

DESCRIPTION OF SERVICE

(A) Kind and Heating Value:

(Wording same as now in effect on Revised Cal. P.U.C. Sheet No. 2418-G.)

(B) Pressures:

(Wording same as now in effect on Revised Cal. P.U.C. Sheet No. 2418-G, except delete reference to "surplus" gas schedules in second line, third paragraph.)

(C) Rate Adjustment for Heating Value:

The effective rates in those schedules providing for Btu adjustment, as per the heating value of the natural gas served, shall be determined in accordance with the following rule:

The base rates set forth in the schedules for natural gas are predicated on an average monthly heating value of 1100 Btu per cubic foot (determined as the average of daily heating value tests on a "dry" basis). A maximum variation in the monthly average of 35 Btu above or below 1100 Btu is contemplated. When the actual variation exceeds 35 Btu for two consecutive calendar months, the effective rates will be changed by increasing or decreasing the rates to conform to a new average heating value, adjusted in steps of 50 Btu from the base of 1100 Btu, which is the nearest the average of that experienced during the two months which occasioned the change. The effective rates will be determined by an adjustment in all base rates (except for the fixed and/or the minimum charge portion of the rate) in accordance with the percentages set forth below for each 50 Btu step, computed to the nearest 0.01¢ per 100 cubic feet or 0.1¢ per 1000 cubic feet (Mcf) and will become effective fifteen (15) days thereafter.

General Natural Gas Service Schedules	-	3% per 50 Btu step down to and including 850 Btu.
		2% per 50 Btu step below 850 Btu.
Firm Industrial Natural Gas Service Schedule	-	2% per 50 Btu step.
Gas Engine Agricultural Natural Gas Service Schedule	-	2% per 50 Btu step.
Interruptible Natural Gas Service Schedules	-	2% per 50 Btu step.

Changes in the rates resulting from variation in heating value will not be made more frequently than each two-month period, except, when definite changes in the source of gas occur, the appropriate rates will be made effective fifteen (15) days after the date of changeover.