

**ORIGINAL**

Decision No. 49101

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the matter of the application of )  
PACIFIC GAS AND ELECTRIC COMPANY, a )  
corporation, for an order of the )  
Commission issuing to applicant a )  
certificate of public convenience )  
and necessity, under Chapter 5, )  
Article I, of the Public Utilities )  
Code of the State of California, )  
for the construction, operation and )  
maintenance of a natural gas pipe )  
line project, herein described. )

Application No. 29548  
(Second Supplemental)

Appearances for Applicant: Robert H. Gerdes,  
Ralph W. DuVal and John C. Morrissey.

Interested Parties: City and County of San  
Francisco, by Dion R. Holm and Paul  
L. Beck; California Farm Bureau Federation,  
by Edson Abel.

For the Commission staff: Lloyd E. Cooper,  
Gas Engineer.

OPINION ON SECOND SUPPLEMENTAL  
APPLICATION

Pacific Gas and Electric Company, operating public utility electric and gas systems and relatively minor water and steam heat systems in northern and central California, on July 24, 1953 filed this second supplemental application for authority to construct, install, operate and maintain facilities for enlargement of the capacity of its Topock-Milpitas 34-inch gas transmission pipeline so as to increase the daily capacity of the project from approximately 550 to 700 million cubic feet daily. Applicant also seeks authority to exercise the rights and privileges granted by Ordinance No. 714 of the Board of Supervisors of the County of San Bernardino; a limited county gas franchise granted to applicant.

By Decisions Nos. 42460 dated January 25, 1949 and 47492 dated July 22, 1952 the applicant was granted certificates first to construct the afore-mentioned main pipeline and second to increase its capacity from 400 to 550 million cubic feet daily for the purpose of transmitting out-of-state natural gas purchased from El Paso Natural Gas Company at the state border at Topock to the San Francisco Bay area terminal at Milpitas. Pursuant to authority under Decision No. 42460 the applicant constructed the pipeline and placed it in commercial operation on December 26, 1950. Pursuant to authority under Decision No. 47492 applicant has been carrying forward the construction work to parallel certain sections of the line and increase compressor capacity which should be completed by October 1, 1953.

After due notice a public hearing was held on this second supplemental application before Commissioner Harold P. Huls and Examiner M. W. Edwards on August 14, 1953 at San Francisco, California. At the hearing applicant submitted eight exhibits, and will late-file two others, and presented testimony by five witnesses in support of the need for increased deliverability of the transmission pipeline facilities to the extent of approximately 150 million cubic feet per day.

#### Proposed Construction

Additional paralleling pipe, 34-inches in diameter, in the total length of 220.3 miles is proposed at five sections as indicated in Exhibit No. SA-2; which may be described as follows:

1. An 87.8-mile length between Newberry and Essex (near east end of the line) consisting of 5/16- and 3/8-inch wall pipe
2. An 8.0-mile length west of Mojave of 3/8-inch wall pipe
3. An 88.8-mile length south and east of Kettleman Station of 5/16-, 1/2- and 11/32-inch wall pipe

4. A 3.6-mile length near Llanada of 7/16-inch wall pipe
5. A 32.1-mile length running northwest and southeast from Hollister of 11/32-inch wall pipe

When the proposed additions are completed a total of 808.25 miles of 34-inch O.D. pipe will be in service consisting of the following parts:

Original Line	501.7 Miles
1953 Loop	86.25
Proposed Loop	220.3
Total	808.25

Additional compressor capacity is proposed in the amount of 2,500 hp at Topock Compressor Station near the Arizona State line. When completed the total compressor station capacity will be:

Topock	22,500 hp
Hinkley	25,000
Kettleman	19,360
Total	66,860

Applicant plans to commence construction of the proposed facilities as soon as all governmental authority, permits and rights are obtained and anticipates completion by October 15, 1954. It has arranged to purchase the pipe from the Consolidated Western Steel Division of United States Steel Company and understands that the material will be available when needed. It will have the work done by contract.

Plant Cost Estimate

The estimated cost of the proposed facilities for increasing the capacity of the Topock-Milpitas line from 550 to 700 million cubic feet per day is set forth in Exhibit No. SA-2 and may be summarized as follows:

Estimated Construction Cost

Land and Land Rights	\$ 448,000
Main Pipeline	21,406,000
Measuring and Regulating Stations	449,000
Compressor Stations	1,830,590
Total Direct Costs	24,133,590
Administrative Overhead at 6%	1,448,015
Total Estimated Costs	25,581,605

Details as to the weight of the pipe, valves and fittings and unit prices per ton are set forth in the exhibit. The main-line installation cost, included in the above total cost summary, is estimated at \$6.70 per foot for 1,163,184 feet or a total of \$7,793,333.

Applicant plans to finance the construction cost of this improvement from treasury funds and cash from internal sources, from short-term bank loans and from the sale of additional securities as may be necessary.

#### Loads

Applicant has experienced a constantly mounting demand for natural gas in its service area. Population has grown at a rapid rate in the state during the postwar period and applicant anticipates that the rapid growth will continue in the future. In 1950 the state's population was 10,586,223 and by the end of 1956 applicant estimates that it will have grown to 12,974,000 persons. In 1950 the population in its natural gas area was 4,383,865 and by the end of 1956 it estimates such population to grow to 5,211,000, or roughly 40 per cent of the state's total population. Each natural gas customer represents approximately four persons and on this basis applicant expects its total annual average number of customers to grow from 941,949 in 1949 to 1,338,944 in 1956. Moreover, because of a rising trend in usage per customer the consumption of natural gas has grown faster than the growth in population and customers. The next table summarizes the growth in load on the applicant's system and for the whole of northern California as set forth in Exhibit No. SA-5.

Summary of Average Daily Requirements - Million Cubic Feet

Years	Pacific Gas & Elec. Co.			Northern California Total		
	Firm	Inter- ruptible	Total	Firm	Inter- ruptible	Total
1949 Actual	326	269	595	351	365	716
1950 "	355	286	641	382	406	788
1951 "	393	304	697	425	452	877
1952 Forecast	417	385	802	450	534	984
1953 "	458	480	938	496	631	1,127
1954 "	492	483	975	533	639	1,172
1955 "	528	426	954	572	587	1,159
1956 "	563	446	1,009	610	611	1,221

From the above tabulation it is apparent that approximately one half of the load in northern California on an average day is composed of interruptible service that may be largely curtailed during the cold winter days when the demands of the firm customers may rise to approximately three times their average daily demands.

Inasmuch as a large portion of the gas transmitted by this line will be sold to interruptible customers there was question as to the design being based upon firm load peak day demands. Applicant's Exhibit No. SA-3, Sheet 1, shows that the summer load requirement in July was considered in designing the Topock-Hinkley section of the pipeline and assumed a 90° F. gas temperature. In the Hinkley-Milpitas section of the pipeline a 60° F. gas temperature and average January 1955 load requirements were the design basis. One of applicant's witnesses testified to the effect that if only the firm load at low load factor were to be served there might be an entirely different solution to this problem. Based on these facts and this testimony the Commission is of the opinion that in any cost analyses consideration should be given to demand and commodity assignment of these transmission costs to the interruptible class.

System Resources

The discovery of new gas sources in California has not kept pace with the growth in use of natural gas in the state during

the past few years. As a result the state has had to rely more and more on out-of-state sources to augment its dwindling reserves. The average daily California gas production available for utilization has fallen from 1,561,866 Mcf in 1948 to 1,328,645 Mcf in 1952. This decreased availability, in part, is accounted for by increased use of gas for repressuring purposes in order to obtain maximum oil production. Applicant's Exhibit No. SA-4 shows the supply of natural gas available to northern California utilities and when related to the requirements reveals the following relationships:

Supply - Average Daily Volume in Million Cubic Feet

Years	California Sources: Dry Gas	Out-of- Oil Well	From Other:	State Sources	Total Supply	Excess of Supply Over Firm & Interruptible
1949	433	187	68	-	688	337 (28)
1950	489	134	83	22	728	346 (60)
1951	410	125	65	258	858	433 (19)
1952	357	99	49	404	909	459 (75)

Estimated with Out-of-State Gas  
at 550 Million Cubic Feet per Day

1953	426	85	15	460*	986	490 (141)
1954	417	80	1	497*	995	462 (177)
1955	413	80	3	497*	993	421 (166)
1956	416	80	7	497*	1,000	390 (221)

Estimated with Out-of-State Gas  
at 700 Million Cubic Feet per Day

1954	345	80	0	634*	1,059	526 (113)
1955	334	80	1	634*	1,049	477 (110)
1956	355	80	3	634*	1,072	462 (149)

(Red Figure)

\* 91 per cent load factor.

The declining supply of oil-well gas from California sources as evidenced above is not due to a declining oil production but reflects the fact that increased volumes of gas are being returned to underground oil zones for maintenance of pressure and repressuring operations. The rate of dry gas production is not tied

to the rate of oil production, so that during periods of low system demand the dry gas can be cut back and conserved. In spite of the cut back in dry gas production in 1952 the estimated total gas reserves in the state dropped from 9,578 billion cubic feet to 9,300 billion cubic feet of natural gas.

The tabulation shows sizable excesses over firm requirements but also shows that with the full 700 million cubic feet per day from out-of-state sources there still will be some curtailment of interruptible load. Such conclusions are based on average day results but a review of the abnormal peak day conditions, also shown in Exhibit No. SA-5, indicates that with a 550-million cubic-foot supply from out of state a firm deficiency of 941 million cubic feet will exist in the coming winter season 1953-1954 and that with the full 700-million cubic-foot supply there will be no firm deficiency until the 1954-1955 winter season. Under such abnormal peak-load conditions and with 700 million cubic feet out-of-state supply, the firm deficiencies are forecast as follows:

Supply - Load Relationships  
Abnormal Peak Day in Million Cubic Feet

<u>Year</u>	<u>Supply</u>	<u>Load</u>	<u>Deficiency</u>
1953-54	1,660.5	1,604.0	-
1954-55	1,622.5	1,723.0	100.5
1955-56	1,587.5	1,845.0	257.5
1956-57	1,553.9	1,963.0	409.1

While the above table shows no peak-day deficiencies in the 1953-54 season such forecast was on the basis that the applicant would obtain the added 150 million cubic feet before the abnormal peak day occurred in the wintertime. According to the service agreement the applicant will obtain only 50 million cubic feet on January 2, 1954 and the remaining 100 million cubic feet will not be available until November 1, 1954. If such an abnormal peak day occurred before the 100-million cubic-foot block is available a firm deficiency of

44.1 million cubic feet might result. However, such abnormal peak day does not occur every season and in actual practice the added 100 million cubic feet may not be needed for peaking purposes before November 1, 1954.

Source of Added Out-of-State Gas

Applicant proposes to obtain the additional supply of gas for the proposed project from El Paso Natural Gas Company, which in turn proposes to obtain its natural gas supply from gas producing fields located in (a) the Permian Basin area in southeastern New Mexico and west Texas, and (b) the San Juan Basin area of northwestern New Mexico, southwestern Colorado and southeastern Utah. Applicant claims that these areas contain the nearest presently known adequate and dependable reserves of out-of-state gas.

Applicant presently is purchasing and receiving its supply of gas for the Topock-Milpitas pipeline under the provisions of a service agreement with El Paso Natural Gas Company dated February 19, 1952. At the hearing applicant submitted a copy of a revised service agreement under date of November 1, 1952 as Exhibit No. SA-7 which supersedes the February 19, 1952 agreement.

According to this agreement the quantities of gas and period of delivery may be summarized as follows:

<u>Maximum Quantity Million Cubic Feet per Day</u>	<u>Starting Date</u>	<u>Basic Period</u>	<u>Possible Additional Period</u>
150	1-1-51	20 yrs.	5 yrs.
250	1-1-52	15 yrs.	10 yrs.
150	1-1-53	15 yrs.	-
50	1-1-54	15 yrs.	-
100	11-1-54	15 yrs.	-
Total	700		

The service agreement provides that the applicant shall purchase the gas under at least a 91 per cent load factor condition, assuming atmospheric pressure at the purchase point of 14.53 pounds per



square inch and a delivery pressure of not less than 500 pounds per square inch. Additional provisions relating to dedication of reserves are set forth in the agreement.

Under Exhibit No. SA-8 applicant filed a copy of the Federal Power Commission decision under Docket No. G-2102 adopted June 25, 1953 which issued to Pacific Gas and Electric Company a certificate of public convenience and necessity to construct the pipeline, transport and sell the additional 151,730 Mcf of gas at 14.73 psia pressure base (150,000 Mcf at 14.9 psia).

Annual Operation Expense

Applicant's estimates of the annual operation expense of the existing pipeline, the proposed improvement and the total line are presented in Exhibit No. SA-6 and may be summarized as follows:

Estimates of Cost of Plant  
and Annual Operation Expense

Item	: Present : Line	: Proposed : Improvement	: Total Line
Plant Plus Working Capital	\$77,292,000	\$25,651,000	\$102,943,000
Operation and Maintenance Com- pressor Fuel and Administrative and General Expenses	1,930,000	123,000	2,053,000
Depreciation Annuity (4% S.F.)	1,934,000	747,000	2,681,000
Taxes	4,546,000	1,517,000	6,063,000
Return at 6%	4,638,000	1,539,000	6,177,000
Total Estimated Annual Expenses	13,048,000	3,926,000	16,974,000

In the above tabulation the depreciation annuity is based on the 4 per cent sinking fund method and proposes the use of a life for the plant installed as of December 31, 1950 of 25 years, diminished by 1 year for each subsequent year's additions. Federal income taxes are based on the present rate of 52 per cent.

Unit Cost of Gas Delivered from Line

The volume of gas which applicant expects to purchase at Topock and deliver from the line, and the unit costs of purchase, transportation and delivery are estimated by applicant as:

Item	Present Line	Proposed Improvement	Total Line
Million Cubic Feet			
Annual Purchase Obligation (at 91% of Load Factor)	184,791	50,397	235,188
Fuel Use	3,504	350	3,854
Annual Delivery	181,287	50,047	231,334
Unit Cost per Mcf			
At Topock	21.603¢	21.603¢	21.603¢
Transportation Cost	7.197¢	7.845¢	7.377¢
Average Cost Delivered from Line	28.801¢	29.448¢	28.941¢

Applicant's witness testified that for the year 1952 the average cost of gas obtained from California sources was 22.442 cents per Mcf and for the year 1953 is estimated at 23.9 cents per Mcf. These are prices in the field and are not directly comparable with the delivered cost of gas at Milpitas. While the cost of gas from out of state may be higher than California gas, applicant's witness was of the opinion that the proposed project is economically feasible. Inasmuch as the additional out-of-state gas is costing substantially the same as the present out-of-state gas being purchased and since the applicant is now meeting the requirements of sale at prices sufficient to yield the out-of-state costs plus cost of delivery to customers it was the witnesses' conclusion that this additional gas will meet the same criteria and be economically feasible.

Furthermore, applicant's witness testified that for the domestic customers any other source of fuel that they might turn to for space heating would not only be more expensive but would require the customer to make substantial expenditures on his own premises to install equipment to utilize these alternate fuels. Likewise, if a

customer wanted to use other fuels for cooking or water heating, he would be faced with large installation costs and higher operating costs. In his opinion a similar situation exists as to firm commercial and industrial customers. On the basis of 1,085 Btu gas the witness showed in Exhibit No. SA-6 that the equivalent costs of various fuel oils are:

	<u>Cents per Mcf</u>
Bunker	33.214
Ordinary	35.869
Light	41.515
Diesel	77.782

Such fuel oil prices are based on the cost of fuel oil including state sales tax of 3 per cent f.o.b. tank cars at the Contra Costa County Refineries.

Conclusion on Feasibility of the Project

After reviewing the evidence presented by the applicant's witnesses, the relationships of future loads and supply estimates, it is concluded that there will be a market for the proposed additional 150 million cubic feet of natural gas daily from out-of-state sources. For several years the applicant will have available large quantities of gas for the interruptible class of customers which will result in reduced curtailments. During the winter season this increment will help to supply the peak requirements of the firm customers but this is not viewed as the most economic means of meeting winter peak loads. Applicant should continue its pending negotiations to develop promptly nearby seasonal underground storage reservoirs in order to supply the firm load deficiencies as indicated by applicant's estimates on an abnormal peak day.

So long as this gas can be delivered at Milpitas at a cost that will compare favorably with the equivalent market price for fuel oil, applicant's proposal appears economically sound. If the market price for fuel oil were to drop markedly this proposal might throw some burden on the firm customers, but this is a calculated risk that in our opinion should be taken in order to augment the local supply in anticipation of continued rapid growth of the firm load.

County Franchises

Applicant's Topock-Milpitas pipeline is constructed in part on private rights of way and in part on the highways, streets and roads in the Counties of San Bernardino, Kern, Kings, Fresno, San Benito and Santa Clara. Applicant claims it possesses general county gas franchises for all of said counties with the exception of San Bernardino and in this application requests a certificate declaring that the public convenience and necessity require and will require the exercise by applicant of the right, privilege and

franchise granted by Ordinance No. 714, dated June 15, 1953, of the Board of Supervisors of the County of San Bernardino, State of California. A copy of the ordinance is attached to the second supplemental application and marked Exhibit B.

San Bernardino County Franchise

This franchise, Ordinance No. 714 of San Bernardino County, grants the right of installing, maintaining, and using pipe and appurtenances, including telephone lines for patrol purposes, in so many and such parts of the public roads, as the grantee may from time to time elect to use, for the purpose of conveying and distributing gas to the public for any and all purposes, within an area lying within a strip of land of the uniform width of twenty miles lying equally on each side of a designated line (the line applicant's Topock-Milpitas pipeline follows in San Bernardino County).

Said ordinance provides that the use of public roads for distribution shall be limited to such portions of said area as do not lie within the service area of the Southwest Gas Corporation, Ltd., as now or hereafter from time to time fixed by the Public Utilities Commission of the State of California, except as grantee may be authorized so to do by order of said Commission.

The franchise is of indeterminate duration and provides a fee payable annually of 2 per cent of the gross receipts arising from the use, operation or possession of the franchise. Applicant's total cost of acquiring this franchise is stated to be \$499.75.

Conclusion

No objection to the granting of the requested certificate of public convenience and necessity has been entered. Applicant's proposal appears sound from an engineering standpoint and will obtain gas from the nearest presently known large and reliable source of out-of-state gas. Risks are involved in that the gas reserves may not prove to be as great as forecast and that in time the cost may be

greater than the competitive cost of fuel oil or substitute fuel; however, currently this appears to be the least costly method of augmenting the supply of natural gas in northern California. Furthermore, this project could be of untold value in the event of war or other emergency as it could release equivalent quantities of fuel oil for other uses, including the fueling of U. S. Navy and merchant vessels operating in the Pacific Ocean. It is concluded that applicant's request should be authorized.

The certificate of public convenience and necessity granted herein is subject to the following provision of law:

That the Commission shall have no power to authorize the capitalization of the franchise involved herein or this certificate of public convenience and necessity or the right to own, operate or enjoy such franchise or certificate of public convenience and necessity in excess of the amount (exclusive of any tax or annual charge) actually paid to the State or to a political subdivision thereof as the consideration for the grant of such franchise, certificate of public convenience and necessity or right.

O R D E R

The above-entitled application having been considered, a public hearing having been held, the matter having been submitted and now being ready for decision,

IT IS HEREBY FOUND AS A FACT that public convenience and necessity require the construction, operation and maintenance of the natural gas pipeline project as shown on the map, page 3, of Exhibit No. SA-2 in this proceeding, and will require the exercise by applicant of the right, privilege and franchise granted to Pacific Gas and Electric Company by Ordinance No. 714 of the Board of Supervisors of San Bernardino County within the area in San Bernardino County set forth in said franchise, therefore,

IT IS HEREBY ORDERED that Pacific Gas and Electric Company be and it is granted a certificate that public convenience and

necessity require the construction, operation and maintenance of the transmission pipeline described in this second supplemental application and require the exercise by it of the right, privilege and franchise granted to it by Ordinance No. 714 adopted June 15, 1953 by the Board of Supervisors of San Bernardino County.

IT IS HEREBY FURTHER ORDERED that applicant:

1. Shall undertake the procurement of requisite permission and franchises, lands or land rights necessary for the construction or operation of the project, the acquisition of natural gas supplies by means of the project, and the transmission, distribution, delivery and sale of such natural gas supplies to its present and prospective customers in accordance with its certificates of public convenience and necessity and with its rates, rules and regulations duly filed with this Commission.
2. Shall file with this Commission copies of any agreements amendatory to the service agreement, Exhibit No. SA-7, and copies of additional gas purchase contracts between El Paso Natural Gas Company and producers dedicated in full or in part to performance under the service agreement, as well as a detailed statement of the capital costs of the pipeline authorized herein when completed. Such cost report shall be submitted within six months of the date of completion.
3. Shall not exercise said County franchise for the purpose of supplying gas to customers lying within the service areas of Southwest Gas Corporation, Ltd., and the California Pacific Utilities Company.
4. Shall be subject to the condition that the Commission hereafter by appropriate proceeding and order may limit the authority herein granted to applicant as to any territory within said County not then being served by it.
5. Shall furnish, within 30 days after the effective date hereof, a list of all gas customers currently being served by it in San Bernardino County or from taps from the Topock-Milpitas line in San Bernardino County, together with a forecast of the 1954 annual rate of use of natural gas by each such customer.
6. Before rendering service to any new customer within the certificated area in San Bernardino County, shall first submit the name, location and proposed gas load of such customer to this Commission.

7. Shall not serve any new customer outside of the certificated area in San Bernardino County or from taps taken off the Topock-Milpitas line in San Bernardino County except upon further certificate of this Commission first obtained.

The authorization herein granted will lapse if not exercised within two years from the date hereof.

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

Dated at San Francisco, California, this 15<sup>th</sup> day of September, 1953.

A. B. [Signature]  
President

Justin F. [Signature]

Harold P. [Signature]

[Signature]

[Signature]  
Commissioners