

ORIGINAL

Decision No. 49666

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 issuing to)
 applicant a certificate under Sec-)
 tion 1001 of the Public Utilities)
 Act of the State of California declar-)
 ing that public convenience and)
 necessity require the construction,)
 operation and maintenance by appli-)
 cant of the steam-electric generating)
 plant, transmission lines, and related)
 facilities herein generally described.)
 (Morro Bay - Steam Electric Plant))

Application No. 34924

R. W. DuVal and F. T. Searls, for applicant.
 City and County of San Francisco, by Dion R. Holm and Paul L. Beck; California Farm Bureau Federation, by Edson Abel; State Engineer, by Fred J. Groat; United States Bureau of Reclamation, Region II, by John Mueller, interested parties.
L. R. Knerr, Electrical Engineer, for the Commission staff.

O P I N I O N

Pacific Gas and Electric Company, a California corporation, operating public utility electric and gas systems and relatively minor water and steam-heat systems in northern and central California, on December 3, 1953 filed the above-entitled application requesting a certificate of public convenience and necessity, under Section 1001 of the Public Utilities Code of the State of California, for the construction, operation and maintenance of the first two units of a new steam-electric generating plant at Morro Bay, San Luis Obispo County, California, and related transmission lines and other appurtenant facilities. This plant is to be known as the Morro Bay Steam-Electric Plant. After due notice a public hearing was held on this application before Commissioner Verne Scoggins and Examiner M. W. Edwards

on January 25, 1954, at San Francisco, California. At the hearing applicant submitted exhibits and presented testimony by one witness in support of the need of the proposed system improvement.

Proposed Construction

Applicant proposes to install two turbo-generators, each turbine rated 125,000/156,250 kw with an expected gross normal operating capacity of 150,000 kw; two steam generators (one per turbo-generator), each rated at not less than 1,135,000 pounds of primary steam per hour, designed pressure 1,850 psi, 1,000° F. superheater outlet and 1,000° F. reheat; and related steam plant equipment and essential high voltage transformer and transmission lines. Ocean water will be used for cooling and steam-condensing purposes through two surface condensers, each of 65,000 square feet size.

Fresh water for production of steam will be obtained from wells located on the property, from the town water supply and by evaporation of ocean water. Applicant estimates the evaporators for conversion of salt water, for the first two steam units, will be able to supply boiler make-up water at the rate of 50 gpm.

In order to connect the electrical generators to the system, applicant proposes to install and place in operation 75 miles of single circuit 220 kv transmission line on twin circuit towers between Morro Bay Steam Plant and the Gates Substation near the town of Huron where it will tie in with the existing Panoche-Midway 220 kv transmission line. Applicant proposes to install about 5 miles of the second circuit at this time where installation would be difficult when the balance of the second circuit is added at a later date. Conductors will be of 1,113,000 c.m. aluminum cable. In addition approximately 16 miles of single circuit 110 kv transmission line will be installed on twin circuit towers from the Morro Bay Steam Plant to applicant's San Luis Obispo Substation located at San Luis Obispo. The conductors for this line will be 715,500 c.m. aluminum cable.

It is expected that the first unit will be placed in operation in May, 1955 and the second unit some time during the year 1956.

Plant Cost

Increases to production and transmission capital which will result from the proposed new plant and lines are set forth in Exhibit No. 3 in this proceeding and may be summarized as follows:

Estimated Construction Cost
Morro Bay Steam Plant, Substation
and Transmission Lines for Units Nos. 1 and 2

<u>Item</u>	<u>Total Cost</u>	<u>Unit Cost per kw</u>
Steam Plant		
Land, Structures and Improvements	\$ 5,793,000	\$ 19.31
Boiler Plant Equipment	14,400,000	48.00
Turbo-Generator Units	10,850,000	36.17
Accessory and Misc. Equipment	3,230,000	10.76
Engr., Supt., Accounting and Overhead	6,597,000	21.99
Total Steam Plant	40,870,000	136.23
Transmission Substation	4,516,000	15.05
Transmission Lines	4,684,000	15.62
Project Total	50,070,000	166.90

Applicant proposes to finance the construction by using, to the extent available, its working capital, monies in reserve funds not required for immediate use, and the proceeds of the issue and sale of such stocks, bonds, notes or other evidences of indebtedness as the Commission hereafter, upon proper application, shall authorize for that purpose.

Need for Additional Capacity

Applicant's showing as to need for this new capacity is based upon estimates of peak-load and energy margins under average-year and dry-year conditions as set forth in Exhibits Nos. 5 and 6. Briefly, in both an average and dry year, applicant anticipates a growth in load during 1955 over 1954 of 250,000 kw. Applicant also indicated that during the five-year period between 1949 and 1953 growth at the rate of approximately 9.5 per cent annually has been realized, equivalent to 240,000 kw per year.

The load and margins estimated by applicant may be summarized for the system as follows:

Estimate of Margin Over-Load Requirements

	August Peak Kw	December Peak Kw	Energy For Year Million Kwhr
<u>Year 1954 Under Average Year Conditions</u>			
Estimated Resources	4,270,000	4,462,000	25,797
Estimated Load	3,680,000	3,575,000	20,352
Estimated Margin	590,000	887,000	5,445
Ratio, Margin to Load	16.0%	24.8%	26.8%
<u>Year 1954 Under Dry Year Conditions</u>			
Estimated Resources	4,151,000	4,293,000	24,237
Estimated Load	3,740,000	3,575,000	21,052
Estimated Margin	411,000	718,000	3,185
Ratio, Margin to Load	11.0%	20.1%	15.1%
<u>Year 1955 Under Average Year Conditions</u>			
Estimated Resources	4,621,000	4,627,000	28,191
Estimated Load	3,930,000	3,850,000	21,889
Estimated Margin	691,000	777,000	6,302
Ratio, Margin to Load	17.6%	20.2%	28.8%
<u>Year 1955 Under Dry Year Conditions</u>			
Estimated Resources	4,512,000	4,467,000	26,542
Estimated Load	3,990,000	3,850,000	22,757
Estimated Margin	522,000	617,000	3,785
Ratio, Margin to Load	13.0%	16.0%	16.6%

From the above tabulation it will be observed that the margins under average year conditions in 1954 and 1955 will be in excess of the nominal margin of 15 per cent, and under dry-year conditions during the critical summer period will fall below 15 per cent. It is realized that the dry year is the controlling factor. In view of the fact that the proposed addition in 1955 of the first unit at Morro Bay in May should not create an excessive ratio of margin to load, it is apparent that the added unit will be needed. On the assumption of a continued high rate of growth, capacity additional to the second unit will be needed in 1956.

New Capacity Program

In Exhibit No. 4 applicant showed the expected additions to system capacity during the years 1954 and 1955, including the first two units at Morro Bay. This program is set forth below:

<u>Description of Change</u>	<u>Date Effective</u>	<u>Name Plate Rating (Kw)</u>	<u>Effect On Available Capacity (Kw)</u>
Pittsburg Steam Plant			
Contra Costa County			
First Unit	June, 1954	125,000	150,000
Second Unit	July, 1954	125,000	150,000
Third Unit	November, 1954	125,000	150,000
Fourth Unit	December, 1954	125,000	150,000
Pit No. 4			
Shasta County			
	June, 1955	90,000	84,000
Morro Bay Steam Plant			
San Luis Obispo County			
First Unit	May, 1955	125,000	150,000
Second Unit	1956	<u>125,000</u>	<u>150,000</u>
Total		840,000	984,000

In addition to the above program the applicant indicated that in the future it intends to install hydroelectric plants upon the Kings, Pit and Feather Rivers in addition to a steam plant at Eureka and steam plants at other sites not selected as yet. Because of the length of time necessary to build a hydro plant, no definite dates were set forth for these additional hydro units or for the additional steam units.

Cost of Production

When the first two units of the Morro Bay Plant are completed applicant estimates that approximately 3 million barrels of fuel oil per year will be required for 70 per cent load factor operation. According to applicant's witness, the estimated costs of power delivered to the system from the project under the conditions

of 70 and 80 per cent load factor at oil prices of \$1.75 and \$2 per barrel are:

	<u>Fuel Price</u>	
	<u>\$1.75 per Barrel of Oil</u>	<u>\$2.00 per Barrel of Oil</u>
At 70 per cent Load Factor	8.0 mills/kwhr	8.4 mills/kwhr
At 80 per cent Load Factor	7.3 mills/kwhr	7.75 mills/kwhr

The above cost figures include all fixed charges and operating expenses assuming an incremental energy to fuel ratio of 720 kwhr per barrel of oil.

Customer Representation

Customers and their representatives were present at the hearing but none offered any objection to the granting of a certificate of public convenience and necessity authorizing the construction of this plant. While applicant's justification for this project is based upon a continuation of the rapid rate of growth being experienced during the postwar period, should such rate of growth not continue under near-future conditions applicant could delay the completion of the second unit and the added hydro and steam plants heretofore enumerated. It is our opinion that we must guard against a dry year and should authorize needed projects. In the meantime, in view of the fact that the postwar load trend in the area may continue, the use of this steam energy for firming of present and future hydro power appears in the public interest.

Conclusion

The problem of providing an adequate electric supply for the growing public demand for electricity is one that is of vital concern to all citizens of northern and central California. While the size of the plant in itself is large and may eventually be expanded to eight units, the plant capacity represented by the first two units is an increment of approximately 8 per cent of total system load. Applicant's estimates of load growth and costs for power

production from the proposed plant do not appear unreasonable considering immediate past growth trends and present-day cost levels. It is our opinion that the applicant has the financial means to construct the project and place it in successful operation. After considering the record made in this proceeding, it is our conclusion that an order should be issued granting the authority requested by the applicant.

Certification

Applicant proposes to construct the afore-mentioned transmission lines on private rights of way and/or on certain roads, highways, streets or public places in the following counties: Fresno, Kings, Monterey and San Luis Obispo. Applicant proposes to acquire such private rights of way, easements or servitudes of using land in those counties as may be necessary for the installation, maintenance or use of said new transmission lines, and it claims ownership of franchises permitting such new construction. In this regard, in Exhibit A attached to the application, there is a listing of franchises and certificates owned and possessed by applicant which may be summarized as follows:

<u>County</u>	<u>Ordinance No.</u>	<u>Expires</u>	<u>Application No.</u>	<u>Decision No.</u>
Fresno	318	May 29, 1988	22642	34503
Fresno	319	May 29, 1988	-	-
Kings	164	February 15, 1989	23083	34489
Monterey	335 and 338	September 6, 1961	-	-
Monterey	337	May 16, 1962	-	-
Monterey	354 and 414	August 8, 1972	9611	14092
Monterey	621	Indeterminate	29689	42311
San Luis Obispo	Unnumbered	July 2, 1962	-	-
San Luis Obispo	65	March 8, 1989	23435	34493

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

That the Commission shall have no power to authorize the capitalization of this certificate of public convenience and necessity or the right to own,

operate or enjoy such certificate of public convenience and necessity in excess of the amount (exclusive of any tax or annual charge) actually paid to the State as the consideration for the issuance of such certificate of public convenience and necessity or right.

Before the close of the hearing applicant requested that its application be deemed to be amended in certain minor respects regarding cost figures and the method of obtaining fresh water shown in the application to the extent necessary to conform to the testimony and exhibits presented at the hearing. Such amendment was authorized by the presiding Commissioner.

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 electric generation and transmission project as described in this application as amended in the general location shown in red on Exhibits Nos. 1 and 2; therefore,

IT IS HEREBY ORDERED that Pacific Gas and Electric Company be and it is hereby granted a certificate, under Section 1001 of the Public Utilities Act, that public convenience and necessity require the construction, operation and maintenance of the steam-electric generating plant and transmission lines described in this application, as amended.

IT IS HEREBY FURTHER ORDERED that applicant shall file with this Commission a detailed statement of the capital costs of the

generation and transmission projects when completed. Such cost reports shall be submitted within six months of the date of completion.

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

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

Dated at San Francisco, California, this 16th day of February, 1954.

R. Z. [Signature]
President
Justice J. Callahan
[Signature]
[Signature]
[Signature]
[Signature]
Commissioners