

ORIGINAL

Decision No. 51125

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 a certificate under)
Section 1001 of the Public Utilities)
Code of the State of California,)
declaring that the present and future)
public convenience and necessity)
require or will require the construc-)
tion, operation, maintenance and use)
of its proposed Poe hydroelectric)
power plant to be constructed on the)
North Fork Feather River in the)
County of Butte, California, as)
herein set forth.)

Application No. 35926

F. T. Searls, for applicant.
J. J. Deuel and Edson Abel, for California
Farm Bureau Federation; Dion R. Holm and
Paul L. Beck, for City and County of
San Francisco; Fred L. Groat, for State
Engineer; Burle Laton, for U. S. Bureau
of Reclamation; George R. Bell, for
San Francisco Regional Office of the
Federal Power Commission, interested
parties.
John J. Doran, for the Commission staff.

O P I N I O N

Nature of Proceeding

By the above-entitled application, filed November 3, 1954, Pacific Gas and Electric Company seeks a certificate of public convenience and necessity to construct and to thereafter operate and maintain an hydroelectric generating plant on the North Fork of the Feather River in Butte County.

Public Hearings

Public hearings in the matter were held before Examiner F. Everett Emerson on November 22, 1954 and before Commissioner Justus F. Craemer and Examiner Emerson on January 31, 1955 in San Francisco.

Electric Generating Requirements

Applicant has determined that its system is presently experiencing an average annual load growth of approximately 6 per cent. In order to meet such growth and to maintain adequate system reserves it must expand and augment its generating facilities. As a part of its planning for the future needs of its over-all system, applicant has projected present load growth trends into the future and has engineered both steam-electric and hydroelectric generating plants to meet such needs. Applicant's engineers have estimated that the peak load growth for the two years 1957-1958 will be on the order of 480 megawatts. The plant for which applicant seeks a certificate in this proceeding is designed to help meet such peak load growth and to continue its development of the Feather River hydroelectric potentials and the use of its vast watershed areas feeding its plants along that river.

Applicant's over-all plans for the Feather River development include four additional plants along the river^{1/} and the abandonment of one plant.^{2/}

The Federal Power Commission has already issued a license for the Poe project, and since the submission of the instant proceeding, this Commission has received a copy of the order of the Federal Commission granting the Pacific Gas and Electric Company a major license for 50 years from November 1, 1954, for the Almanor Dam and Reservoir and for the Belden, Caribou, and Butt Valley power plants.

For the immediate future, applicant's estimates of the margins of available generating capacity over maximum demands are shown in the following tabulations. The first tabulation relates to "average year" conditions and is predicated on water conditions prevailing during the year 1935. The second tabulation is for a "dry year" and is based on the year 1931. These two test periods have long been used as the bases for applicant's estimates of its hydroelectric generating capabilities.

^{1/} Poe, Belden, Caribou No. 2 and Butt Valley.

^{2/} Big Bend, which will be inundated when the State's Oroville Reservoir is completed.

Available Capacity
AVERAGE YEAR MARGINS

Item	:1955 Peaks		:1956 Peaks		:1957 Peaks		:1958 Peaks	
	: Aug.:	: Dec.:	: Aug.:	: Dec.:	: Aug.:	: Dec.:	: Aug.:	: Dec.:
CAPACITY-megawatts								
Hydro	1,313	1,279	1,313	1,279	1,313	1,279	1,419	1,385
Steam	2,866	2,866	3,031	3,081	3,081	3,081	3,081	3,081
From Others	570	525	740	658	740	658	740	558
Total	4,749	4,670	5,084	5,018	5,134	5,018	5,240	5,124
DEMANDS-megawatts	4,020	3,840	4,245	3,925	4,365	4,160	4,600	4,380
GROSS MARGINS								
Megawatts	729	830	839	1,093	769	858	640	744
Per Cent	18.1	21.6	19.8	27.8	17.6	20.6	13.9	17.0

Available Capacity
DRY YEAR MARGINS

Item	:1955 Peaks		:1956 Peaks		:1957 Peaks		:1958 Peaks	
	: Aug.:	: Dec.:	: Aug.:	: Dec.:	: Aug.:	: Dec.:	: Aug.:	: Dec.:
CAPACITY-megawatts								
Hydro	1,226	1,246	1,226	1,246	1,226	1,246	1,332	1,352
Steam	2,866	2,866	3,031	3,081	3,081	3,081	3,081	3,081
From Others	548	398	548	398	576	480	576	480
Total	4,640	4,510	4,805	4,725	4,883	4,807	4,989	4,913
DEMANDS-megawatts	4,080	3,840	4,305	3,925	4,425	4,160	4,660	4,380
GROSS MARGINS								
Megawatts	560	670	500	800	458	647	329	533
Per Cent	13.7	17.4	11.6	20.4	10.4	15.6	7.1	12.2

It is recognized that the "dry year" availability is controlling and it is apparent that the providing of additional capacity is prudent.

Applicant has presently scheduled alterations and additions of generating facilities as indicated in the following tabulation.

Generating Additions

Plant	In Service	Additive Effect on Capacity:
Pittsburgh Steam Plant		
Third Unit	Dec. 1954	165 megawatts
Fourth Unit	Dec. 1954	165 megawatts
Pit.No.4 Hydro Plant	June 1955	84 megawatts
Morro Bay Steam Plant		
First Unit	May 1955	165 megawatts
Second Unit	May 1955	165 megawatts
Humboldt Bay Steam Plant	Oct. 1956	50 megawatts
Poe Hydro Plant	June 1958	106 megawatts

At the present time applicant's engineers foresee the early retirement from active operation of approximately 150 megawatts of low pressure steam plant units in order to accomplish generation at the greater efficiencies of the more recent installations. It is not now planned to dismantle these older plants, but rather to hold them in a "reserve" status. These plants or units are as follows:

Generating Retirements

<u>Plant or Unit</u>	<u>Effective Reduction in Capacity:</u>
Station A, SF, Unit 5	15 megawatts
Station W, Oakland	7 "
North Beach, SF	24 "
Station Q, SF	16 "
Bakersfield	22 "
Midway	25 "
Station A, SF, Unit 4	15 "
Station C, Oakland, Unit 2	6.5 "
Station B, Sacramento	19.5 "

Poe Hydroelectric Plant

As an extension of and addition to its over-all generating and transmission system applicant has begun preliminary work on the Poe Plant project on the North Fork of the Feather River to the extent of starting an access road and bridge and other work. Such plant is located between its existing Cresta and Big Bend plants and will utilize the flow of the river between those plants. Water is to be diverted by means of a reinforced concrete dam about 60 feet in height above the stream bed and approximately 400 feet in length along the crest. Radial gates will be placed so as to pass a maximum flood flow of 125,000 cubic feet of water per second. The reservoir created by the dam will be about 50 acres in area and normally will have a capacity of about 470-acre feet of water.

An intake structure near the dam will channel the water into a pressure tunnel, about 33,000 feet long and with a capacity of flow of 3,500 second-feet, which would convey the water to two welded steel pipe penstocks. The penstocks will extend about 800 feet to the powerhouse, approximately 4,000 feet upstream from applicant's

existing intake to its Big Bend powerhouse. The Poe project will thereby develop a static head of 477 feet between the intake pond and the tailrace of the powerhouse. With a peak flow of 3,500 second-feet and an effective head of 414 feet, the Poe project could be expected to develop 146,000 horsepower.

The powerhouse would be a structural steel and reinforced concrete building with abutting switch house. It will contain two 73,000 horsepower vertical Francis turbines, each directly connected to a 63,000-kva generator. The power will be transformed from generation to transmission voltage by 13,800-volts Delta to 230,000-volts Wye transformers and then transmitted to applicant's Rio Oso Substation near Marysville.

The cost of the Poe project, including transmission, is estimated to total \$40,600,000. At a load factor of 56.2 per cent, applicant's engineers anticipate that the energy developed by this plant will cost approximately 9 mills per kilowatt-hour. For the 106,000-kw effect on capacity availability estimated by applicant, the cost is computed to be about \$382 per kilowatt.

It is apparent from a review of the evidence presented in this record by applicant on January 31 that the construction of the Poe Plant which is an integrated unit of the Feather River development, is a prudent investment.

Conclusion

It is clear that the Poe hydroelectric plant is needed and that its construction will be in the public interest. Applicant's request for a certificate will be granted. The certificate of

public convenience and necessity herein issued 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.

O R D E R

The above-entitled application having been considered, public hearing thereon 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 and will require the construction, operation and maintenance of the hydroelectric generating plant discussed in the foregoing opinion; therefore,

IT IS ORDERED that a certificate of public convenience and necessity be and it is hereby granted Pacific Gas and Electric Company for the construction, operation and maintenance of the aforesaid Poe hydroelectric generating plant.

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

Dated at San Francisco, California, this 23rd day of FEBRUARY, 1955.

[Signature]
President
[Signature]
[Signature]