

Decision No. 51757**ORIGINAL**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of)
 SOUTHERN CALIFORNIA EDISON COMPANY)
 for a Certificate that Present and)
 Future Public Convenience and)
 Necessity require or will require)
 the construction and operation by)
 Applicant of a new Steam Electric)
 Generating Station to be known as)
 the El Segundo Steam Station,)
 together with the transmission lines)
 and other appurtenances to be used)
 in connection with said Station.)

Application No. 35152
 (First Supplemental)

Bruce Renwick, Rollin E. Woodbury,
 and Harry W. Sturges, Jr., for
 applicant.

FIRST SUPPLEMENTAL OPINION

Southern California Edison Company by the above-entitled application filed March 26, 1955, requests a certificate that present and future public convenience and necessity require, or will require, the construction, installation and operation by applicant of a second steam electric generating unit with related structures, equipment and facilities in its El Segundo Steam Station. A public hearing in this proceeding was held in Los Angeles on June 20, 1955, before Examiner Carl E. Crenshaw at which no objection to the granting of the certificate was entered.

The steam electric generating station in which this second unit is to be constructed is located upon a site adjacent to the refinery of the Standard Oil Company of California in the City of El Segundo, California. This unit, designated as El Segundo No. 2, is similar to the present Unit No. 1 with a name-plate capacity rating of 156,250 kilowatts. It is expected by applicant that steam will be produced in a single boiler having

an operating capacity of 1,140,000 pounds of steam per hour for delivery to the turbine throttle at 1,800 pounds per square inch pressure and 1,000° F. temperature. The steam turbine will be a tandem compound 3,600 rpm unit directly connected to a main generator and to an auxiliary generator. The turbine condenser will have approximately 90,000 square feet of cooling surface and will use sea water for cooling purposes. The sea water will be supplied from two cooling water conduits, one approximately 2,600 feet in length and the other approximately 2,000 feet in length which were previously constructed at the time Unit No. 1 was installed.

The fuel to be used will be high viscosity petroleum tar and pitches and fuel oil, all of which are obtainable directly from an adjacent refinery. The electric energy will be generated at 18,000 volts and will be transformed through a bank of three single phase 56,000 kva transformers to 220,000 volts and transmitted approximately seven miles over a double circuit 220 kv transmission line to La Fresa Substation referred to in the original application. According to the record the addition of the proposed generating unit to applicant's production facilities is, and will be, required by public convenience and necessity because of the actual and anticipated growth in applicant's territory.

On the basis of recently experienced system peak demand and energy requirements and their projection for the future, applicant believes that by the latter part of 1956 the use of Unit No. 2 at El Segundo Steam Station will be required. A chart showing the relationship of net system peak demand to the total of the effective and anticipated operating capacities of applicant's generating facilities is set forth in Exhibit "B" attached to the application. Applicant's records and studies, according to the evidence, indicate that its net system peak demand has increased

from 1,394,000 kilowatts in 1950 to 1,997,000 kilowatts in 1954, and is estimated to increase to 2,300,000 kilowatts in 1956. During the same period the net system energy requirements have increased from 7.7 billion kilowatt hours in 1950 to 10.9 billion kilowatt hours in 1954 and are estimated to increase to 12.5 billion kilowatt hours in 1956. The following table sets forth the recorded data for the years 1950 through 1954, and estimated through 1957:

Year	<u>Net System Peak Demand</u>			<u>Net System Energy Requirement</u>		
	Kilowatts (Thousands)	Increase over Prior Year		KWH (Millions)	Increase over Prior Year	
Kilowatts (Thousands)		Per Cent	KWH (Millions)		Per Cent	
1950 (Recorded)	1,393.7	139.0	11.08	7,694.2	681.9	9.72
1951 (")	1,543.4	149.7	10.74	8,614.9	920.7	11.97
1952 (")	1,716.0	172.6	11.18	9,358.3	743.4	8.63
1953 (")	1,852.8	136.8	7.97	10,242.5	884.2	9.45
1954 (")	1,997.1	144.3	7.79	10,919.8	677.3	6.61
1955 (Estimated)	2,150.0	152.9	7.66	11,650.0	730.2	6.69
1956 (")	2,300.0	150.0	6.98	12,460.0	810.0	6.95
1957 (")	2,420.0	120.0	5.22	13,150.0	690.0	5.54

The El Segundo Steam Station has been designed as an outdoor type plant with centralized control facilities. According to the record the present estimate of the cost, including general overheads of Unit No. 1, amounts to \$25,095,000, which includes the cost of certain joint facilities to be used for Unit No. 2. Estimated costs of Unit No. 2 are \$19,666,000. The total estimated cost of the station, including both units and excluding the cost of the transmission line, is \$44,761,000. The estimated cost of the transmission line is \$910,000. The following table shows the cost of the plant by major items:

<u>Cost of Plant</u>	<u>Unit No. 1*</u>	<u>Unit No. 2</u>	<u>Total Station</u>
Land and Land Rights	\$ 419,000	\$ 13,000	\$ 432,000
Structures and Improvements	1,600,000	567,000	2,167,000
Boiler Plant Equipment	9,076,000	9,158,000	18,234,000
Turbo-Generators	9,904,000	6,671,000	16,575,000
Other Equipment	4,096,000	3,257,000	7,353,000
Total Cost	\$25,095,000	\$19,666,000	\$44,761,000
Cost per kw of Nameplate Capacity	\$160.61	\$125.86	\$143.24

*Including the cost of certain joint facilities to be used for Unit No. 2.

It will be noted from the above table that the cost per kilowatt of nameplate capacity for Unit No. 1 is \$160.61 and for Unit No. 2, \$125.86. The difference in the cost per kilowatt for Unit No. 1, as compared with Unit No. 2, is due to certain joint facilities having been installed at the time Unit No. 1 was constructed. For example, the cooling water conduits to obtain sea water for cooling purposes were constructed at that time with adequate capacity to serve both units.

The estimated annual cost of operating and maintaining the station with two units, according to the testimony, amounts to \$652,500, exclusive of fuel and fixed costs. The annual cost of depreciation, taxes and return, assuming a 6% return on a plant half depreciated to represent the average conditions over the life span is approximately \$4,889,000. Assuming a 60% capacity factor at an efficiency of 9720 Btu per kilowatt hour, the estimated fuel cost is 2.39 mills per kilowatt hour at the level of present posted fuel oil prices and is 3.444 mills per kilowatt hour if a fuel cost of \$2.25 per barrel is assumed. The present estimates of total station expenses, by principal items covering both Units Nos. 1 and 2, are summarized as follows:

Fuel (at present price levels)	\$3,930,000
Other Operation and Maintenance	652,500
Depreciation (straight line)	1,108,000
Taxes (Income - current rates)	1,252,000
Taxes (Ad valorem - current rates)	1,162,000
Return (average)	<u>1,377,000</u>
Total	\$9,481,500

Based on the foregoing assumptions, the estimated average total cost per kilowatt hour at the steam station, assuming fuel at the present price levels, is 5.77 mills per kilowatt hour; and assuming fuel at a cost of \$2.25 per barrel, is 6.82 mills per kilowatt hour.

As the above costs are estimated costs, the Commission is not at this time passing upon the reasonableness of these charges, as the actual cost will be of record when the construction work is completed and subject to review for rate fixing purposes.

According to the evidence the necessary permits have been obtained, or will be obtained, for the construction, operation and maintenance of the plant from the City of El Segundo, the Corps of Engineers, U. S. Army; the Division of State Lands, State of California, the Regional Water Pollution Board, the Air Pollution Board of Los Angeles County, and the Civil Aeronautics Authority. ✓

Applicant proposes to finance the construction of the second unit from available funds, or from funds to be obtained through the sale of bonds or stock, applications for the issuance of which will be filed with the Commission. It appears that applicant can provide the financial means for the construction, operation and maintenance of the proposed second unit of the El Segundo plant. Applicant expects to have the second unit completed by September, 1956.

According to the record the growth of load in applicant's service area substantiates the need for increased generating facilities. The provision for such increase, by construction of a second steam electric generating unit at the El Segundo Steam Plant with necessary auxiliary facilities and necessary transmission facilities to transmit electric energy to applicant's La Fresa substation, is desirable from the standpoint of reliability of service to its customers. It appears that the proposed construction will not compete with other utilities. A certificate of public convenience and necessity will be granted.

The certificate of public convenience and necessity herein granted is subject to the following provisions 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 conven-

ience and necessity for any amount of money in excess of the amount (exclusive of any tax or annual charge) actually paid to the State as 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 filed, a public hearing having been held, the matter having been submitted and now being ready for decision,

IT IS HEREBY FOUND AS A FACT that the present or future public convenience and necessity require or will require the construction, operation and maintenance by Southern California Edison Company of a second steam electric generating unit in its El Segundo Steam Station as described above, and with auxiliary transmission lines and appurtenant facilities, and the acquisition by Southern California Edison Company of all necessary or convenient land, rights of way, easements and permits and other rights requested for said purposes; therefore,

IT IS HEREBY ORDERED that a certificate of public convenience and necessity be and it is hereby granted Southern California Edison Company to construct, operate and maintain said second steam electric generating unit in the El Segundo Steam Plant with transmission lines and appurtenances and to acquire such lands, permits and rights as are necessary or convenient for said purpose.

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

Dated at San Francisco, California, this 2nd day of August, 1955.

[Signature]
President
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Commissioners