

ORIGINALDecision No. 67911

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 two new)
 steam electric generating units, to be)
 known as Units Nos. 7 and 8, at its)
 REDONDO STEAM STATION, together with)
 other appurtenances to be used in)
 connection with said station.)

Application No. 46844
 (Filed July 27, 1964)

OPINION AND ORDER

Southern California Edison Company requests a certificate of public convenience and necessity to construct and operate at its Redondo Steam Station two steam-electric generating units to be known as Units Nos. 7 and 8, rated at 450,000 kw. each together with related structures, equipment and facilities, and other appurtenances.

By Decision No. 50133, dated June 7, 1954, in Application No. 35132, this Commission granted applicant a certificate for the construction, operation and maintenance at its Redondo Steam Station of an electric generating unit known as Unit No. 5. By Decision No. 52218, dated November 14, 1955, in Application No. 35132 (First Supplemental), this Commission granted applicant a certificate for an additional steam-electric generating unit known as Unit No. 6. Said units were completed and placed in operation in October, 1954, and July, 1957, respectively. Units Nos. 5 and 6 each are rated at 156,250 kilowatts output.

Plans for construction of Units Nos. 7 and 8 provide for the installation of steam turbine-electric generators and related structures, equipment and facilities. Each of the turbine-generators will be rated at 450,000 kilowatts output at 3-1/2 inches of mercury absolute back-pressure and 3 percent boiler water make-up. The expected maximum net capability of each unit is 488,500 kilowatts at 1-1/2 inches of mercury absolute back-pressure and 1/2 percent make-up.

Steam for the operation of Units Nos. 7 and 8 will be produced in a single steam generator for each unit, each having a rated capability of 3,316,000 pounds of steam per hour to be delivered to the turbine throttles at 3,500 pounds per square inch gauge pressure and 1000°F. temperature. Steam leaving the high pressure turbines will be reheated to 1000°F. for return to the reheat sections of the turbines. The estimated net heat rate for Units Nos. 7 and 8 at the expected maximum output, assuming gas fuel, is 8889 BTU/KWH. Assuming oil fuel, the expected net heat rate at maximum output is estimated to be 8472 BTU/KWH.

The turbine-generators for Units Nos. 7 and 8 will be cross compound units each with a high pressure turbine and an intermediate pressure turbine on one shaft rotating at 3,600 r.p.m. and coupled to one generator, and a low pressure turbine on a second shaft rotating at 1,800 r.p.m. and coupled to another generator. There will be no separate auxiliary generators, and auxiliary power for each of the units will be obtained from the main generator bus through a transformer.

The proposed new units will be designed as outdoor type stations with centralized control facilities and with provision for future addition of digital computer monitoring and control equipment.

Sea water obtained from Redondo Beach King Harbor will be used for cooling purposes.

Applicant states that natural gas will be burned for fuel, with provision for alternate burning of fuel oils, including high viscosity fuel oil.

It is proposed that the power output of the new units will be transmitted to applicant's interconnected system through two new 220 kv. circuits to be located on an existing right of way between Redondo Steam Station and applicant's La Fresa Substation. In addition, certain existing transmission lines will be reinforced and uprated in connection with the addition of Redondo Units Nos. 7 and 8.

Applicant states that recently experienced system peak demand and energy requirements and their projections for the future require the use of Unit No. 7 by February, 1967, and Unit No. 8 by July, 1967. To meet scheduled operating dates, it is estimated that construction must be commenced by October, 1964.

Applicant's records and studies submitted with the application indicate that its net system peak demand has increased from 3,181,000 kilowatts in 1959 to 4,619,000 kilowatts in 1963. A merger was consummated between applicant and California Electric Power Company, effective December 31, 1963, and since said date the California Electric Power Company's electric utility system has been integrated with that of applicant. Applicant states that during the period 1959 through 1963 the net system peak demand on the former California Electric Power Company system increased from 239,000 kilowatts to 330,000 kilowatts and it is estimated that the net system peak demand on the combined systems will increase to 7,040,000 kilowatts by 1967. During the same period, applicant's

net system energy requirements is said to have increased from 17.6 billion kilowatt-hours for the year 1959 to 25.0 billion kilowatt-hours for the year 1963, and energy requirements on the former California Electric Power Company system increased from 1.61 to 2.11 billion kilowatt-hours during the same period. On a combined system basis it is estimated the net energy requirements will increase to 39.0 billion kilowatt-hours for the year 1967.

The annual data recorded for the years 1959 through 1963 for the two systems separately and estimated through 1967 on a combined system basis are summarized in the following tabulations:

NET SYSTEM PEAK DEMAND

<u>Year</u>	<u>Kilowatts (Thousands)</u>			<u>Increase Over Prior Year</u>	
	<u>Edison</u>	<u>C.E.P.</u>	<u>Total</u>	<u>Kilowatts (Thousands)</u>	<u>Percent</u>
1959 (*)	3,181	239	3,420	238	7.5
1960 (*)	3,402	249	3,651	231	6.8
1961 (*)	3,780	270	4,050	399	9.9
1962 (*)	4,157	305	4,462	412	10.2
1963 (*)	4,619	330	4,949	496	10.9

TOTAL COMBINED SYSTEM

1964 (**)		5,370	421	8.5
1965 (**)		5,870	500	9.3
1966 (**)		6,430	560	9.5
1967 (**)		7,040	610	9.5

* Indicates recorded.

** Indicates estimated.

The following table submitted by applicant summarizes the estimate of the cost, including general overheads, of the proposed new units.

<u>Cost of Plant</u>	<u>Units Nos. 7 and 8</u>
Structures and Improvements.....	\$ 4,075,000
Boiler Plant Equipment.....	40,873,000
Turbine Generator Units.....	32,591,000
Accessory Electric Equipment.....	5,064,000
Other Equipment.....	<u>5,719,000</u>
	88,322,000
Cost of Redondo Units Nos. 7 and 8 per kw. (based on set rating).....	\$98.14

Other capital costs attributable to the addition of Redondo Steam Station Units Nos. 7 and 8 are as follows:

Proration of Joint Facilities Constructed with Units Nos. 1, 2, 3, 4, 5 and 6 and Common to Other Units.....	\$1,052,000
Transmission Line Costs.....	2,449,000
Transmission Terminal Facilities.....	170,000
Offsite Fuel Service Facilities.....	<u>788,000</u>
Total Other Capital Costs.....	4,459,000

The above costs are inclusive of interest during construction and all other Edison overhead expenses chargeable to plant costs.

The estimated annual cost, exclusive of fuel costs, of operating and maintaining the new generating unit totals \$1,229,000. The annual cost of depreciation, taxes and return, assuming a 6.25 percent return on a plant half-depreciated to represent the average condition over the life span, is approximately \$10,412,000.

Assuming a 62.0 percent capacity factor on 900,000 kw. capacity and a weighted average net heat rate based on an assumed operation of 75 percent of the time on gas fuel and 25 percent of the time on oil fuel, and based upon a weighted average cost of fuel of 31.25 cents per million BTU's at present price levels, the estimated fuel cost of generation for Units Nos. 7 and 8 is 2.745 mills per

KWH. If a fuel cost of 50 cents per million BTU's is assumed the corresponding estimated fuel cost of generation is 4.392 mills per KWH.

The estimates of annual expenses for Units Nos. 7 and 8 by principal categories are summarized as follows:

Expenses (Total - Units Nos. 7 and 8)

Fuel (present price levels).....	\$13,418,000
Other operation and maintenance.....	1,229,000
Depreciation (straight line).....	2,523,000
Income taxes (current rates).....	1,913,000
Ad Valorem taxes (current rates).....	3,137,000
Return (average).....	<u>2,839,000</u>
Total.....	25,059,000

Based on the foregoing assumptions, the estimated average total operating cost per KWH of the new units, assuming fuel at present price levels, is 5.13 mills per KWH. Assuming a prorated cost of fuel of \$0.50 per million BTU's, the estimated average total operating cost per KWH of the new units is 6.77 mills per KWH.

The development of estimated capital and operating costs for Redondo Steam Station Units Nos. 7 and 8 and for the entire Station is contained in Exhibit III to the application entitled "Estimated Capital and Operating Costs".

Applicant proposes to finance the construction of generating Units Nos. 7 and 8 from available funds or funds to be obtained through the sale of securities, applications for the issuance of which will be filed with the Commission.

Applicant also proposes to obtain all necessary permits and/or authorizations which are required from public authorities and which may be needed for the construction and operation of the new generating units and related facilities. These would include miscellaneous building and right of way permits required by authorities having jurisdiction in the premises as well as the necessary authorizations

from the air pollution control authorities of Los Angeles County. Applicant states that no additional franchises are required for the construction and operation of the new generating units and appurtenant facilities.

Applicant also states that a substantial saving in accounting costs may be realized if it is allowed to file a consolidated cost report for Units Nos. 7 and 8, and associated transmission lines one year after Unit No. 8 is placed in commercial operation.

The Commission finds that with the continuing growth in demand and energy requirements that applicant is experiencing, the generating capacity proposed herein will be needed to provide adequate and reasonable electric service to the public within the area it serves; that a substantial saving in accounting costs may be realized by applicant if it is allowed to file a consolidated cost report for Units Nos. 7 and 8 and related equipment and facilities one year after Unit No. 8 is placed in commercial operation. The Commission further finds that public convenience and necessity require the construction and operation of Units Nos. 7 and 8 at the Redondo Steam Station, as described in this application.

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

The Commission shall have no power to authorize the capitalization of the 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 a consideration for the issuance of such certificate of public convenience and necessity or right.

The action taken herein is for the issuance of a certificate of public convenience and necessity only and is not to be considered as indicative of amounts to be included in proceedings for the purpose of determining just and reasonable rates.

The Commission having considered the above-entitled application and having concluded that the application should be granted, and that a public hearing thereon is not necessary; therefore,

IT IS HEREBY ORDERED that:

1. A certificate of public convenience and necessity is granted to Southern California Edison Company to construct and operate Units Nos. 7 and 8 at its Redondo Steam Station, together with related equipment, facilities, and appurtenances.

2. Southern California Edison Company shall file with this Commission a detailed statement of the capital costs of Redondo Steam Station Units Nos. 7 and 8 and related equipment, facilities and appurtenances thereto, within one year following the date on which Unit No. 8 is placed in commercial operation.

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

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

Dated at Los Angeles, California, this
30th day of SEPTEMBER, 1964.

Fredrick B. Holbrook
President
John E. Mitchell
George H. Trover
William G. Bennett

Commissioners

Commissioner Everett C. McKeage, being necessarily absent, did not participate in the disposition of this proceeding.