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ORIGINAL

Decision No. 59990

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 generator station to be known as HUNTINGTON BEACH STEAM STATION (formerly referred to as South Coast Steam Station), together with the transmission lines and other appurtenances to be used in connection with said station.	Application No. 37862 First Supplemental (Amended)

Rollin E. Woodbury, Harry W. Sturges, Jr., and John R. Bury by Harry W. Sturges and John R. Bury, for applicant.
L. S. Patterson, for the Commission staff.

O P I N I O N

Applicant's Request

Southern California Edison Company, a California corporation, engaged in the business of generating, transmitting and distributing electricity in parts of the central and southern portion of the State of California as a public utility, filed this first supplemental application on January 13, 1959, and filed an amendment thereto on February 24, 1959, requesting a certificate that present and future public convenience and necessity require or will require the construction and operation of two additional steam-electric generating units at the Huntington Beach Steam Station. A plot plan of the location of the proposed two additional units is shown by Exhibit B attached to the amendment to first supplemental application.

Prior Authorization

Applicant refers to the fact that this Commission on June 4, 1956, by Decision No. 53187 found that Public Convenience and Necessity required the construction, operation and maintenance of the Huntington Beach Steam Station consisting of Units No. 1 and No. 2 and issued a certificate to construct, operate and maintain such station and units. Unit No. 1 was placed in operation in June, 1958, and Unit No. 2 was placed in operation in December, 1958.

Public Hearing

After due notice, public hearing was held upon this first supplemental application, as amended, on March 9, 1959, before Examiner Manley W. Edwards in Santa Ana, California. Applicant submitted three exhibits and testimony by two witnesses in support of its request. The Commission staff, represented by an electrical engineer, cross-examined the witnesses for the purpose of developing the pertinent facts as to present load, expected load growth, the availability of fuel, the economics involved in such large units and the probable effect on system earnings. No objections to the granting of the request were offered.

Proposed Plant Construction

Applicant proposes to construct two additional steam electric generating units at its Huntington Beach Steam Station to be known as Units No. 3 and No. 4, on its present coastal site, consisting of approximately 54 acres, located within the City of Huntington Beach and westerly of the Santa Ana River. Units No. 3 and No. 4 will be located adjacent to Units No. 1 and No. 2 and are each expected to have a nameplate rating of 210,000 kw resulting in a total station nameplate capacity of 820,000 kw.

It is expected that steam for Units No. 3 and No. 4 will be produced in two steam generators each having an operating capacity of 1,638,000 pounds of steam per hour for delivery to the turbine throttle at 2,400 pounds per square inch pressure and 1,050 Degrees F. temperature and built to reheat the steam leaving the high pressure turbine to 1,000 Degrees F. for return to the reheat section of the turbine.

The turbine generator for Unit No. 3 will be a cross-compound unit with a high pressure turbine and an intermediate pressure turbine on one shaft rotating at 3,600 rpm and coupled to one 128,000-kva generator, and a low pressure turbine on a second shaft rotating at 1,800 rpm and coupled to another 128,000 kva generator. The turbine generator for Unit No. 4 will be a cross-compound unit with a high pressure turbine and a low pressure turbine on one shaft rotating at 3,600 rpm and coupled to one 128,000 kva generator, and an intermediate pressure turbine and a low pressure turbine on a second shaft rotating at 3,600 rpm and coupled to another 128,000 kva generator. There will be no separate auxiliary generator as auxiliary power for the units will be obtained from the main generator bus through a transformer.

Energy will be generated at 13,800 volts and stepped up to 220 kv by three single phase 82,000 kva transformers for each unit. Sea water will be used for cooling water purposes. Applicant plans to use fuel oil and natural gas as may be available to produce steam to operate the prime movers. The proposed in-service date for Unit No. 3 is January, 1961 and for Unit No. 4 is October, 1961. These units will be designed as an outdoor type of station with centralized control facilities so that maximum use may be made of existing facilities for reasons of economy of operation.

Proposed Transmission Line Construction

The power output of the proposed new units will be transmitted to applicant's interconnected system partly through existing transmission lines and partly through new 220 kv transmission lines to be built prior to the operation of Unit No. 3. The proposed new transmission lines will consist of 4.1 miles of single circuit 220 kv line on existing towers between Huntington Beach Steam Station and Ellis Substation, and 27.6 miles of double circuit 220 kv line to be built on new towers to be erected on existing rights-of-way between Ellis, Barre, Del Amo and Lighthipe Substations. A long-range program of replacing smaller 220 kv conductors with 1,033,500 CM ACSR conductors currently is in progress in the existing transmission lines between Del Amo, Lighthipe, Laguna Bell and Mesa Substations. This program, plus the proposed new lines, will provide transmission line capacity for Huntington Beach Units No. 3 and No. 4.

Load Growth

One of applicant's witnesses testified that Edison's net peak system demand was 1,997,100 kw in 1954, and that he estimates the peak will increase to 3,900,000 kw in 1962. During the same period he testified that the net system energy requirements will increase from 10.9 billion kwhr in 1954 to an estimated 21.4 billion kwhr in 1962. For the period 1957 to 1962 the trend in growth of peak demand is:

Year	Peak Load kw	Increase in Peak over Prior Year kw	Ratio
1957 Historical	2,632,800	128,800	5.2%
1958 Historical	2,962,000	329,200	12.5
1959 Estimated	3,180,000	218,000	7.4
1960 Estimated	3,400,000	220,000	6.9
1961 Estimated	3,640,000	240,000	7.1
1962 Estimated	3,900,000	260,000	7.1

Included in applicant's load estimate are certain capacity and energy quantities to be furnished by Edison to the City of Los Angeles, pursuant to "City-Edison 1961-62 Service Agreement", during the period October 1, 1961, through September 30, 1962, in the capacity of 100,000 kw each month and in the quantity of 600,000,000 kwhr during the twelve months under an assumed load factor of 68.5 per cent.

Additional System Capacity Requirements

Applicant's present program of new capacity additions to its system is:

Date	Unit	Capability Under Favorable Steam and Hydro Conditions
May, 1959	Mandalay No. 1	220,000 kw
October, 1959	Mandalay No. 2	220,000
May, 1960	Mammoth Pool	126,000
January, 1961	Huntington Beach No. 3	220,000
October, 1961	Huntington Beach No. 4	220,000
Three-year Total		1,006,000

Offsetting these capacity additions to a certain extent are the loss of Metropolitan Water District unused capacity of 35,000 kw in April, 1959, and of 5,000 kw in April, 1960, and the placing on cold standby of Long Beach Unit No. 10 of 106,000 kw capability in May, 1959, and Unit No. 11 of 106,000 kw capability in October, 1959. This shows a net capability increase of 754,000 kw in this three-year period in contrast to a growth in peak load estimated at 678,000 kw for the years 1959 through 1961. The margin of capacity over load is about 11 per cent in applicant's proposed program. This is slightly lower than a 15 per cent operating margin which applicant considers asnecessary and reasonable. However, applicant's system is interconnected with other utilities in the Pacific Southwest

area and opportunities may be available to obtain non-firm power by purchase or to depend on mutual standby for emergencies.

Applicant's Exhibit No. 1 (1st Sup.) indicates that, without Huntington Beach Unit No. 3 and under adverse hydro conditions in January, 1961, its total system capability will be 3,439,000 kw and the estimated peak load will be 3,320,000 kw. This is a margin of 119,000 kw and will not provide for spinning reserve and capacity out for overhaul. And, by October, 1961, without either of Huntington Beach Units No. 3 and No. 4, and under adverse hydro conditions, the capability will be 3,426,000 kw and the load 3,610,000 kw.

The figures included in Exhibit No. 1 (1st Sup.) for the entire Pacific Southwest Power Area indicate that in December, 1961, the estimated margin after scheduled maintenance will be 15.9 per cent in an adverse hydro year. Applicant expressed concern that the total area margin would be undesirably low if it were not permitted to install the third and fourth units at Huntington Beach as programmed. Its general position is that it will need both units in 1961 and that it cannot rely on the Pacific Southwest power pool interconnections to make up for such a large indicated capability deficit on its own system.

Estimated Plant Cost

The increase in production capital which will result from the proposed third and fourth units at Huntington Beach including an allocation of certain joint facilities to be shared with Units 1 and 2 is estimated as follows:

Item	Unit No. 3	Unit No. 4	Allocation of Joint Facilities	Total
Land and Land Rights	-	-	$698,000	$698,000
Structures and Improvements	$1,097,000	905,000	1,956,000	3,958,000
Boiler Plant Equipment	12,609,000	11,781,000	1,400,000	25,790,000
Turbine Generator Units	12,269,000	11,983,000	2,998,000	27,250,000
Accessory Electrical Equipment	1,821,000	1,628,000	-	3,449,000
Other Equipment	1,704,000	1,053,000	836,000	3,593,000
	29,500,000	27,350,000	7,888,000	64,738,000
Cost per kw of Nameplate Capacity	$140.48	$130.24	$18.78	$154.14

The presently estimated cost of the new transmission lines, heretofore described, including terminal facilities total $3,585,750. Such capital investment is in addition to that shown above for the two units and allocation of joint equipment.

Applicant proposes to finance the construction of this steam-electric generating station and transmission lines from available funds or funds to be obtained through the sale of securities as the Commission shall hereafter, upon proper application, authorize for that purpose.

The total estimated cost of the Huntington Beach Steam Plant when completed with four units is $113,918,000, exclusive of the transmission circuits.

Annual Operating Cost

Applicant's estimated annual cost of operation for Units 3 and 4 of the Huntington Beach Steam Station, excluding common facilities is:

Annual Expense Item	Amount
Fuel (at 62.8% capacity factor and 34.2¢ per Mcf gas)	$ 7,062,000
Other Operations and Maintenance	475,000
Depreciation (straight line - 40 yr. life)	1,421,000
Ad Valorem Taxes ($6.0268 per $100 assessed value)	1,370,000
Income Taxes (54% composite rate - Fed. and State)	1,370,000
Return (6.25% on average depreciated capital)	1,821,000
Total Annual Expense	$13,519,000

On the basis of 2,200,000,000 kwhr annual output at 62.8% capacity factor the unit cost to produce energy is estimated at 6.14 mills per kwhr when burning gas fuel at the current price of 34.2 cents per Mcf. If fuel oil is used instead of gas, at an assumed price of $2.08 per barrel, the estimated unit production cost is 5.98 mills per kwhr. Applicant anticipates that ample supplies of fuel, either gas or fuel oil, should be available to supply these two additional units.

In view of the size of these two units and the large increase in rate base that will occur in the year 1962, when both of these units become fully operative, the depressing effect they may have on applicant's future earning position was ascertained. Applicant's computations indicate that if its load grows as expected and if it were able to purchase energy in lieu of building the two units, its rate of return in 1962 would be decreased by about one-tenth of one per cent lower than it would be with the installation of the two units. Since applicant's rate base will be in excess of one billion dollars in 1962, these two units will represent only about five per cent increase in rate base. Applicant's witness testified that the most economic size of unit to add to its system to handle load growth is between five and ten per cent of the peak load and that the 210,000 kw units fall in this range.

Permits, Franchises and Competition

In connection with the construction of Units 1 and 2 the applicant obtained certain permits and franchises. Applicant now proposes to obtain any additional franchises and permits from public authorities which may be necessary for the construction of the new generating units and other appurtenances. Applicant's

counsel stated that already the company has obtained permits from the Air Pollution Control District of Orange County to install Units 3 and 4, but that operation permits will not be issued until after the units are installed and tested. Applicant represents that the proposed new construction is not likely to compete with any other public utility, corporation or entity, public or private, but will provide an additional supply of electric capacity and energy to its system.

Findings and Conclusions

In view of the past trend of growth of demand for electric energy on applicant's system, it appears reasonable to project a growth trend into the future of about seven per cent and conclude that the proposed new capacity will be needed when scheduled to help supply the future public demands for electric energy. Such conclusion of course rests on the assumption that Units No. 10 and No. 11 at Long Beach, totaling 212,000 kw capability, are placed on cold standby.

It is our opinion that the applicant has the financial means to construct Units No. 3 and No. 4 and place them into successful operation. Applicant indicated it could save $40,000 in accounting costs if it could account for Units No. 3 and No. 4 as one job and that additional savings in accounting expense could be realized if it is not required to file a completion report sooner than one year after units are placed in operation. Applicant's request in this respect appears reasonable and will be granted. After considering the evidence of record in this proceeding and the showing with regard to the probable need for this additional capacity on both the applicant's system and the interconnected system serving the entire Pacific Southwest Power Area, it is our conclusion that the construction of Units No. 3 and No. 4 at the Huntington Beach Steam Station is in the public interest.

The Commission finds that public convenience and necessity require the construction, operation and maintenance of the proposed steam-electric plant additional units together with the necessary appurtenances and transmission lines, and that an order should be issued granting the certificate as requested.

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.

O R D E R

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

IT IS HEREBY ORDERED as follows:

1. That Southern California Edison Company be and it is hereby granted a certificate that present and future public convenience and necessity require or will require the construction, operation, maintenance and use of the proposed Units No. 3 and No. 4, each rated 210,000 kw and generally as described in the amendment to the first supplemental application, at the Huntington Beach Steam Station, the procurement of such permission or franchises as may be necessary for the construction or operation of the project, the production, transmission, distribution, delivery and sale of such electric energy as may be generated by such units to its present and prospective customers in accordance with its certificates of public convenience and

necessity and with its rates and rules duly filed with the Commission.

2. That applicant may account for the two units as one project and need not report separate costs for each unit.

3. That applicant shall file with this Commission a detailed statement of capital costs of Units No. 3 and No. 4 within one year following the date of completion of the units.

4. That applicant shall file with this Commission a detailed statement of the capital cost of its proposed transmission line and station improvements to feed the capacity and energy developed by proposed Units No. 3 and No. 4 into its interconnected system within six months after completion thereof.

5. That the authorization herein granted shall expire if not exercised within three 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 21st day of April, 1959.

President

Commissioners

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