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Decision No. 51798

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 Alamitos Steam Station, together with the transmission lines, new substations and other appurtenances to be used in connection with said station.	Application No. 36873

Bruce Renwick, Rollin E. Woodbury, and Harry W. Sturges, Jr., for applicant.
Leonard S. Patterson, for the Commission staff.

O P I N I O N

Southern California Edison Company, by the above-entitled application filed April 12, 1955, and subsequently amended as of May 2, 1955, requests 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, consisting of two steam-turbine-electric generators and related transmission substation structures, equipment and facilities; transmission lines and other appurtenances; and the acquisition by applicant of land, easements, rights of way, permits, licenses and other rights necessary or convenient for the purpose of constructing, installing, operating and maintaining such equipment required for this purpose. 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 proposed plant, which is to be known as the Alamitos Steam Station, will be located upon a site consisting of approximately 200 acres, located easterly of the City of Long Beach, California, between the San Gabriel River and the Los Cerritos Drainage Channel, northerly of the adjacent Seal Beach oil field.

In its original application for the construction of the Alamitos Steam Station, applicant proposed the installation of a first unit consisting principally of a steam-turbine electric generator and related structures, equipment and facilities, with a name-plate rating of 156,250 kilowatts. However, since the filing of the original application, applicant's plans changed to provide for the construction of a second unit consisting of an additional steam-turbine electric generator and related structures, equipment and facilities, also with a name-place rating of 156,250 kilowatts, all of which was set forth in the amended application filed May 2, 1955.

In the operation of the first and second units referred to above, it is proposed by applicant that steam will be produced in a separate single boiler for each such unit, each 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, and built to reheat the steam leaving the high-pressure turbine to 1,000° F. for return to the reheat section of the turbine. The steam-turbine electric generator will comprise, on a single shaft, a high-pressure turbine, a reheat turbine, a triple-flow low-pressure turbine, and an electric generator. The station auxiliary power normally will be obtained from the main generator through a transformer connected to the main generator leads.

The Alamitos Steam Station has been designed as an outdoor type station with centralized control facilities. The site will

permit future installation of two other similar units. Sea water obtained from Alamitos Bay and the Los Cerritos Drainage Channel will be used for cooling purposes, and two cooling water outlet conduits to discharge said cooling water into the San Gabriel River Channel, sized to accommodate the future two additional units, are being constructed. Natural gas and fuel oil are expected to be burned for fuel. It is anticipated that oil fuel will be delivered by pipe line from a large refinery about nine miles distant and that it will consist of high viscosity petroleum tar as well as Bunker C fuel oil and that certain on-the-site storage will be utilized in the event of interruption in refinery deliveries or other emergency. Natural gas fuel is expected also to be available from the lines of the Southern Counties Gas Company and from the City of Long Beach.

The electric energy will be generated at 18,000 volts and will be transformed to 220,000 volts for transmission a distance of approximately five and one-half miles over new 220-kv circuits to a new transmission substation, to be known as Del Amo Substation, at a location easterly of the community of Bellflower.

The proposed new transmission substation is initially scheduled for four 220-kv line positions; two 75,000-kva banks of 220/66-kv transformers; and eleven 66-kv line positions, plus necessary auxiliaries. The substation is to serve a dual purpose. First, it will act as a transmission terminal to connect the proposed new Alamitos Steam Station to the Company's interconnected 220-kv transmission system; and, second, it will serve as a source of 66-kv supply for the Lakewood, East Long Beach, Belmont, Los Alamitos, Artesia, Norwalk and La Mirada areas where the Company states there has been extraordinary load growth.

According to the record the addition of the proposed new steam station and generating units to applicant's production facilities and the new transmission lines and substation are and will be required by public convenience and necessity because of actual and anticipated growth in applicant's territory.

On the basis of recently experienced system peak demand and energy requirements and the projection for the future, applicant believes that by the latter part of 1956 the use of the first unit in Alamitos Steam Station will be required. The first unit is expected to be completed in November, 1956, while the second unit is scheduled to be completed in September, 1957, at which time applicant estimates that this additional electric-generating capacity will be required in order to provide a reasonable factor of safety of generating capacity. A chart showing the relationship of the 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 amended 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 2,420,000 kilowatts in 1957. 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 13.15 billion kilowatt hours in 1957. The annual data recorded for

the years 1950 through 1954 and estimated through 1957, as set forth in the amended application, are summarized in the following tabulation:

Year	Net System Peak Demand			Net Sys. Ener. Requirement		
		Increase Over Prior Year			Increase Over Prior Year	
	Kw (Thous.)	Kw (Thous.)	Per Cent	Kwh (Millions)	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 Alamitos Steam Station, including the two steam generating units, is estimated to cost $45,000,000, or a cost of $144 per kilowatt of name-plate capacity.

The following table summarizes the present estimate of cost, including general overheads, of the proposed Alamitos Steam Station with initial Unit No. 1, including the cost of certain joint facilities for use with future additional units, and the estimate of the additional cost of Unit No. 2, but not including the present estimate of the cost of constructing the new transmission line and transmission substation.

Cost of Plant	Unit No. 1*	Unit No. 2	Total Station
Land and Land Rights	$ 873,000	$ 15,000	$ 888,000
Structures and Improvements	1,907,000	713,000	2,620,000
Boiler Plant Equipment	9,732,000	9,919,000	19,651,000
Turbo-Generators	6,847,000	6,976,000	13,823,000
Other Equipment	4,341,000	3,677,000	8,018,000
Total Cost	$23,700,000	$21,300,000	$45,000,000
Cost per kw of Name-Plate Capacity			$144.00

* Including cost of certain joint facilities to be used with other units.

The present estimate of cost of construction of the new transmission substation, including general overheads, is $3,843,000, and for the new transmission line is $1,192,000. These estimates are all based on present price levels and assume that such levels will not change materially during the construction period.

The estimated annual cost of operating and maintaining the station with two units totals $652,000, exclusive of fuel and fixed costs. The annual cost of depreciation, taxes and return, assuming a 6 per cent return on a plant half depreciated to represent the average condition over the life span, is approximately $4,638,000. Assuming a 60 per cent capacity factor at an efficiency of 9720 Btu per kilowatt hour, the estimated fuel cost is 2.394 mills per kilowatt hour at a level of present posted fuel prices and is 3.444 mills per kilowatt hour if fuel cost of $2.25 per barrel is assumed. The present estimates of the total station expenses, by principal categories for the first two units, are summarized as follows:

Expenses (Total Station)

Fuel (at present price levels)	$3,930,000
Other Operation and Maintenance	652,000
Depreciation (straight line)	1,103,000
Income Taxes (current rates)	1,259,000
Ad Valorem Taxes (current rates)	892,000
Return (average)	1,384,000
Total	$9,220,000
Unit Cost (at Steam Station)	$0.00561

Based on the foregoing assumptions, the estimated average total cost per kilowatt hour at the steam station, assuming fuel at present price levels, is 5.61 mills per kilowatt hour; and assuming fuel at a cost of $2.25 per barrel, is 6.66 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 record applicant proposes to obtain necessary permits from public authorities, including Los Angeles County Flood Control District, Air Pollution Control Board of Los Angeles County, and any additional permits from public authorities which may be necessary for the construction of the new generating station, transmission substation and appurtenant facilities.

It was brought out at the hearing that the Los Angeles County Flood Control District has filed an action to condemn a portion of the property upon which the Alamitos Steam Station is to be located and has served a copy of the Summons and Complaint in the action upon the Southern California Edison Company. The area involved is a strip 155 feet wide along the westerly edge of the station site which constitutes that portion of the property now occupied by the Los Cerritos Drainage Channel. A representative from the Los Angeles County Flood Control District testified that this action to condemn the property would not preclude applicant from obtaining the cooling water for use in the condensers from the Los Cerritos Channel. An agreement between the Los Angeles County Flood Control District and applicant was submitted as Exhibit No. 1, in which applicant would deposit with the District upon demand the sum of $119,600, which is the estimated cost for the additional work in deepening the channel to permit the use of sea water for cooling condenser use.

Applicant proposes to finance the construction of the above-mentioned facilities from available funds or from funds to be obtained through the sale of securities, 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 facilities and that such new proposed construction is not likely to compete with any other public utility.

According to the record the growth of load in applicant's service area substantiates the need for the increased generating and transmission facilities. The provision for meeting such need by construction of the Alamitos Steam Plant and appurtenant facilities, including transmission lines and substations, is desirable from the standpoint of reliability of service to applicant's customers. Therefore, 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 convenience 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 the Alamitos Steam Station described above, with the initial installation of two units and with auxiliaries and transmission lines, and the construction, operation and maintenance of the proposed Del Amo Substation and appurtenant facilities and the acquisition by Southern California Edison Company of all necessary or convenient lands, rights of way, easements and permits and other rights required for said purposes; therefore,

IT IS HEREBY ORDERED that a certificate of public convenience and necessity be and it is granted to Southern California Edison Company to construct, operate and maintain said Alamitos Steam Station, Del Amo Transmission Substation, 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 9th day of August, 1955.

President

Commissioners