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Decision No. 59202

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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|---|---|
| Application of CALIFORNIA ELECTRIC POWER COMPANY for a Certificate Under Section 1001 of the Public Utilities Code Authorizing Construction of a Steam Electric Generating Plant and Related Transmission Lines. | Application No. 41033 |

Donald J. Carman and Kenneth M. Lemon, for applicant.
J. J. Deuel and Ralph Hubbard, for California Farm Bureau Federation, interested party.
L. S. Patterson, for the Commission staff.

O P I N I O N

Applicant's Request

The California Electric Power Company[1/] filed the above-entitled application on April 15, 1959 requesting an order of the Commission to the effect that the public convenience and necessity require and will require the construction, operation and maintenance of the first 62,000 kw unit of a new steam electric generating plant with related transmission lines to be located on lands owned by the applicant in the Northwest Quarter of Section 23, Township 9 North, Range 1 East, S.B.B. & M. about 12 miles east of Barstow, California, in the County of San Bernardino.

Public Hearing

After due notice, public hearing on this application was held before Examiner Manley W.Edwards in Barstow on September 23, 1959. Applicant presented seven exhibits and testimony by four witnesses in support of its request. The Commission staff, represented by an electrical engineer, took an active part in the hearing

1/ Hereinafter referred to as applicant, is a public utility electric corporation serving portions of the Counties of Mono, Inyo, Kern, San Bernardino, Riverside and Imperial, in the State of California, and of the Counties of Nye and Esmeralda, in the State of Nevada.

through cross-examination of the applicant's witnesses for the purposes of developing a full record to aid the Commission in deciding this matter. A representative of the California Farm Bureau Federation also cross-examined certain witnesses and presented a statement in support of the applicant's request. The matter was submitted at the close of the day's hearing and now is ready for decision.

Proposed Construction

Applicant's proposed new steam-electric power plant is to be known as the Coolwater Steam Plant, because it is located on the part of the Coolwater Ranch purchased by applicant where cooling water is available from the underground strata of the Mojave River basin at or near the proposed plant site. The steam turbine will be designed to operate at 1,800 pounds per square inch at the throttle, at 1,000 degrees F. temperature and with a reheat cycle at 1,000 degrees. There will be one large boiler, rated at 475,000 pounds per hour, of such design that it later can be converted to burn coal in addition to the present proposed natural gas and oil fuels. Gas fuel will be available from the "Texas" line of the Pacific Gas and Electric Company adjacent to the plant site and a 30,000 barrel oil storage tank will be constructed at the site. The plant will be of the "outdoor" type.

The electrical generator will be rated at 64,500 kw and the energy generated will be stepped up in voltage to 115,000 volts by means of a transformer bank located at the Coolwater Switching Station and delivered into applicant's interconnected 115 kv transmission network system.

The first unit in the Coolwater plant is expected to be completed and in service by June 1, 1961. Applicant proposes that subsequent units be installed as its load may require.

Load Growth

Applicant predicates its need for additional generating capacity on the basis of the past trend of load growth projected

into the future at varying rates. During the past seven years, 1952-1959, the load grew at an average compounded annual rate of 11.6 percent and for the purpose of this proceeding applicant has estimated future growth at the average annual rate of 8.1 percent compounded.

Applicant's Exhibit No. 1 shows the following actual and estimated sales of energy for its total system by operating years (June 1-May 31):

| Operating Years | Sales in Thousand Kwhr | Increase Ratio |
|---|---|---|
| 1951-52 Actual | 762,194 | - |
| 1952-53 " | 860,397 | 12.9% |
| 1953-54 " | 975,503 | 13.4 |
| 1954-55 " | 1,037,756 | 6.4 |
| 1955-56 " | 1,147,049 | 10.5 |
| 1956-57 " | 1,268,840 | 10.6 |
| 1957-58 " | 1,435,433 | 13.1 |
| 1958-59 " | 1,644,978 | 14.6 |
| 1959-60 Estd. | 1,777,100 | 8.0 |
| 1960-61 " | 1,924,800 | 8.3 |
| 1961-62 " | 2,078,900 | 8.0 |

Applicant represents that the capacity demands on its system have shown a similar pattern of growth and its Exhibit No. 2 shows the following relationship of capacity resources, peak demands, and margins for the critical month on its system which usually is August:

| Operating Year | August Firm Resources | August Peak Load | August Margin Kw | / Ratio |
|---|---|---|---|---|
| 1958-59 Actual | 348,000 kw | 250,000 kw | 98,000 | 39.2% |
| 1959-60 " | 385,000 | 274,000 | 111,000 | 40.5 |
| 1960-61 Estd. | 348,000 | 298,000 | 50,000 | 16.8 |
| 1961-62 Est. (a) | 348,000 | 322,000 | 26,000 | 8.1 |
| 1961-62 Est. (b) | 348,000 | 351,000 | (3,000) | (0.9) |

(Red Figure)

(a) Assuming 8.1% Compounded Growth of Peak Load
(b) Assuming 11.2% Compounded Growth of Peak Load

Applicant's Position

With either a conservative future growth rate of 8.1%, or projection of an experienced past growth rate of 11.2%, applicant represents that its studies show the need for additional plant capacity in the operating year 1961-62 on the basis of maintaining a 15 percent

margin to protect against the failure of a large unit. Applicant states that there are no more large-size hydro sites available to it; that a purchase of a large block of firm power would be more costly than adding to its steam plant capacity; and that installation of a new steam plant north and east of the San Bernardino Mountains appears to be the most economical means of adding to its system generating capacity at this time. While a new unit near Barstow would be more costly than adding a unit at its San Bernardino steam plant, the transmission line savings would more than offset the added cost. Applicant has experienced a sharp rate of growth north and east of the mountains and the location of production capacity in such area will save the cost of reinforcing its transmission lines over the mountains.

A major problem of locating a plant in this area is to obtain a source of water ample to supply the cooling water, steam, and evaporation needs of a power plant. The applicant purchased a portion of the large Coolwater Ranch (some 2,600 acres) in order to obtain the water rights and water. Its present estimate is that there is sufficient water to operate two 62,000 kw units, with the possibility of developing more water from the underground strata if more than 124,000 kw of capacity is needed near Barstow. Pending full use of the available water for steam plant purposes, applicant is farming its portion of the Coolwater Ranch in order to prove-up and hold its water rights.

Estimated Plant Costs

Applicant states that the first unit of the Coolwater plant is to be designed and constructed by the Fluor Corporation at an estimated cost of approximately $13,800,000, including land and common on-site facilities. Its Exhibit No. 6 shows the following cost segregation for Unit No. 1:

| Account Number | Title or Description | Estimated Amount |
|---|---|---|
| 310 | Land and Land Rights | $ 1,046,550 |
| 311 | Structures and Improvements | 724,400 |
| 312 | Boiler Plant Equipment | 3,820,500 |
| 314 | Turbo-Generators | 4,644,400 |
| 315 | Accessory Electric Equipment | 758,750 |
| 316 | Misc. Power Plant Equipment | 160,150 |
| 343 | Station Equipment-Transmission | 270,650 |
| | Sub total | $11,425,400 |
| | Overhead and Other Items | |
| | Overhead, Tools, Furniture and Fixtures | 396,450 |
| | Deposit for Gas Facilities | 14,200 |
| | Water Rights and Facilities additional to Site Purchase | 284,600 |
| | Contractors Fees | 915,000 |
| | Interest During Construction | 782,900 |
| | Total | $13,818,550 |
| | Cost per kw of capacity | $214.24 |

When the second unit is added at Coolwater the total estimated unit cost (at today's cost levels) will drop to approximately $180 per kw because of the ability to use the land and certain common facilities needed for the first unit without added cost. Such unit costs are compared with a unit cost of $175.60 per kw for construction of the first unit at the San Bernardino plant and $172.53 for the first unit at the Yuma Axis Steam Plant.

Applicant states that funds for the construction of Coolwater Unit No. 1 are to be obtained initially by bank loans from Bank of America, which will from time to time be refunded by proceeds from issues of bonds and stock as will, from time to time, be stated in applications to be filed with the Commission.

Annual Operating Cost

Applicant's annual estimated cost of operation for the Coolwater plant with one and two units follows:

| | Unit No. 1 | Units Nos. 1 and 2 |
|---|---|---|
| **Estimated Annual Fixed Charges and Overhead Expenses:** | | |
| Administrative and General | $ 118,400 | $ 128,900 |
| Depreciation Annuity - 6% S. F. | 121,900 | 215,300 |
| Property Taxes | 380,800 | 650,200 |
| Return @ 6% | 810,000 | 1,383,000 |
| Income Taxes (State & Fed.) @ 3.36% | 453,600 | 774,500 |
| Total Fixed Charges | $1,884,700 | $3,151,900 |
| **Unit Costs at 80 Percent Plant Factor - Mills per Kwhr.** | | |
| Fixed Charges (as above) | 4.17 | 3.49 |
| Production Expense - Excl. of Fuel | 0.68 | 0.37 |
| Fuel Expense Using Gas Fuel | 3.26 | 3.26 |
| Total Unit Exp. - Mills per Kwhr. | 8.11 | 7.12 |

In estimating a fuel expense of 3.26 mills per kwhr, applicant assumed a heat rate of 9940 Btu per kwhr and a gas price of 36.1 cents per Mcf. Applicant's studies also showed the unit cost of energy at 50 percent and 100 percent plant factor, but for the purposes of this decision an 80 percent plant factor is used as reasonable. Applicant operates its various plants at levels that will produce the most economic cost per kwhr produced and delivered taking into account system-wide fuel costs, unit efficiencies and transmission losses. For that reason it may not be realistic to assume 100 percent plant factor operation and, on the other hand, in view of the increasing need for energy in the area around Barstow, a 50 percent plant factor would probably be on the low side.

Competition, Certificates and Franchises

Applicant represents that the proposed construction does not and will not compete with other public utilities, or increase or diminish competition with other public utilities, corporations or persons, or expand or contract its service area, but merely provides a supplementary source of electric energy to be transmitted and distributed over its system as the same will, from time to time, exist.

Energy from the new steam electric generating plant will be transmitted in part to applicant's existing Gale transmission substation located approximately one mile from the plant site and into lines leading west and south from the proposed plant. At present there is no need for low voltage distribution circuits from the plant site.

Applicant states that for many years it has been distributing electric energy in certain areas also served by Southern California Edison Company and that it mailed copies of its application to the Edison Company as well as to the Board of Supervisors of San Bernardino County. No party appeared at the hearing to object to the granting of this application.

Applicant also represents that no certificate is required for the right to serve any cities or counties as energy from said plant will go into its transmission system as part of its general supply to various cities and counties which it is now and has been for many years serving and authorized to serve; and that no franchise from public authorities is necessary for the proposed construction as said plant site is located in a Zone M-2, pursuant to Ordinance No. 863 of San Bernardino County, which permits the construction, operation and maintenance of steam electric generating stations therein.

Findings and Conclusions

In view of the past trend in growth of demand for electric energy on applicant's system, it appears reasonable to project a growth trend into the future of 8.1 percent compounded, and we find and conclude that the new capacity will be needed when scheduled to help supply the future public demands for electric energy. We find that the estimated unit cost of power from this new plant is not unreasonable in light of present-day costs to produce and transmit electric energy into the Barstow area.

It is our opinion and we find that applicant has the financial means to construct the proposed project and place it into

successful operation. After considering the record in this proceeding it is our conclusion that the construction of the proposed Coolwater Steam Plant is in the public interest. Temporarily the addition of a new plant of this size may depress applicant's rate of return by about 0.2 percent but, after a reasonable load-building period, the economy of a 62,000 kw unit near Barstow should improve applicant's earning position. A smaller unit such as 35,000 or 40,000 kw probably could meet the indicated load growth, but applicant prefers the 62,000 kw size for long-run economic reasons.

The Commission finds that public convenience and necessity requires and will require the construction, operation and maintenance of the proposed steam-electric plant with only the first unit therein, together with the necessary appurtenances and transmission lines to make the plant a part of the interconnected system, and that an order should be issued granting the certificate substantially 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 the franchise involved herein as 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 charges) actually paid to the State as the consideration for the issuance of such certificate of public convenience and necessity.

## O R D E R

The above-entitled 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 that California Electric Power Company be and it is hereby granted a certificate that public convenience and necessity requires and will require the construction, operation, maintenance and use of the proposed Unit No. 1 at the Coolwater Steam

Plant consisting of a 62,000 kw unit, related appurtenances and transmission lines as described in the application; the procurement of land, land and water rights, license or permission as may be necessary for the construction, or operation of the plant with Unit No. 1; the production, transmission and distribution, delivery and sale of such electric energy as may be generated by this unit 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.

IT IS HEREBY FURTHER ORDERED that applicant shall file with this Commission a detailed statement of capital costs of the generator plant with Unit No. 1 within six months following the date of completion of said Unit No. 1.

The authorization herein granted shall expire if not exercised within three years after the date hereof.

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

Dated at San Francisco, California, this 27th day of October, 1959.

President

Commissioners