

Decision No. 9582

BEFORE THE RAILROAD COMMISSION OF THE STATE OF CALIFORNIA.

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ORIGINAL

In the Matter of the Application of)
Merced Irrigation District and San)
Joaquin Light and Power Corporation)
for an order approving a certain)
agreement between the parties; and)
for a further order fixing and es-)
tablishing the rate to be charged)
and paid for electric energy to be)
sold and delivered under the provi-)
sions of said agreement.)

Application No. 6967

A. L. Cowell, J. D. Galloway and W. D. Wagner
for Merced Irrigation District,

Murray Bourne for San Joaquin Light and Power
Corporation,

John S. Partridge for Water Users and Tax Payers
Association of Merced.

ROWELL and BENEDICT, COMMISSIONERS:

O P I N I O N

Merced Irrigation District, hereinafter referred to as the Irrigation District, and San Joaquin Light and Power Corporation, hereinafter referred to as the Power Company, jointly apply for the approval of two agreements between them, one covering the diversion of water by the Irrigation District from one of the Power Company's hydro-electric plants, the other covering the sale of electric power to the Power Company by the Irrigation District, and for the fixing of a reasonable rate to be paid for such power. The Irrigation District joins in the application

through its mutual interest in the approval of the contract and its recognition of the jurisdiction of the Railroad Commission over the Power Company.

The Irrigation District proposes to bond itself and to construct a large storage dam across the Merced River near Exchequer, about twenty-five miles northeast of Merced, creating a reservoir of some 250,000 acre feet capacity. The water of the Merced River stored therein during the flood season will later be released, allowed to follow the natural course of the stream for several miles and will then be diverted for use in the irrigation of lands around Merced. It is proposed to install a power plant at the dam and pass the water through this plant as it is released. The use of water will be primarily for irrigation purposes and its passage through this plant must be governed accordingly. Pondage in the river between the power plant and diversion dam will permit daily variation in the flow of water and the regulation of the load on the power plant to meet the requirements of the Power Company.

One of the contracts presented for approval and filed as "Exhibit B" provides that a power plant of 25,000 K.W. capacity is to be built and operated by the Irrigation District; that the output of this plant is to be measured at the switchboard but that the Irrigation District will furnish step-up transformers and deliver power to the Power Company on the outgoing transmission line; that the plant is, within certain limits, to be operated at the load factor of the Power Company's system, and that the rate to be paid by the Power Company for the power shall be fixed by the Railroad Commission.

The Power Company now owns and operates a small generating station at Merced Falls, a few miles below the site of the Exchequer dam. The water supply and consequently the operation of this plant will be affected by the storage of water at Exchequer and the diversion of water from the stream above the Falls Plant. A separate contract, filed in this proceeding as Exhibit "A", provides that the Irrigation District shall pay the Power Company at the rate to be fixed herein for the decrease in the output of the present Merced Falls plant below a fixed standard. This is in effect a sale of part of the Power Company's water right and as such has already been approved by this Commission except as to compensation, (Decision No. 9187, June 30, 1921). The contract now awaiting approval is that covering the sale of power from the Exchequer plant.

The Water Users and Tax Payers Association of Merced, an organization of property owners within the area covered by the District objecting to the bonding of the district for the construction of the proposed works, objects to the consideration by the Commission of the matters herein presented and at the same time urges that the Commission give consideration to the advisability of carrying out the development proposed. The question as to whether or not the people of this district should bond themselves as proposed is clearly outside of the jurisdiction of the Railroad Commission as fixed by law, is beyond the scope of the order requested by these applicants and is a matter to be settled only by the people of the district themselves.

The proposed development of hydro-electric power being as a by-product and for the purpose of realizing a profit which will partially carry the cost of the main irrigation

works, the cost to the Irrigation District of developing power is clearly not the proper standard by which to fix a rate for the sale of that power. It has been agreed by both applicants in this proceeding that the proper basis of such a rate is the cost to the Power Company's consumers of developing equivalent power elsewhere by the Power Company itself and all of the studies of the question have been made along this line.

The Power Company presented figures showing the average cost of hydro-electric and steam power as generated in its existing plants and after giving consideration to the relative amounts of steam and hydro-electric power that would be replaced by the proposed purchase of power arrived at a rate of 3.825 mills per kilowatt hour.

The Irrigation District urges that the power which it proposes to deliver to the Power Company will be in addition to that now generated and instead of being substituted for part of the power now produced will be substituted for power which must otherwise be developed in the future and that the costs to be used should be those of future rather than past construction. Information before the Commission indicates that the Power Company will have little or no difficulty in absorbing the output of the Exchequer plant and we must, therefore, hold that the position of the Irrigation District is sound.

Curves and data submitted by the applicants and by the Commission's Engineering Department show that the seasonal distribution of the output of the Exchequer plant will be very similar to that of the average hydro-electric plant depending upon unregulated stream flow for its water supply. At first thought this does not appear in keeping with the proposed

storage and extensive use of water for irrigation purposes late in the summer. It must be remembered, however, that the plant which the District proposes to install operates under the head of water back of the dam and that as the storage is drawn upon this head decreases, falling quite rapidly as the reservoir is emptied and its area decreased. It appears reasonable to conclude that the value of power supplied by the Irrigation District to the Power Company should be measured by the cost to the public of future developments of stream flow plants to be constructed by the utility.

In an effort to determine the average cost of future developments calculations of the cost of power from a number of plants already built were submitted by Mr. J. D. Galloway, Consulting Engineer of the Irrigation District, and by Mr. L. S. Ready, the Commission's Assistant Chief Engineer. These costs are summarized in the following table:-

TABLE NO. I
COST OF PRODUCTION OF HYDRO-ELECTRIC ENERGY
AT CERTAIN POWER PLANTS.

	<u>Mr. Galloway</u> <u>mills per K.W.H.</u>	<u>Mr. Ready</u> <u>mills per K.W.H.</u>
San Joaquin Light & Power Corp.		
Total hydro-electric output	4.32	
Merckhoff Plant	4.77	4.23
Southern California Edison Company		
Stream flow plants, exclusive of Kern River No. 3		3.24
Kern River No. 3	6.50	6.40
Kern River No. 1		2.53
Borel		5.60
Average of Stream Flow Plants		4.35
Same, increased by 3% for Gen. Exp.		4.48
Merced Irrigation District - Exchequer Plant		
Considering fixed charges on entire development	8.34	6.57
Considering fixed " on power development only		1.95

It will be noted that Mr. Galloway's figures are uniformly higher than those of Mr. Ready. This difference is accounted for in general by a different method of handling such items as taxes and general expense. Mr. Galloway has included in the estimates of cost of production a proportion of State taxes, while Mr. Ready excluded this item on the ground that State taxes are levied as a percentage of gross revenue and will be the same whether the Company buys power or produces it itself. Mr. Galloway since the hearing has advised that this inclusion was in error, agreeing in general with Mr. Ready. He has included in the cost of production a part of the General Expense of the Companies operating the individual plants considered, while Mr. Ready it will be noted has allowed for this item of cost after averaging the costs for various individual plants. The plants considered here are all on streams tributary to the southern San Joaquin Valley and are, as far as it is possible to find them, plants which have been built under the general physical conditions to be expected in future developments of San Joaquin Light and Power Corporation. Some of the plants considered were constructed many years ago when prices were much lower than at the present time and others, notably Kerckhoff Plant of the San Joaquin Light and Power Corporation, and Kern River No. 3 Plant of the Southern California Edison Company, were constructed during the extreme peak of high prices and represent costs which are in all probability considerably higher than those which will obtain in the future. Mr. Ready, therefore, considers that the average cost of power from these two classes of existing plants is a fair measure of the average cost of power from future developments and arrives at an average rate of 4.48 mills per kilowatt hour. He

recommends that a rate of 4.5 mills per kilowatt hour be fixed in this proceeding as compared with the rate requested by the Irrigation District of 6 mills and that urged by the Power Company of 3.825 mills.

An analysis of the average cost of power on the Southern California Edison Company's system submitted by Mr. Ready shows that the average cost of all hydro-electric energy produced by that Company represents a charge of 4.25 mills per kilowatt hour on the power plant switchboard. The cost of power delivered at the end of the transmission line, including steam plant standby costs and accounting for losses in transmission, was 8.9 mills. This latter cost compares quite closely with the rate charged the Mt. Whitney Power and Electric Company in 1919 for power delivered to it and other large wholesale power rates. Some question has arisen as to the higher rate of 7.5 mills recommended by Mr. Ready as the rate for power delivered from Great Western Power Company of California to Pacific Gas and Electric Company. In this instance the power, costing on the average 4.25 mills per kilowatt hour at the switchboard of the power house, is transmitted approximately 150 miles before delivery. On the same basis the cost increases to over 7.5 mills per kilowatt hour at the delivery point.

Applying this recommended rate of 4.5 mills per kilowatt hour to the energy output of the District as estimated by its own engineers shows a probable gross revenue from the sale of power of approximately \$450,000 per year. On the same basis \$190,000 per year should be deducted for the operating expense of the plant and the fixed charges on the additional development required for the production of electric power, leaving approximately \$260,000 per year applicable to the fixed charges on the irrigation development. According to the estimates this

is more than half of the fixed charges on the dam and reservoir required for irrigation purposes.

The contract specifies in Section IX as follows:

"Irrigation District agrees, in case of an emergency or during the failure of other generating stations of Power Company not extending over twenty-four (24) hours, to operate its power plant at full capacity for that period."

This part of the agreement is not sufficiently definite in the limitations of the obligation of the District to meet the full approval of the Commission. The number of times a year that the District would be required under this contract to operate its plant in case of emergency should be limited to very few instances.

Viewing the situation from the standpoint of the Irrigation District it would seem that a rate for power sold should be eminently satisfactory when it will not only cover the entire cost of producing the power but will in addition meet over half of the fixed charges on the cost of the dam and reservoir required for the irrigation development. This is particularly true when it is remembered that any additional amount received by the Irrigation District for this power must in the end be paid by the consumers of the Power Company who are in general residents of the San Joaquin Valley and many of them residents of the territory covered by the Irrigation District itself.

The Power Company has experienced a remarkable growth, the increase in its business during recent years amounting to about 25% annually, and it has been no easy task for it to finance and construct power developments to meet the demands of its consumers. The development and delivery by the Irrigation District of a substantial block of power will without question be of considerable assistance. If this power is delivered to

the Power Company at a rate closely approximating the cost of similar power from its own future developments there can be no doubt that the purchase of this power will be of benefit to it and to its consumers.

We find that the proposed contract as filed in this proceeding should be approved and that 4.5 mills per kilowatt hour is a reasonable rate to be paid for the energy to be delivered thereunder.

We submit the following form of Order:

O R D E R

Merced Irrigation District and San Joaquin Light and Power Corporation having applied to the Railroad Commission for an order approving certain agreements, copy of which were attached to the application filed herein and marked Exhibit "A" and "B", and for a further order fixing the rate for the purchase and sale of the electric energy to be sold under the terms of said contract marked Exhibit "B", and agreement marked Exhibit "A" having been approved by previous order of the Commission, a public hearing having been held for the presentation of evidence bearing on the approval of said agreement marked Exhibit "B" and on the fixing of said rate for electric power, the matter being submitted and now ready for decision,

IT IS HEREBY ORDERED that San Joaquin Light and Power Corporation be, and is, authorized to enter into an agreement with Merced Irrigation District for the purchase of electric energy substantially in form as shown in Exhibit "B" filed in this proceeding modified to limit more definitely the obligation of

the District to operate its plant in emergencies.

IT IS HEREBY FURTHER ORDERED that 4.5 mills per kilowatt hour be, and is, declared to be a reasonable rate to be paid by San Joaquin Light and Power Corporation for power purchased from Merced Irrigation District in accordance with the terms of said contract.

The foregoing Opinion and Order are hereby approved and ordered filed as the Opinion and Order of the Railroad Commission of the State of California.

Dated at San Francisco, California, this 19th
day of August, 1921.

H. D. ...
H. D. ...
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... ..
J. J. ...
Commissioners.