

BEFORE THE RAILROAD COMMISSION OF THE STATE OF CALIFORNIA

WILLIAM WAX et al.,
Complainants,

vs.

SIERRA AND SAN FRANCISCO POWER
COMPANY, a corporation, and
PACIFIC GAS AND ELECTRIC COMPANY,
a corporation,
Defendants.

Case No. 1397.

TUOLUMNE COUNTY, a Body Politic,
Complainant,

vs.

SIERRA AND SAN FRANCISCO POWER
COMPANY, a corporation, and
PACIFIC GAS AND ELECTRIC COMPANY,
a corporation,
Defendants.

Case No. 1419.

In the Matter of the Application of
PACIFIC GAS AND ELECTRIC COMPANY, a
corporation, for an order authoriz-
ing the abandoning of water service
from Columbia Ditch in Tuolumne Coun-
ty, or, in esse such abandonment be
not authorized, for an order fixing
and determining the amount of water
to which the respective consumers and
claimants to service from said Col-
umbia Ditch are entitled, and for an
order authorizing an increase of rates
for water service through and from
said Columbia Ditch.

Application No. 5572.

In the Matter of the Application of
PACIFIC GAS AND ELECTRIC COMPANY, a
corporation, for an order authoriz-
ing an increase of rates for water
sold to its consumers in the County
of Tuolumne.

Application No. 5736.

C. P. Cutten, and Chickering & Gregory by Evan
Williams, for defendants and applicants.

Grant & Zinders, by Wm. Grant, and J. C. Web-
ster, for Tuolumne Water Users Association
and for complainants and protestants.

Rowin Hardin, District Attorney, for Tuolumne
County.

J.T.B. Warren, City Attorney, for the City of Sonora.

MARTIN, Commissioner.

O P I N I O N

Complaint was made in Case No. 1397 by William Wax and other water users on the Columbia Ditch, a unit of the Tuolumne Water System, against the Sierra and San Francisco Power Company, then owner and operator of the Tuolumne Water System, engaged in selling water for domestic, irrigation and mining use in Tuolumne County, and in the generation, distribution and sale of electrical energy in Tuolumne, Stanislaus, San Joaquin, Contra Costa and San Francisco Counties.

The complaint alleges that for the preceding three years complainants had not received sufficient water for their crops by reason of the poor condition of the ditch, flumes and pipe lines on the Columbia Ditch, and asks that defendant be required to make the necessary repairs to the various structures and to the ditch proper, that water may be delivered in sufficient quantities to meet the requirements of the consumers.

The answer of the Sierra and San Francisco Power Company denies all of the allegations of complainants, and alleges that the water use through the Columbia Ditch is uneconomical and wasteful due to the fact that it is used only for irrigation purposes, whereas if the water were diverted through the Phoenix power plant it would be used for two purposes, namely, power and irrigation. Defendant therefore asks permission to abandon service on the Columbia Ditch. It is further alleged that if water in excess of what was delivered on Columbia Ditch in the year 1916, namely, 10,140 miner's inches for 24 hours, is furnished, defendant will be forced to reduce the output of its Phoenix power plant, and also diminish the deliveries of water for irri-

gation and other purposes in other parts of its system. Defendant further alleges that the quantity of water delivered to the consumers in 1916 is the maximum to which the consumers on the Columbia Ditch are entitled, and that the remainder of the water diverted for use on the system is dedicated for other uses in other parts of the system. Defendant therefore asks for a determination of the quantity of water it is obligated to serve on the Columbia system, if any obligation exist, and that the rate be increased from 12½ cents per miner's inch to 50 cents per miner's inch per 24 hours.

A supplemental answer in this matter was filed by defendant which set out the fact that the properties of defendant had been leased with the permission of the Commission for a period of 15 years to the Pacific Gas and Electric Company. The Railroad Commission thereupon issued its order substituting Pacific Gas and Electric Company as defendant in this proceeding, in the place of Sierra and San Francisco Power Company.

Subsequently the Pacific Gas and Electric Company applied for authority to abandon the Columbia Ditch, for the reason set out in the answer of the Sierra and San Francisco Power Company, and asked that in the event the application was denied, the quantity of water to be delivered on the Columbia Ditch be determined, and that a just and reasonable rate be established.

This application was followed by Application No. 6736, asking for the establishment of reasonable rates for water for all classes of service in Tuolumne County upon the ground that the rates in effect are non-compensatory.

Complaint in Case No. 1419 was filed by Tuolumne County against both the Sierra and San Francisco Power Company and the Pacific Gas and Electric Company, and alleges that defendants

have acquired the properties of several water companies which were devoted to the public use of supplying water to the inhabitants of Tuolumne County; that defendants diverted water from the South Fork of the Stanislaus River to the main Stanislaus River for power purposes; that this water was dedicated to use in Tuolumne County; that the demands for water exceed the present supply; that a certain area known as the Blanket Creek section desires water for irrigation purposes and can be served by an extension of the present ditch system, but defendant has refused to make the necessary extension. Complainant therefore asks that all the waters of the South Fork of the Stanislaus River be made subject to the demands of the water users of Tuolumne County; that defendants be enjoined from diverting the waters of the South Fork to the Main Fork of the river to the detriment of the water users of Tuolumne County, and that defendant be required to extend its ditch system to the "Blanket Creek" section.

Defendants in their answer deny all of the allegations of the complaint and allege that Tuolumne County is entitled only to a portion of the water from the South Fork of the Stanislaus River and that this quantity has been delivered and will continue to be delivered to the users who are entitled to the service.

The above proceedings were consolidated and hearings therein were held at Sonora and San Francisco, of which all interested parties were notified and given an opportunity to appear and to be heard.

The record shows that this system is a combination of several ditches constructed in the early days. The so-called Tuolumne Water System was constructed almost entirely in the early fifties to supply the placer mines of that time. When these

mines became exhausted many of the ditches were abandoned but other laterals were built to supply the quartz mines which were opened after placer mining ceased. As the quartz mines were gradually worked out it became necessary to develop other uses for the water in order to hold the properties, and to that end irrigation was encouraged and power uses developed, and these have now almost entirely supplanted the mining use. The history of this system is typical of the other foothill ditch systems, as they have all had the problem of converting a mining property into irrigation and power properties.

The water is obtained by diversion from the South Fork of the Stanislaus River and its tributaries, being derived from the melting snows in the Sierras.

The demands upon the system during the summer months are greater than the normal stream flow and the supply is supplemented by water drawn from storage reservoirs, of which there are four, namely: Herring, Upper Strawberry, Lower Strawberry and Lyons, having a total capacity of approximately 21,400 acre feet, of which 5,199 acre feet, according to applicant, are dedicated to use in Tuolumne County. The present Lower Strawberry Reservoir has a capacity of approximately 18,000 acre feet and is constructed on the site of an old reservoir of the same name which had a capacity of 1,790 acre feet. 16,210 acre feet of the capacity of the present reservoir is diverted through the Philadelphia Ditch and dropped into the Middle Fork of the Stanislaus River through the Spring Gap and Stanislaus hydro-electric power plant, being then not available for irrigation in Tuolumne County.

The water used on the Tuolumne Water System is diverted from the South Fork of the Stanislaus below Lyons Reservoir, conveyed through the main ditch, and divided between the Eureka System, Phoenix power plant and the Columbia System. The Eureka system supplies water for domestic and irrigation purposes to the towns.

of Tuolumne and Soulsbyville and the adjacent territory. The Columbia System supplies consumers in Columbia and vicinity. Water passing through Phoenix power plant, which has a capacity of 32 cubic feet of water per second with a drop of 1100 feet, is collected in Phoenix reservoir and thence distributed through various ditches for irrigation and mining use in the vicinity of Sonora and Jamestown, and for domestic purposes in these towns. There are approximately 167 miles of ditches in the Tuolumne system, of which 63 miles are at present non-operative. There are in all approximately 900 consumers of all classes and about 1,800 acres are irrigated.

The Columbia Ditch was constructed to convey water to the Columbia District for mining purposes, and was acquired and consolidated with the other ditches by defendant's predecessors. The water for this ditch is not diverted through the Phoenix power house and is not available for generation of power in that plant. It is 14.37 miles long and is located on a limestone formation that permits excessive seepage losses. In 1920 the water sales from the ditch were as follows:

	No.	Use Miner's Inches	Revenue
Domestic consumers	9	143	\$69.25
Irrigation	40	5092	636.50
Mining	1	4092	511.52
	<u>50</u>	<u>9327</u>	<u>\$1217.27</u>

Sales in 1916 were approximately equal to those in 1920.

Due to the fact that water sold from the Columbia Ditch cannot be used for the generation of electric power, defendant contends that its operation is uneconomical and that, because of the comparatively small revenues derived from the sale of water therefrom, the service is not compensatory. Attention is directed to the fact that while a combination of irrigation and hydro-

electric uses of water is preferable and admittedly most economical, yet the location of the Columbia section does not permit the double use.

In dealing with the question of rates for water service on the various units comprising the Tuolumne system, the Commission believes that the facts do not warrant the conclusion that these units are severable, and that rates can be prescribed for each independently of the other. On the contrary, the evidence shows that these various ditches comprising the Tuolumne system have been, and should continue to be, operated as a whole, and that the reasonableness of the rates as applied to any particular unit should be based upon a consideration of the operating conditions of the entire system.

It is plainly apparent that service on the Columbia Ditch at the present time, during what may be termed the period of transition, and with a few consumers, is comparatively expensive, and no rate could be established on this particular unit of the Tuolumne system which, at one and the same time, would be compensatory to the utility and which the consumers could afford to pay. Nevertheless, the abandonment of service on the Columbia Ditch would be so serious and such a vital deprivation to the consumers that it is felt that abandonment should not be permitted and that the company itself and consumers on other portions of the system should help carry the cost of service in the Columbia section until that area shall become self-sustaining. At one time the Columbia section was highly prosperous and yielded millions in gold. Water then was very valuable for mining purposes and was also employed profitably in irrigation, as the products of the soil could be readily sold to advantage near at hand. But in the course of time the inevitable change came in the Columbia section. Today there is a scarcity of population and a slump in industry in Columbia and vicinity. Mindful of

the past and hopeful of the future, it seems only fair that the Columbia section should be carried along.

To some degree the whole area served by the ditch system of the Pacific Gas and Electric Company, as lessee of the Sierra and San Francisco Power Company, is comparable to the Columbia section. The entire district has had the same history in industrial and agricultural development and as a whole is dependent upon the Tuolumne system for water. The future agricultural, and to some extent, the industrial growth is entirely dependent upon an adequate water supply, and all sections should have equal opportunity to participate in the present supply and should cooperate in obtaining an additional supply. The continuation of service to the Columbia section offers the company and the community an area for expansion in a section which was profitably productive at one time and may become so again.

According to the testimony, service conditions on the Columbia Ditch have been greatly improved by necessary repairs, and the defendant proposes additional repairs and replacements which should further improve service and remove ground for most of the complaint.

It was contended by counsel for Tuolumne County that all the waters of the South Fork of the Stanislaus River were dedicated to use in Tuolumne County, and the claim was made that this was shown by the articles of incorporation of the various companies organized in the early days to distribute water from this stream, and was proven further by the actual use of the water in early days in Tuolumne County. Much testimony was introduced purporting to show that the original capacity of the flumes and the main ditch was far in excess of the quantity of water diverted and delivered, and that the county has been retarded in its development because of the diminished quantity of water available for use.

This Commission has jurisdiction over the rates and service and practices of a utility engaged in the distribution of water. It has no control over diversion of water, either as to the right or the quantity. It finds a utility distributing a certain quantity of water. The Commission presumes that the utility has legally acquired the right to distribute that amount of water. If this right is to be questioned or adjudicated this Commission is not the tribunal that is vested with authority. The State Water Commission (now the Department of Public Works, Division of Water Rights) was created for the purpose of controlling the initiation of water rights in California, of determining and adjudicating existing rights on a stream, and after adjudication to see that the waters are properly distributed to those legally entitled to the use thereof. The matter of adjudication or ascertainment of the various water rights on the Stanislaus River was held recently by the State Water Commission. The matter was submitted and a decision rendered holding that Tuolumne County was entitled to 52 second feet of natural flow of the South Fork of the Stanislaus River, and to 5,199 acre feet of the stored water held in storage reservoirs within the watershed of that fork of the river. Subsequently the matter was re-opened at the request of defendant, Pacific Gas and Electric Company, protesting the quantity of water allowed the Oakdale and South San Joaquin Irrigation Districts. However, a decision on the protest will not affect the original decision relative to the quantity of water held available for use in Tuolumne County. The adjudication of rights to the waters of the South Fork of the Stanislaus is within the jurisdiction of the Water Commission, and its decision, following confirmation by the Superior Court, is final.

The evidence relative to the Blanket Creek District demands for extension of service, shows that it would require construc-

tion of a ditch of about 24 miles at an approximate cost of \$100,000. According to the testimony there are at present about 80 acres cultivated in the Blanket Creek section, but the Blanket Creek Association claimed it would have 600 acres under cultivation in three years and that there would be required about 30,000 miner's inch days per annum. The revenues from this quantity of water under the present rate of 12½ cents a miner's inch per day would amount to \$3,700, or \$7,500 if the present rates were doubled. This return would not justify such an investment and would result in a burden upon the other consumers.

The Pacific Gas and Electric Company as lessee operates the so-called Tolueme Water System, which, as stated before, is used in distributing water for mining, irrigation and domestic use. The water for domestic use is supplied to about 870 consumers in the towns of Tolueme, Sonora and Jamestown. All the consumers are served on a flat rate basis beginning with a basic charge of \$1.00 per month for a residence, with extra charges for additional facilities. About 1800 acres of orchards, gardens and some pasture are irrigated from the system. The irrigation and the mining water is sold on a measured basis of 12½ cents per miner's inch per 24 hours.

Mr. H. J. Smith, engineer for the Pacific Gas and Electric Company, submitted an appraisal showing an estimated cost of that portion of the Tolueme System used in supplying water in the county, amounting to \$791,174. This sum is made up of the following items abstracted from an appraisal of the Sierra and San Francisco system by Mr. Carl J. Rhodin, which was based upon prices of labor and materials during 1916-1917 when the Philadelphia Ditch was constructed:

Organization	\$4,090
Franchise	50
Water Rights	92,800
Lands	36,005
Forward	\$132,945

Herring Reservoir	\$3,626	
Upper Strawberry Reservoir.	16,309	
Iyons Reservoir	15,399	
Lower Strawberry Reservoir.	33,474	
Main Ditch.	127,559	
Phoenix Reservoir	40,120	
Eureka System	47,810	
Columbia System	88,419	
Phoenix Algerine System	57,741	
Shaw Flat-Table Mountain System	100,112	
Sonora-Jamestown System	48,081	578,650
Distribution Mains.		57,523
Services.		7,591
Hydrants.		671
General Structures.		5,058
General Equipment		738
Working Capital		7,000
Materials and Supplies.		1,000
Total.		\$791,176

In the foregoing estimate of cost of that portion of the system used in supplying water in Tuolumne County the total estimated cost of the main storage reservoirs and main canal has been segregated upon the basis of one half to water and one half to power uses. The distribution system is allocated entirely to water used and the Phoenix power plant entirely to power.

Mr. William Stava, one of the Commission's hydraulic engineers, presented an appraisal setting forth an estimated original cost of the entire Sierra and San Francisco property in the Tuolumne division, including water and electrical facilities, amounting to \$1,706,583. Of this amount \$900,000 represents the cost of the new Strawberry Dam which replaces the Lower Strawberry Reservoir and is mainly chargeable to the Stanislaus power development, and \$97,296 represents electric power development not chargeable to water. Making corrections for these and segregating the balance as outlined above indicates an estimated original cost of the properties used in supplying water in Tuolumne County of \$613,357. The difference between this figure and that submitted by the applicant is accounted for by the fact that Mr. Stava's estimate did not include allowances for some intangibles, and that his unit costs were based upon pre-war conditions.

Testimony shows that the price paid by the Sierra and San Francisco Power Company for both the water and electrical facilities in the Tuolumne system, together with capital expenditures made since the date of purchase, amounts to approximately \$500,000, including water

rights and other intangibles. Based upon the foregoing segregation of water and power facilities, \$368,000 should be allocated to property used in supplying water in Tuolumne County.

Evidence was presented to show that the main canal and flumes were originally constructed to carry 250 cubic feet of water per second, and in 1853 did actually carry that amount. Some time in the eighties the sides of the flumes were lowered and the capacity was reduced to 85 second feet. Later a submerged weir was installed in the flume near the intake, which further reduced the section and limited the diversion to approximately 47.5 second feet as found by actual measurement. Testimony also shows that the present section of the main ditch does not equal the original section, which is probably due to silting of the ditch.

No testimony was introduced relative to overbuilding of the distribution system, but in view of the very clear showing as to the original carrying capacity of the main canal, it is reasonable to conclude that so much of the distribution system as was in existence at the time the main canal was built had a carrying capacity similar to that of the main canal. However, the extent of overbuilding of the system cannot be definitely determined from the testimony submitted, and it is evident that consideration should be given to other factors, such as the fact that this property was originally constructed for mining purposes and is now being converted to other uses, the feasibility of constructing such ditches for the irrigation service rendered, and the possibilities of increasing the areas irrigated.

Mr. Stava's estimate of reasonable annual maintenance and operating expense for the future amounted to \$33,700, while applicant's estimate of such expense is \$43,810. Testimony shows that various items in Mr. Stava's estimate should be increased and that applicant's estimate should be adjusted. Attention is

called to the fact that the allowances made for taxes in both estimates are less than one half of the actual amounts which will be assessed against the property in the future.

A careful consideration of all the evidence indicates that a reasonable estimate of future annual maintenance and operating expense is \$43,145, and that the depreciation annuity calculated by the sinking fund method will amount to \$2,643.

Annual charges based upon the foregoing items will be as follows:

Return at 8% upon \$368,000.	\$29,440
Depreciation Annuity.	2,643
Maintenance and Operating Expense	<u>43,145</u>
Total.	\$75,228

Revenues and use of water during the year 1920 have been as follows:

Class of Service	Revenues	Sales of Water :In Miner's Inch Days:
Domestic	\$17,857	57,380
Commercial	2,694	21,743
Mining	8,453	65,892
Irrigation	7,717	49,544
Totals	\$36,721	194,559

A comparison of the foregoing annual charges and revenues indicates that an increase in rates is justified. It should be noted that the total revenues for 1920 were less than the estimated reasonable annual maintenance and operating expense for the immediate future.

A study of the total quantities of water diverted into the ditch system during the irrigation seasons, May 15th to October 15th, for the years 1913 to 1920 inclusive, indicates an average diversion of 237,588 miner's inch days, and a maximum of 264,973 in the year 1920. Based upon a full diversion of 52 cubic feet

per second there could have been turned into the head of the system a total of 328,240 miner's inch days, or twenty-four per cent. more than was actually diverted in the year 1920.

During the irrigation seasons of 1913 to 1920 inclusive, there was actually delivered to consumers an average of 109,526 miner's inch days, with a maximum 129,491 during the season of 1913.

The average amount of unaccounted for water during this eight-season period was 128,062 miner's inch days. This was 54 per cent. of the average diversion and was 18,536 miner's inch days in excess of the average amount delivered to consumers. This percentage of water unaccounted for does not represent the actual loss in the system, as in the spring months large quantities of water are turned out at the spillways of the various ditches and from Phoenix Reservoir when there is little demand for water and when there is a plentiful flow in the river. Repairs and betterments to the system, made by Pacific Gas and Electric Company within the past few years, should result in a material reduction of the actual system losses.

It would therefore appear that there is additional water available for irrigation and mining and that a much larger acreage can be irrigated from the present supply. However, it also is apparent that there is not sufficient water to irrigate all the land that may be reached from the present canal system and that it will be necessary to develop additional water by storage to supply this land. This means expensive construction and it is an expense that the company would not be warranted in making unless assured of a return in a reasonable period. While there is no doubt that the area in question is capable of extensive development through an adequate water supply it would be unfair to expect the utility to make this expenditure and add the investment

as a burden to the present consumers, while this new development is under way. For this reason it is suggested that when it becomes necessary to develop more storage, some co-operative plan be worked out by Tuolumne County and the company for financing this project.

Attention is again directed to the dependency of this area for water on the present ditch system. Tuolumne County is dependent on the one watershed, namely, the Stanislaus, for its present and also for its future water supply, and, as stated before, its future industrial and agricultural development hinges on a dependable and adequate supply of water. The company, on the other hand, whose interests are largely in electrical property, is not limited to the Stanislaus River, or to any one watershed for the development of water for power. It is feasible to enlarge many of its present installations that extend throughout the Sierras, or it can develop new projects capable of development to meet its needs. It seems fair and right, therefore, that Tuolumne County should be given consideration by the company in any future development of water in the Stanislaus River shed, and at the same time it is highly important that the county should adopt some constructive policy toward conserving water for use within its borders. It appears reasonably probable that the best results may be secured by the county and the company in co-operation.

Considerable complaint was made by various consumers regarding the service of irrigation water. This especially applies to the Columbia section. It appears that there are no definite rules and regulations for the delivery of water, the custom being for a consumer to notify a ditch tender or the office at Sonora that a specified quantity of water is desired at a certain time. Usually the request is complied with by the ditch tender, if pos-

sible. However, the quantity of water available and the demands of the other consumers often prevent prompt delivery, and give rise to complaints of delay, and no doubt injuries to crops have resulted. This method of delivery causes a waste of water through indiscriminate service up and down a ditch, makes it impossible for the company to intelligently allocate the supply to the various ditches, and, as stated, causes complaints and damage through delayed deliveries.

The order in these proceedings will require rules and regulations providing for a rotation schedule of deliveries. This will allow the company to arrange regular periods of deliveries, thereby improving the service and effecting a saving of water. A proper rotation schedule of deliveries will also permit the utilization of a greater portion of the available supply through an orderly spreading of water use over the entire irrigation season.

A study of the use of water on this system was made and presented by Mr. C. E. Monett, one of the Commission's hydraulic engineers. Very little information as to actual water use could be obtained in this area, due to the irregularity of the irrigation methods employed and the lack of records on the character of crops. Mr. Monett therefore applied the use of water as found on the lands irrigated by the Excelsior Water and Mining Company in Yuba and Nevada Counties, the conditions being similar to those in this area. The use of water as found on various crops in the Excelsior system is as follows:

Meadows	3.27	acres	per	miner's	inch
Orchards	4.10	"	"	"	"
Alfalfa and forage	2.72	"	"	"	"

Applying a net use of 3.27 acres per miner's inch, 52 c.f.s. or 2,080 inches would irrigate 6,350 acres. Assuming 25% loss for seepage, leakage and evaporation in the canals and flumes,

4,750 acres could be irrigated. Assuming a loss of 40%, which is more probable, 3,800 acres could be irrigated. The testimony indicated that the duty of water for orchards could be assumed as 1 to 2 acre feet per acre, equivalent to $7\frac{1}{2}$ to $3\frac{3}{4}$ acres per miner's inch, and for alfalfa the duty is estimated as 3 acre feet per acre, or $2\frac{1}{2}$ acres per miner's inch, and approximates the duty assumed.

A questionnaire to the water users of the Tuolumne system dated November 18, 1917, shows that the land actually irrigated in 1917 was 1,427 acres, and that 8,561 acres were cleared and suitable for irrigation. The questionnaire of 1920 shows that 1,787 acres were irrigated that year and that 24,475 acres were capable of being irrigated from the ditch system. Of this acreage 19,776 acres were reported cleared and 10,832 acres as being cultivated.

It appears therefore that less than one half the acreage for which water is available is being irrigated. However, the domestic and mining supply must be provided for from the 52 c.f.s. and this will reduce the quantity of water available for irrigation.

Considering the greatly improved condition of the system and the reduction of losses in transmission, together with the possible improvement in operating methods through the establishment of the rotation system of deliveries, it appears reasonable to assume that several hundred additional acres could at this time be added to the area served. Future operation of the system will demonstrate what further additions may safely be made. Care should be taken that the increased irrigated area be not so large as to injuriously affect the present consumers.

Representatives of Tuolumne County contended that the power property should be combined with the water system in establishing

rates, as the Tuolumne Water System had always been operated as a unit until it was acquired by the Sierra and San Francisco Power Company. It was further contended that the revenues from the sale of power would be sufficient to pay all operating expenses and give a sufficient return on the investment so that it would not be necessary to increase rates.

Property used by a company in the development and distribution of electricity is considered by the Commission in the establishment of electric rates, and the profits of a company are limited to a fair return. Exactly the same thing is true of water service. The electric unit in Tuolumne County may be more profitable than other units on the system, due to favorable operating conditions, but the total return from the system as a whole must be and is considered in establishing a reasonable rate.

Attention is directed to the fact that the Commission is called upon to establish fair and proper rates for various classes of utility service, among which are rates for electricity. In establishing such electric rates it is the Commission's duty and endeavor to adopt only those rates which yield a fair or reasonable return upon the property used in affording the service. To allow a rate which produced not only a reasonable profit upon the electric properties but an amount additional which would overcome a deficit accruing in another and separate department of the utility's activities, would result in burdening one class of consumers at the expense of another class.

It was testified that the power plant was installed for the purpose of producing additional revenue and holding water rights when the water use at the mines was gradually decreasing and some other use had to be developed. The plant was installed in 1898 and the revenue derived therefrom was sufficient to pay operating expenses and a return on the investment, and at the same time

maintain the low water rate, as the water had two uses.

Due to the interconnection of the generating plants of the Pacific Gas and Electric system it is impossible to determine the revenues derived from the energy generated at Phoenix power plant. However, the amount generated is measured and recorded in the annual reports filed with the Commission. At the request of Mr. Grant, attorney for Tualumne County, for an approximation of the gross revenue derived from this energy, Mr. Dodge of the Commission's Gas and Electric Division prepared a statement showing an approximation, which was reached by computing the average return per K.W.H. from the total energy generated by Sierra and San Francisco Power Company, and the gross revenue, and applying this price per K.W.H. to the output at Phoenix. Due to the variety of rates charged on the system and the multiplicity of uses to which energy is applied, it is clear that the result obtained is the roughest of approximations, and is as follows:

	<u>1918</u>	<u>1919</u>	<u>1920</u>
Estimated Revenue from energy produced at Phoenix power plant.	\$55,054	\$59,447	\$79,050

No estimates of the expenditure required to operate this plant were submitted, nor the investment required, nor operating expenses and fixed charges incurred in distributing the energy to the consumers, so that the above estimated revenue does not represent a figure of any real value. However, the Sierra and San Francisco Power Company definitely separated the power from the water property and operated the system as two activities, and this arrangement is being continued by the Pacific Gas and Electric Company as lessee. For this reason the latter company, applicant herein, has made application for the establishment of rates for the purpose of making the water end of the property pay its share of the expenses incurred in operating it, and to yield a return. As the water property has been operated and considered a unit or a separate business, the Commission will establish rates on the basis of its being an independent unit.

As has been stated before, it is apparent that the applicant is entitled to an increase in rates, but it is also obvious that it would be unfair to compel the present consumers to pay a rate which would at this time provide a full return upon the entire investment. The rates recommended are therefore based upon what the service is reasonably worth at this time, and compare favorably with the rates established by the Commission in other localities where fairly comparable conditions obtain.

It is difficult to establish flat rates for industrial plants such as the Standard Lumber Company, the Sierra Railway Company, and the Sonora Ice and Storage Company. It is recommended that the large users be placed on a measured basis so that the quantity may be determined and a proper charge established for the service. For this reason a measured rate will be recommended in order that certain discriminations in the old schedule of flat rates may be eliminated.

In order that a satisfactory and workable system of rotation deliveries of water may be put into effect it will be necessary for consumers to make application to the company setting forth the quantities of water required for use during the irrigation season. Such applications should be filed sufficiently in advance of the opening of the season to inform the utility of its probable obligations in regard to deliveries of water.

The following form of order is submitted:

O R D E R

William Wax and other consumers on the Columbia Ditch, and Tuolumne County, a body politic, having complained to the Railroad Commission regarding the service rendered by the Sierra and San Francisco Power Company, a corporation, and the Pacific Gas and Electric Company, a corporation, lessee, and the Pacific Gas and Electric Company having applied to the Railroad Commission for

authority to abandon the water service from Columbia Ditch or for an order determining the quantity of water which should be allocated to this ditch and increasing the rates for service on the ditch, and having further applied for authority to increase the rates for water sold to its consumers in Tuolumne County, and these matters being consolidated for hearing, public hearings having been held, and the matters having been submitted,

The Commission heroby makes its FINDINGS OF FACT as follows:

1. The service heretofore rendered by the Pacific Gas and Electric Company and its predecessors in interest on the water system known and described as the Tuolumne System, including the Columbia Ditch and other ditches in Tuolumne County connected with said system, has been and is now insufficient and inadequate, due in part to the wastage of water by leakage resulting from the porous condition of the soil through which the distribution system is constructed, from the failure of the utility to make proper repairs and improvements in the distribution system, and in part to the failure of the utility to place in effect upon said system proper rules and regulations for the service of water to consumers on a plan of rotation which would enable the utility to make a most efficient use of the water available for distribution.

2. The Pacific Gas and Electric Company, the utility at present operating said system, has, since its acquisition of control of the property, pursued a constructive policy in making repairs and improvements on the ditches, pipes and other structures.

3. The quantity of water available for use in Tuolumne County from the Tuolumne System, as determined by the State Water Commission, is 52 cubic feet per second of the natural flow of the South Fork of the Stanislaus River, and 5199 acre feet of storage in reservoir within the watershed of said system.

4. The entire supply of water controlled by the utility, Pacific Gas and Electric Company, on the South Fork of the Stanis-

laus River or within the watershed of that river in excess of said 52 cubic feet per second of natural stream flow and of said 5199 acre feet of storage has been, and is now being used by said utility for the generation of electric power for sale and distribution to the public, and is thereby dedicated to public use for hydro-electric purposes.

5. The quantity of water available for use on the Tuolumne System is sufficient, under the proper method of conservation and distribution, for the present needs and uses in Tuolumne County and for some extension of service in excess of present uses; but the present available supply is not sufficient for service to the entire irrigable area under the Tuolumne Ditch system, and in order to serve such entire area an additional supply will have to be developed.

6. That the rates now charged by Pacific Gas and Electric Company, lessee, for water delivered to consumers from the Tuolumne System are unjust and unreasonable in so far as they differ from the rates herein established, and that the rates herein established are just and reasonable rates for such service.

And basing its order upon the foregoing findings of fact and upon the statements of fact contained in the preceding opinion,

IT IS HEREBY ORDERED:

1. That the Pacific Gas and Electric Company, lessee of the properties of Sierra and San Francisco Power Company, be and the same is hereby authorized and directed to file with this Commission, within five (5) days from the effective date of this order, the following schedule of rates, to be charged for all water delivered to consumers in Tuolumne County subsequent to July 1, 1922:

DOMESTIC AND COMMERCIAL SERVICE

Metered Rates:

Monthly Minimum Payments:

5/8 inch meter	\$1.25
3/4 " "	1.50
1 " "	2.00
1 1/2 " "	2.50
2 " "	3.00
3 " "	4.00
4 " "	5.00

Monthly Rates for all Water Used:

From 0 to 500 cubic feet, per 100 cubic feet .	\$0.25
" 500 to 3000 " " " " " " " .	0.15
Over 3000 " " " " " " " .	0.05

Monthly Flat Rates:

For residences of 5 rooms or less.	\$1.25
" each additional room10
" " bath tub.30
" " toilet.30
" " washing machine50
Stores and shops	1.25
Dental offices	1.50 to 4.00
Printing establishments.	1.50
Saloons or soft drink establishments	2.00
Bakeries	2.00
Drug stores.	1.25
Blacksmith shops	1.50
Barber shops - 2 chairs or less.	1.50
Each additional chair.50
Each bath tub.50
Soda fountains, either alone or in connection with other business.	1.50
Fire plugs	1.00
Private fire hydrants.	0.30
Laundries, hotels, and other establishments not listed above to be charged at meter rates.	
Sprinkling or irrigation of lawns or gardens, per square yard of surface actually irrigated. . .	0.003
In case of question as to classification of a consumer under the above flat rates, a meter shall be installed and service given under meter rates.	

IRRIGATION AND MINING USE

For all water delivered at the ditch or ditches
of the company, per miner's inch per 24 hours,
or the equivalent thereof in amount (1 miner's
inch being equivalent to one fiftieth of one
cubic foot per second) \$0.25

2. That Pacific Gas and Electric Company, lessee, be and the same is hereby directed to file with this Commission, within ten (10) days from the effective date of this order, rules and regulations to govern its relations with consumers, such rules and regulations to provide for the establishment and operation of a rotation system of delivery of water for irrigation use, said rules and regulations to become effective upon their acceptance by the Commission.

3. That 32/52 of the entire available supply be allocated for use through Phoenix power plant and the ditches below and tributary thereto, and that 20/52 of the available supply be allocated to the ditches diverting from the main canal above Phoenix power plant; that no specific quantity be allocated to users on Columbia Ditch, but that the supply allotted thereto be proportionately divided among the users on all the ditches diverting from the main canal above Phoenix power plant.

4. That Pacific Gas and Electric Company, lessee, be and the same is hereby directed to file with this Commission within sixty (60) days from the effective date of this order, a program of improvement of the facilities on the Tuolumne System.

5. That the portion of Application No. 5572 relating to abandonment of water service from the Columbia Ditch be and the same is hereby denied.

6. That the effective date of this order is hereby fixed and designated as June 25, 1922.

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 14th day of
June, 1922.

H. P. Rounding

James Martin

Charles A. Rowlee

J. F. [unclear]
Commissioners.