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Decision 89 04 060 APR 26 1989 APR 26 1989

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of California Water Service Company (U 60 W), a corporation, for an order authorizing it to increase rates charged for water service in the Los Altos-Suburban District.	Application 88-04-070 (Filed April 28, 1988; amended July 11, 1988)
In the Matter of the Application of California Water Service Company (U 60 W), a corporation, for an order authorizing it to increase rates charged for water service in the South San Francisco District.	Application 88-04-075 (Filed April 28, 1988; amended July 11, 1988)

A. Crawford Greene, Attorney at Law, and Donald L. Houck, for California Water Service Company, applicant.
Lawrence O. Garcia, Attorney at Law, and Richard Tom, for the Commission Advisory and Compliance Division, Water Utilities Branch.

I N D E X

O P I N I O N

Summary of Decision

We authorize California Water Service Company (CWS) to increase rates in its Los Altos-Suburban (LAS) and South San Francisco (SSF) Districts as shown below:

District	1989 Amount	1989 Percent	1990 Amount	1990 Percent	1991 Amount	1991 Percent
Los Altos-Suburban	$290,000	4.55%	$263,700	3.95%	$127,200	1.83%
South San Francisco	349,500	10.24	190,700	5.07	115,300	2.92

A rate of return on rate base of 11.33% for 1989, 1990, and 1991 is found to be reasonable. The authorized return on common equity is 12.25%. The following tables show, for each district, the adopted summary of earnings at present and authorized rates for test years 1989 and 1990.

TABLE 1

California Water Service Company

Los Altos District

Adopted Summary of Earnings

	1989 Present	1989 Authorized
	(Thousands of Dollars)	
Total Revenues	$ 6,380.3	$ 6,670.3
Operating Expenses		
Oper.& Maint.	3,614.4	3,614.6
Adm.& Gen.	78.7	78.7
Gen.Off.Alloc.	621.4	621.4
Depreciation	403.4	403.4
Other Taxes	274.7	278.6
State Franch.Tax	40.1	66.7
Federal Inc.Tax	266.0	354.5
Total	5,298.8	5,417.9
Net Income	1,081.5	1,252.4
Rate Base	11,054.5	11,054.5
Rate of Return	9.78	11.33

	1990 Present	1990 Authorized
	(Thousands of Dollars)	
Total Revenues	$ 6,506.7	$ 6,934.0
Operating Expenses		
Oper.& Maint.	3,697.2	3,697.5
Adm.& Gen.	82.1	82.1
Gen.Off.Alloc.	649.5	649.5
Depreciation	430.7	430.7
Other Taxes	285.5	291.0
State Franch.Tax	35.8	75.0
Federal Inc.Tax	252.9	383.3
Total	5,433.6	5,609.0
Net Oper. Revenue	1,073.1	1,325.0
Rate Base	11,694.4	11,694.4
Rate of Return	9.18	11.33

TABLE 2

California Water Service Company

South San Francisco District

Adopted Summary of Earnings

	1989 Present	1989 Authorized
	(Thousands of Dollars)	
Total Revenues	$ 3,412.8	$ 3,762.3
Operating Expenses		
Oper.& Maint.	1,781.2	1,781.6
Adm.& Gen.	82.9	82.9
Gen.Off.Alloc.	439.6	439.6
Depreciation	257.8	257.8
Other Taxes	121.4	121.4
State Franch.Tax	9.3	41.8
Federal Inc.Tax	106.9	214.9
Total	2,799.0	2,939.9
Net Income	613.8	822.4
Rate Base	7,258.7	7,258.7
Rate of Return	8.46	11.33

	1990 Present	1990 Authorized
	(Thousands of Dollars)	
Total Revenues	$ 3,501.7	$ 3,953.0
Operating Expenses		
Oper.& Maint.	1,851.8	1,852.3
Adm.& Gen.	85.7	85.7
Gen.Off.Alloc.	466.7	466.7
Depreciation	273.6	273.6
Other Taxes	127.4	127.4
State Franch.Tax	3.8	45.7
Federal Inc.Tax	90.2	229.7
Total	2,899.1	3,081.0
Net Oper. Revenue	602.6	872.0
Rate Base	7,696.1	7,696.1
Rate of Return	7.83	11.33

The authorized rates reflect our water rate design guidelines which provide for phasing out lifeline rates and for recovery of up to 50% of fixed costs through service charges. Applicant's request for authority to establish a sales-related balancing account adjustment mechanism (SAM) in the SSF District will be considered in a another proceeding (Application (A.) 88-05-045) which is currently before us. Applicant's request for authority to establish a SAM in the LAS District is denied.

Summary of Applications

On April 28, 1988 CWS filed applications requesting rate adjustments for its LAS District (A.88-04-070) and its SSF District (A.88-04-075) designed to produce returns on rate base of 12.26% in 1989, 12.27% in 1990, and 12.28% in 1991 and a constant return on equity (ROE) of 13.75%. CWS claims that these rates of return are the minimum necessary for it to maintain its credit standing, obtain new capital at a reasonable cost, and provide a fair and reasonable return on equity. On July 11, 1988 the company filed amendments to the applications requesting additional rate increases because of estimated sales decline associated with conservation in the LAS District and mandatory rationing in the SSF District. CWS also sought authority to establish a SAM in each district.

Based on the proposed returns on capital and estimates of revenues, expenses, and rate base, CWS requests the following revenue increases:

District	1989		1990		1991	
LAS						
Original App.	$ 551,200	8.4%	$185,100	2.6%	$185,100	2.5%
Amended App.	1,121,100	19.5%	-61,300	-0.9%	340,700	4.7%
SSF						
Original App.	$417,200	11.5%	$180,100	4.5%	$180,000	4.3%
Amended App.	692,700	22.1%	23,000	0.6%	285,700	7.0%

CWS, whose general offices are in San Jose, California, provides water service in 21 separate operating districts located

throughout the state. As of December 31, 1987 the company had an investment in utility plant of $367,002,154 (including utility plant under construction), served 337,783 customers, and employed 538 persons. The gross operating revenue for 1987 was $112,775,722. At the end of 1987 there were approximately 5,976 stockholders.

The LAS District provides service to approximately 17,400 customers in most of the City of Los Altos and adjacent fringe areas of the cities of Cupertino, Los Altos Hills, Mountain View, Palo Alto, and Sunnyvale, and Santa Clara County. Operating revenue from the sale of water in this district was $6,940,200 in 1987.

The SSF District provides service to approximately 14,700 customers in the Cities of South San Francisco and Colma and a section of San Mateo County lying between those cities. Operating revenue from the sale of water in this district was $3,796,600 in 1987.

Background

CWS served copies and provided notice of the applications in accordance with the Commission's Rules of Practice and Procedure. Shortly after the applications were filed, the Water Utilities Branch of the Commission Advisory and Compliance Division (CACD) scheduled informal public meetings in each of the districts to provide customers with an opportunity to discuss the proposed rate increases and related issues with representatives of both the utility and staff. Notice of these meetings, which were held in June 1988, was included with a summary of the applications which CWS mailed to each customer. In addition to the CACD Project Manager, the meetings were attended by the Executive Vice President of CWS and the local district manager. There were 7 customers in attendance at each meeting. CACD reports that there were no complaints raised about service or water quality at the South San Francisco meeting, and only one complaint, concerning sand in the

water, was raised at the Los Altos meeting. That complaint was resolved the following day, according to the Commission's files.

The Commission's formal files include letters from nine customers in the LAS District. Most of these expressed customers' concerns about either the magnitude of the rate increases proposed in the amended application or the possibility that rates would not be reduced after the drought is over and sales return to normal.

As part of its investigation, CACD made a study of the company's water quality and its overall level of service. On a company-wide basis, it found that CWS renders good service, and goes out of its way to accommodate customers who have complaints about service or water quality. In reviewing the company's complaint files for the districts subject to these applications, CACD found that almost all complaints are resolved within a day or two. CACD believes that the number of meter over-reads could be reduced in the SSF District. Based on this review and the results of its informal public meetings, CACD concludes that the overall service provided in each district is satisfactory.

Public participation hearings were held in Los Altos on October 31, 1988 and in South San Francisco on November 2, 1988. Statements were heard from five parties in Los Altos and from six parties in South San Francisco. Echoing the concerns expressed in the correspondence from the customers in Los Altos, several parties urged that any rate increases due to drought conditions be made temporary, and that the company share in the hardships imposed by the drought by accepting smaller rate increases.

Evidentiary hearings were held in San Francisco on November 8 and 9, 1988. At the request of the parties, the consolidated record from proceedings involving applicant's Dixon, Hermosa-Redondo, King City, Marysville, and Willows Districts (A.88-04-071, et. al.) was combined with these matters. The Dixon, et al., proceeding was considered in D.89-04-005.

Applicant presented its evidence through testimony and exhibits introduced by its Executive Vice-President, Donald Houck; its Chief Financial Officer, Treasurer, and Vice-President Harold C. Ulrich; its Director of Water Quality, Raymond Taylor; and the Assistant Chief Engineer, Michael Rossi. The CACD presented its case through the testimony and exhibits of Senior Utilities Engineer/Project Manager Richard Tom and Utilities Engineers Donald Yep, Peter Liu, Larry Hirsch, and Antoine Gamarra, all of the Water Utilities Branch. CACD also called Regulatory Program Specialist Phebe A. Greenwood of the Division of Ratepayer Advocates as its cost of capital witness.

The only comments received on the Administrative Law Judge's proposed decision consisted of a request to correct typographical misprints in Appendix C-1. The requested corrections have been incorporated in this order.

Issues

During the course of these proceedings representatives of applicant and CACD reached agreement on most expense and rate base items. The discussion which follows focuses on the areas of disagreement which remain between CWS and CACD, which are listed below:

Disputed Issues

1. Rate of Return
   a. Capital Structure
   b. Return on Equity
2. Tax on Unbilled Revenue
3. Ductile Iron Pipe
4. Working Cash
5. General Office
   a. Outside Services Expenses
   b. Pension and Benefit Expenses
   c. Plant Retirements

6. Consumption and Sales Estimates

7. District Other Operation Expense

8. Paving at South San Francisco Reservoirs 3 & 4

9. Rate Design and Sales Adjustment Mechanism

Tables 3 through 6 show CWS's and CACD's final estimates of the results of operations for each district, at present rates, for test years 1989 and 1990.

TABLE 3

Comparison of Applicant's and Staff's Summary of Earnings
Los Altos District, Test Year 1989
(Dollars in Thousands)

Item	Applicant	Differences	Staff
Operating Revenues	$ 6,247.9	$(147.8)	$ 6,395.7
Operating Expenses			
Purchased Power	519.1	(21.2)	540.3
Purchased Water	1,632.3	0.1	1,632.2
Groundwater Charges	394.2	(45.1)	439.3
Replenishment Assessment	0.0	0.0	0.0
Purchased Chemicals	0.0	0.0	0.0
Payroll - District	598.9	0.0	598.9
Other O & M	480.8	22.1	458.7
Other A & G and Misc.	15.7	0.0	15.7
AD Valorem Taxes - District	145.4	0.0	145.4
Business License	0.0	0.0	0.0
Payroll Taxes - District	46.7	0.0	46.7
Depreciation	403.4	0.0	403.4
Ad Valorem Taxes - G.O.	2.3	0.0	2.3
Payroll Taxes - G.O.	12.7	0.0	12.7
Other Prorates - G.O.	607.1	2.1	605.0
Balancing Account Adjustment	135.0	135.0	0.0
Subtotal	4,993.6	93.0	4,900.6
Uncollectibles	4.1	(0.1)	4.2
Business License	0.2	0.0	0.2
Local Franch. Tax & Bus. Lic.	80.8	(1.8)	82.6
Local Franchise Tax	0.0	0.0	0.0
Income Taxes	256.7	(58.2)	314.9
Total Operating Expenses	5,335.4	32.9	5,302.5
Net Operating Revenues	912.5	(180.7)	1,093.2
Rate Base	11,092.7	67.2	11,025.5
Rate of Return	8.23%	-1.69%	9.92%

TABLE 4

Comparison of Applicant's and Staff's Summary of Earnings
Los Altos District, Test Year 1990
(Dollars in Thousands)

Item	Applicant	Differences	Staff
Operating Revenues	$ 6,445.2	$(159.9)	$ 6,605.1
Operating Expenses			
Purchased Power	532.6	(17.8)	550.4
Purchased Water	1,646.1		1,646.1
Groundwater Charges	437.7	(51.9)	489.6
Replenishment Assessment	0.0	0.0	0.0
Purchased Chemicals	0.0	0.0	0.0
Payroll - District	628.9	0.0	628.9
Other O & M	501.9	25.3	476.6
Other A & G and Misc.	15.9	0.0	15.9
AD Valorem Taxes - District	151.6	0.0	151.6
Business License	0.0	0.0	0.0
Payroll Taxes - District	49.6	0.0	49.6
Depreciation	430.7	0.7	430.0
Ad Valorem Taxes - G.O.	2.5	0.0	2.5
Payroll Taxes - G.O.	13.3	0.0	13.3
Other Prorates - G.O.	634.8	3.3	631.5
Balancing Account Adjustment	135.4	135.4	0.0
Subtotal	5,181.0	95.0	5,086.0
Uncollectibles	4.2	(0.1)	4.3
Business License	0.2	0.0	0.2
Local Franch. Tax & Bus. Lic.	83.3	(2.0)	85.3
Local Franchise Tax	0.0	0.0	0.0
Income Taxes	254.8	(61.8)	316.6
Total Operating Expenses	5,523.5	31.1	5,492.4
Net Operating Revenues	921.7	(191.0)	1,112.7
Rate Base	11,741.9	103.9	11,638.0
Rate of Return	7.85%	-1.71%	9.56%

TABLE 5

Comparison of Applicant's and Staff's Summary of Earnings
South San Francisco District, Test Year 1989
(Dollars in Thousands)

Item	Applicant	Differences	Staff
Operating Revenues	$3,391.3	$(51.2)	$3,442.5
Operating Expenses			
Purchased Power	112.2	0.1	112.1
Purchased Water	904.3	(28.7)	933.0
Groundwater Charges	0.0	0.0	0.0
Replenishment Assessment	0.0	0.0	0.0
Purchased Chemicals	0.9	0.0	0.9
Payroll - District	462.0	0.0	462.0
Other O & M	358.6	21.6	337.0
Other A & G and Misc.	20.8	0.0	20.8
AD Valorem Taxes - District	83.0	0.0	83.0
Business License	2.0	0.0	2.0
Payroll Taxes - District	36.4	0.0	36.4
Depreciation	257.8	0.1	257.7
Ad Valorem Taxes - G.O.	1.6	0.0	1.6
Payroll Taxes - G.O.	9.0	0.0	9.0
Other Prorates - G.O.	429.5	1.5	428.0
Balancing Account Adjustment	0.0	0.0	0.0
Subtotal	2,678.1	(5.4)	2,683.5
Uncollectibles	3.6	0.0	3.6
Business License	0.0	0.0	0.0
Local Franch. Tax & Bus. Lic.	0.0	0.0	0.0
Local Franchise Tax	0.0	0.0	0.0
Income Taxes	135.1	8.3	126.8
Total Operating Expenses	2,816.8	2.9	2,813.9
Net Operating Revenues	574.5	(54.1)	628.6
Rate Base	7,284.4	43.3	7,241.1
Rate of Return	7.89%	-0.79%	8.68%

TABLE 6

Comparison of Applicant's and Staff's Summary of Earnings
South San Francisco District, Test Year 1990
(Dollars in Thousands)

Item	Applicant	Differences	Staff
Operating Revenues	$3,491.0	$(120.7)	$3,611.7
Operating Expenses			
Purchased Power	116.6	(2.8)	119.4
Purchased Water	994.1	(56.9)	1,001.0
Groundwater Charges	0.0	0.0	0.0
Replenishment Assessment	0.0	0.0	0.0
Purchased Chemicals	0.9	0.0	0.9
Payroll - District	485.0	0.0	485.0
Other O & M	377.0	25.3	351.7
Other A & G and Misc.	20.5	0.0	20.5
AD Valorem Taxes - District	86.8	0.0	86.8
Business License	2.0	0.0	2.0
Payroll Taxes - District	38.6	0.0	38.6
Depreciation	273.6	0.5	273.1
Ad Valorem Taxes - G.O.	1.8	0.0	1.8
Payroll Taxes - G.O.	9.4	0.0	9.4
Other Prorates - G.O.	456.1	2.0	454.1
Balancing Account Adjustment	0.0	0.0	0.0
Subtotal	2,812.4	(31.9)	2,844.3
Uncollectibles	3.7	(0.1)	3.8
Business License	0.0	0.0	0.0
Local Franch. Tax & Bus. Lic.	0.0	0.0	0.0
Local Franchise Tax	0.0	0.0	0.0
Income Taxes	111.7	(9.8)	121.5
Total Operating Expenses	2,927.8	(41.8)	2,969.6
Net Operating Revenues	563.2	(78.9)	642.1
Rate Base	7,722.7	67.3	7,655.4
Rate of Return	7.29%	-1.10%	8.39%

Rate of Return

The rate of return on a utility's rate base is a composite value of the cost of capital incorporating costs of long-term debt, preferred stock, and common equity. These costs are weighted according to the firm's capital ratios, i.e. the ratios of the respective capital components to total capital. As shown in the following table, CWS requests rates of return on rate base of 12.17% in 1989, 12.19% in 1990, and 12.21% in 1991, in order to earn a return on common equity (ROE) of 13.75%. Staff recommends that the adopted ROE be within a range from 11.75% to 12.25%, and further advocates that the low point of 11.75% be adopted. Largely because its ROE recommendation is two percentage points (200 basis points) less than CWS's, and partly because it urges approval of somewhat lower equity ratios, the rates of return recommended by staff are lower than CWS's by 110 basis points for 1989 and by slightly greater amounts for 1990 and 1991.

Requested/Recommended Rates of Return

	Applicant			Staff		
	Capital Ratios	Cost Factors	Rate of Return	Capital Ratios	Cost Factors	Rate of Return
1989						
Long-term Debt	44.40%	10.54%	4.68%	45.25%	10.55%	4.77%
Preferred Stock	1.70	4.41	0.08	1.75	4.19	0.07
Common Equity	53.90	13.75	7.41	53.00	11.75	6.23
	100.00%		12.17%	100.00%		11.07%
1990						
Long-term Debt	43.90%	10.55%	4.63%	45.25%	10.56%	4.78%
Preferred Stock	1.70	4.41	0.08	1.75	4.19	0.07
Common Equity	54.40	13.75	7.48	53.00	11.75	6.23
	100.00%		12.19%	100.00%		11.08%

1991

Long-term Debt	43.40%	10.55%	4.58%	45.25%	10.56%	4.78%
Preferred Stock	1.60	4.41	0.07	1.75	4.19	0.07
Common Equity	55.00	13.75	7.56	53.00	11.75	6.23
	100.00%		12.21%	100.00%		11.08%

Applicant's and Greenwood's initial estimates of long-term debt costs were apart by nearly 50 basis points. As a result of discussions which took place during these proceedings, the parties have reached agreement on estimates of new long-term debt costs. A new bond issue of $18 million in 1988 (CWS's Series BB) will carry an interest rate of 9.48% and, including issuance costs, an estimated effective cost of 9.60%. Planned issues of $3 million in 1989, and $4 million each in 1990 and 1991 will have an estimated effective cost of 10.50%. Combining these costs with the embedded costs of outstanding debt, CWS estimates the average cost will be 10.54% in 1989 and 10.55% in 1990 and 1991. The parties agree on estimated costs of the new debt issues, and their remaining differences on debt costs amount to only one basis point. We therefore adopt CWS's estimates as reasonable.

Greenwood's estimates of the effective dividend rates on preferred stock reflect the 1988 liquidation of all but Series C holdings. The effective cost of this series is 4.19%. Greenwood notes that CWS's higher cost estimate of 4.41% for preferred stock was made prior to the liquidation of Series D, E, F, G, H, and K, which took place in the second quarter of 1988. Greenwood's recommendation is based on more current information and will therefore be adopted.

Capital Structure

CWS's projections show that its equity ratio will be 53.90% in 1989, 54.40% in 1990, and 55.00% in 1991. Greenwood believes that because of the relatively low financial and business risk faced by the company, ratios this high are not required. Because equity costs more than debt financing, she claims that

excessive capital costs would be passed on to ratepayers if these ratios are approved for ratemaking purposes. She recommends that a limit of 53.00% be imposed for each of the three years.

Greenwood's analysis shows that the company's equity ratio has steadily increased in recent years, growing from 42.47% in 1983 to 55.10% in 1987. In each of the past five years, CWS's ratio exceeded the group average of eleven comparable water utilities by a steadily growing margin, as shown in the following table:[1]

Equity Ratios

	CWS	Group Average	Difference
1983	42.47%	38.56%	3.91%
1984	45.18	39.82	5.36
1985	47.73	40.60	7.13
1986	51.79	44.34	7.45
1987	55.10	46.12	8.98
1983-87 average	48.45%	41.53%	6.92%

Greenwood explains that the growth in CWS's equity ratio has resulted because its cash flow has exceeded cash requirements. According to staff, one indicator of excess cash flow is the growth in the ratio of internal cash flow (net income plus depreciation plus deferred taxes and investment tax credits less total

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1 For the purpose of this and other financial analyses, staff selected a group of water utilities which are listed in C.A. Turner's Telephone and Water Utility Reports, earn at least 70% of total revenues from water operations, and whose stock is regularly traded. The eleven companies meeting these criteria are American Water Works, Connecticut Water Service, Consumers Water, E'Town Corporation, The Hydraulic Company, IWC Resources Corporation, Middlesex Water, Philadelphia Suburban Co., SJW Corporation, Southern California Water, and United Water Resources. We discuss the issue (raised by applicant) whether these companies can be compared to CWS in the following section on return on equity.

dividends) to net construction outlays (additions to utility plant less contributions and advances net of refunds). This ratio, which is a measure of the ability to fund construction outlays with internal cash sources, rose from 68.28% in 1983 to 118.48% in 1987. Also, CWS's payout ratio (the proportion of earnings available to common stock which is actually paid to stockholders in dividends) during this period was 60%, compared to an average of 66.72% for the group of eleven comparable water companies.

Greenwood testified that in an optimal capital structure, the costs of different modes of financing will be appropriately balanced in accordance with the company's financial risk:

> "Debt financing is cheaper than equity financing, yet increases in the debt ratio also increase financial risk. Debt financing is cheaper for two reasons: interest payments on debt are usually cheaper than returns paid to company stockholders, and debt interest is tax deductible while returns on common equity are not. Although debt is less expensive, it has the disadvantage of increasing financial risk; furthermore, the more a company is leveraged, the more expensive marginal debt issues become. As a company's financial risk increases, lenders are scarcer and must be attracted by higher returns. Company management must therefore balance the use of cheaper debt against the loss of flexibility of use of working cash and the increased risk of a higher level of fixed obligations."

Staff acknowledges that with higher equity ratios, debt financing becomes cheaper, but goes on to note there are limits to this benefit. First, lower cost financing affects the cost of new debt issues only. For example, CWS's planned bond issue of $3 million in 1989 represents less than 5% of the company's total debt. Also, CWS already enjoys a high AA2 bond rating from Moody's and a similarly high rating of AA+ from Standard and Poor's. Greenwood concludes that for CWS's ratepayers, there is no benefit

in raising the equity ratio in order to improve the company's bond rating.

Greenwood also notes that in a regulated industry, tax savings such as those enjoyed with deductibility of debt costs are passed through to ratepayers. Utility stockholders lack the same incentive to maximize the use of debt that owners of firms in competitive markets have. She believes that while a utility's stockholders would prefer higher equity ratios, ratepayers would prefer higher debt ratios to take advantage of tax savings and lower financial costs.

Admittedly lacking a more conclusive study of the optimal capital structure for CWS, staff believes that the equity ratios of eleven comparable companies, and a lack of business and financial risk, support a decrease in CWS's ratio. Greenwood indicates that, while a decrease in the equity ratio is not recommended, further increases are opposed. The specific recommendation of a 53.00% equity ratio is close to the level estimated the company to be at in 1989 following the $18 million bond issue. It was developed with a model which assumes that equity growth is a function of the authorized return on equity, the payout ratio, and new equity issues. Using a payout ratio of 66.7%, which approximates the eleven-company group average payout ratio, the model results in a projected equity ratio for CWS of 53.00% throughout the period from 1989 to 1991.

CWS takes issue with the characterization that it plans to build up its equity ratio in the period covered by these applications. Its highest projected ratio of 55.00% in 1991 is less than the December 1987 ratio of 55.30%. Also, the 55.00% projection rests on the assumption that the requested 13.75% ROE will be authorized. A lower authorized value, such as the 11.75% ROE recommended by Greenwood, would result in a lower amount of funds available for equity capital.

CWS's financial witness explained the equity ratio increase of recent years as follows:

1. The 1981 Tax Act, which required, for ratemaking purposes, deferral of the benefits of the investment tax credit and reduced taxes due to accelerated tax depreciation. The cash flow resulting from this act allowed the company to forgo borrowing $14,795,000 through December 1987.

2. The company was authorized an ROE of 14.5% during much of the period 1983 to 1987, and that rate was actually realized in all of the operating districts in 1984. CWS earned its authorized rate of return in the years 1984 through 1987.

3. The payout rate of dividends on common stock has been somewhat lower than the level targeted by the company. It has averaged 60%, where 65% would have been paid out if the company had been better able to anticipate favorable earnings at the time that dividend rates were established. This situation resulted in part because of higher-than-expected sales during the period due to dry weather conditions. It was not possible to anticipate such sales at the time dividend rates were set.

According to the company, the increased cash flow which resulted from these conditions has resulted in an improvement in its bond rating, and has provided funds which enabled the calling of high coupon bonds. Redemption of Series Y and Z bonds, with interest rates of 13.00% and 16.25%, respectively, and subsequent issuance of Series BB bonds with an interest rate of 9.48%, resulted in a net annual interest savings of $270,954. The company's effective cost of debt (upon which parties agree) would have been 18 basis points higher without these savings.

CWS maintains that it is not the company's policy to raise its equity ratio in the test period, and that the ratio will

not in fact continue to increase as it did between 1983 and 1987. There are several indications that the financial conditions which led to the increase in recent years will change. Planned bond issues of $29 million in the period from 1988 to 1991 exceed anticipated retained earnings of approximately $18.5 million during the same period (although some of the proceeds from new issues will offset the retiring or refunding of existing issues). Conditions such as high sales levels which contributed to the somewhat low dividend payouts in recent years have changed. The Tax Reform Act of 1986 (TRA-86) has had the effect of reducing cash flow by eliminating the investment tax credit, requiring longer lives for depreciation purposes, and imposing a tax on contributions in aid of construction which is paid in part by the company. These effects will gradually increase the debt ratio.

We note that despite their disagreements and the extent of litigation on this issue, the parties' estimates are not far apart. CWS's projected equity ratios exceed staff's recommendation of 53.00% by just 0.9 percentage points in 1989, 1.4 percentage points in 1990, and 2.0 percentage points in 1991. Greenwood presented a hypothetical "sensitivity analysis" which shows dramatically different revenue requirements depending on whether equity ratios are 10%, 30%, 50%, 70%, or 90%, but the differences at issue here are minor by comparison. For 1991, when the greatest difference of 2 percentage points occurs, based on our adopted ROE of 12.25%, the difference in the rate of return on rate base using applicant's and Greenwood's recommended capital structures is six basis points (11.39% with CWS's recommendation and 11.33% with staff's). With this perspective in mind, we turn to resolution of the issue.

We agree that there are limits to a utility's ability to lower total capital costs by adding to the amount of equity capital and minimizing the amount and the cost of debt. While a more leveraged firm might benefit from the improved bond ratings which

would be expected to accompany an increased equity position, CWS has already benefited and will continue to benefit from high ratings from Standard and Poor's and Moody's. It is noteworthy that these ratings have been achieved, but the record shows it to be unlikely that further increases in the equity ratio would result in any further improvement in the bond ratings. It is also unlikely that maintaining the equity ratio at 53.00% would result in a downgrading of the ratings. However, an increase in CWS's ratio would increase its total capital costs.

We will adopt Greenwood's recommended equity ratio of 53.00%, and related capital ratios for preferred stock and long-term debt. While it is clear that CWS is not proposing, as a matter of company policy, to increase its equity ratio significantly during the ratemaking period covered by these applications, it is also apparent Greenwood's somewhat lower recommendation is a more realistic estimate of the equity ratio which can be expected to occur. As indicated by CWS's financial witness, the actual equity ratio will most likely be lower than the company's projections because we are authorizing an ROE of 12.25%, which is 150 basis points less than that requested and upon which his projections were based. Greenwood's recommended equity ratio, which is based on the reasonable assumption that the dividend payout ratio should approximate the average of comparable utilities, is consistent with this expectation of a lower value.

Return on Equity

In proceedings in which the cost of capital is at issue, disagreement on the cost of common equity is typically the greatest source of the parties' differences on the recommended rate of return. Unlike debt and preferred stock costs, which are in large part measured from recorded, contractual information, estimating a utility's equity cost requires consideration of a variety of factors such as business and financial risk, investor expectations, capital ratios, and past earnings performance. It requires

quantitative analysis, which usually involves use of one or more financial models, as well as qualitative analysis.

In this case, both parties used the discounted cash flow (DCF) and the risk premium (RP) models as part of their analyses. To measure an investor's expected return, and thus a utility's cost of equity capital, the DCF model incorporates data on the current market price of the utility's stock, the present value of the expected dividend yields, and expected growth. Growth is typically estimated on the basis of the stock's historical performance. The RP model is based on the premise that investors expect a higher return on common stock than on debt because greater risk is involved. With this model, an estimate of the required premium above debt returns is added to forecasted debt costs to measure future equity costs.

CWS indicates that its requested ROE of 13.75% is supported by the following:

1. A DCF analysis which used the company's earnings and dividends growth from 1977 to 1987. This analysis indicates a required ROE ranging from 13% (based on dividends) to 15.5% (based on earnings).

2. A similar DCF analysis which used the company's performance from 1982 to 1987. This analysis indicates an ROE between 14.6% and 21% is required to meet investor expectations. The company acknowledges that its performance was particularly favorable during this shorter period and, therefore, that it would be reasonable to use the longer ten-year DCF analysis.

3. A risk premium analysis which compared the authorized ROE's and embedded debt costs of five energy and communication utilities and five water utilities (not including CWS) which were the subject of Commission

> decisions on rate of return in 1987.[2] The average risk premium for the energy and communication utilities was 3.48%. The average for the water companies was 2.89%. By adding these premiums to the embedded debt cost of 10.65% for 1988 (the company later revised this projection to 10.55%), the risk premium analysis indicates the company is entitled to an ROE of 14.13%, based on comparisons with energy and communication utilities, or 13.54%, based on comparisons with water utilities.

CWS believes that in evaluating a stock's potential for future growth and investment return, an investor will place great reliance on a company's own performance record. According to the company's financial witness, the company's performance is to a degree an individual matter which reflects the company's particular management philosophies. He therefore used only CWS's earnings performance in his DCF analysis. On the other hand, when using the RP model, he believes it is appropriate to make comparisons with other California-regulated utilities in estimating the risk premium and the ROE. He also asserts that CWS's authorized ROE should not be significantly lower than the returns of other California water utilities, and that comparisons should not be made with utilities in other states because different commissions have different policies and procedures.

CWS maintains that it faces operational risks which should also be weighed in establishing its ROE. Included among these risks is the potential for revenue shortfall which can occur

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2 The five energy and communication utilities are Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, Southern California Gas Company, and GTE California Incorporated. The five water companies are California-American Water Company, Dominguez Water Corporation, Park Water Company, Southern California Water Company, and Suburban Water System.

with sales reductions related to water shortages and rationing. Although revenue and sales adjustment mechanisms have been established for energy utilities to reduce their risk, the Commission has not established comparable mechanisms for water utilities. Also, the risk of revenue shortfall is made greater by the lingering effects of the Commission's lifeline rate design policy of the 1970's and early 1980's. This policy was changed recently (D.86-05-064), but it will take years to fully implement changes in the rate structure which are designed to stabilize revenues by phasing out lifeline rates and increasing service charges. Another operational risk that CWS asserts should be considered is the potential for high capital expenditures which may be required to meet EPA and Department of Health Services water quality and monitoring regulations.

According to Greenwood, the allowed ROE should be a function of market-based equity returns and the firm's financial and business risk. She used the DCF model to estimate the expected return by analyzing the earnings performance of eleven comparable water utilities (listed in Footnote 1). The growth rate used for each of the eleven firms was the average of growth in dividends and earnings over the five-year period 1983-1987. The stock price used was an average of the most recent three months' high and low prices. As shown in the following summary table, this analysis yielded an expected return on equity of 12.18% for the group.

Discounted Cash Flow Model

Utility	Expected ROE
American Water Works	17.80%
Connecticut Water Service	9.74
Consumers Water	14.63
E'Town Corporation	7.53
The Hydraulic Company	10.94
IWC Resources Corporation	10.79
Middlesex Water	9.50
Philadelphia Suburban Co.	6.55
SEW Corporation	16.26

Southern California Water	14.85
United Water Resources	15.44
Average	12.18%

Greenwood made a separate DCF analysis by including CWS for information only (staff does not recommend inclusion of CWS in the group analysis because of the problem of circularity, whereby past Commission decisions rather than market conditions could be the basis for future Commission decisions). Adding CWS, with its expected return of 15.49%, raises the group average to 12.46%.

To demonstrate that future growth may not follow historical financial performance, Greenwood also incorporated July 1988 Value Line growth forecasts in the DCF model. A widely known financial information service, Value Line, publishes data on three water utilities: American Water Works, United Water Service, and CWS. Incorporation of Value Line's forecasts of dividend and earnings growth for these three companies resulted in uniformly more conservative ROE estimates of 11.04%, 14.76%, and 10.72%, respectively, compared to historically based estimates of 17.80%, 15.44%, and 15.49% as shown above. When the Value Line forecasts were incorporated, the model yielded an estimated ROE requirement of 11.51%, based on the group of eleven comparable utilities. When CWS was included, this analysis resulted in a group average ROE of 11.44%.

Greenwood maintains that her approach to the DCF analysis is in keeping with two landmark cases, Bluefield Waterworks and Improvement Company v West Virginia Public Service Commission (1923) 262 US 679; 67 L ed 1176, 43 S. Ct. 675 and Federal Power Commission v Hope Natural Gas Company (1944) 320 US 591; 88 L ed 333, 64 S. Ct. 281. She explains that the essence of Bluefield is that authorized returns should be sufficient to attract investors. She explains further that Hope reinforces this decision, dictating that the return to the equity owner should be commensurate with returns for comparable investments having corresponding risks, and

should be sufficient to assure confidence in the financial integrity of the utility so that its credit is maintained and to attract capital. She argues that CWS's sole use of its own financial performance in its DCF analysis is contrary to the mandate of Hope to consider comparable investments.

Greenwood believes that risk premium measurements should be made over a long period of time, because temporary swings in debt and equity markets could yield incorrect results if short periods are used. For its RP analysis, she computed the average recorded ROE of the eleven comparable water utilities for each of the years 1978 through 1987. The return on equity was calculated from each company's earnings/price ratio. By comparing the group average ROE to the costs of 10-year and 30-year treasury bonds in each year during this period and averaging the results, she measured a 2.05% risk premium over the cost of 10-year bonds and a 2.09% premium over the cost of 30-year bonds. Adding these premiums to bond costs forecasted for 1989 by Blue Chip Financial Forecasts and Data Resources, Inc., Greenwood arrived at an ROE range of 11.33% to 11.66% as shown in the following table:

Risk Premium Model

Debt Issue	Blue Chip Financial Forecasts(1)	Data Resources Inc.(2)	Historical Average Premium	Forecasted Return on Equity
10-year Treasury Bonds	9.43%	9.28%	2.05%	11.33%-11.48%
30-year Treasury Bonds	9.57%	9.39%	2.09%	11.48%-11.66%

(1) From the August 1, 1988 Blue Chip publication.
(2) From the June, 1988 DRI publication.

In addition to its analyses using the DCF and RP models, Greenwood considered the following in arriving at her ROE recommendation:

1. The near doubling of earnings per share in the past 10 years, the decline in the payout ratio, and two stock splits since 1982 (a period of relatively low inflation), lead staff to conclude that investors will perceive CWS to be a company with low financial risk.

2. The conclusion of low financial risk, and the conclusion that the company faces very little business risk, is bolstered in staff's view by a steady growth in returns, culminating in a 17.08% return on equity in 1987 compared to the 1978 return of 9.81%, and a 14.08% return on total capital in 1987 compared to 9.00% in 1978.

3. From 1983 to 1987, CWS earned an average ROE of 14.79% and an average return to total capital of 12.50%. These returns exceed the eleven company group averages by 168 basis points and 218 basis points, respectively. Following Hope and Bluefield, a lower authorized ROE, more in line with the market average indicated by the other water utilities, is appropriate, and will still assure CWS's ability to attract capital and maintain its credit standing.

4. Rates for utility bonds and short- and long-term government securities since 1981 indicate that interest rates have been declining, while CWS's ROE has been increasing. This trend supports the view that lowering the ROE is appropriate.

Having established a recommended ROE range of 11.75% to 12.25%, staff asserts that the lower figure of 11.75% is indicated by CWS's above-average equity ratio. According to staff's cost of capital witness, there is an inverse relationship between a utility's equity ratio and the ROE required by investors, because

of the reduced financial risk which is associated with higher equity ratios. For example, according to the staff, an investor would be indifferent to a 14% return on a utility with a 40% equity ratio and a 9.33% return on a utility with a 60% equity ratio. The recommendation for the low end of the range is also supported by the company's low business and financial risk, and by the DCF and RP model analysis.

As we have frequently found in other proceedings, there are enough facts, opinions, and comments in this record to enable us to choose an ROE from a wide range of estimates. There are enough valid criticisms to warrant attaching at least some doubt to each of the recommendations and underlying analyses. Applicant's DCF analysis yielded a range of 13% to 15.5% (not considering the higher range of 14.6% to 21%, which the company acknowledges to be less representative of investor requirements), and its RP analysis points to an ROE range of 13.54% to 14.13%. Greenwood's analysis points to lower range of estimates, as low as 11.33% based on its RP analysis, and as high as 12.18%, based on its recommendation from its DCF analysis. Even when growth and earnings values for CWS are included in Greenwood's DCF analysis, her methods yield an estimate no higher than 12.46%. Given this wide range, we will assess parties' use of the financial models.

We place little reliance on the RP model analyses in this case. We agree that CWS's risk comparisons with energy and communications utilities are less valid than comparisons with other water utilities. Water utilities are not subject to the same competitive pressures that affect these other utilities. CWS acknowledges that it is not significantly affected by the existence of core, noncore, and interruptible customers as energy utilities are. Although CWS also used water utilities in its RP analysis, it relied on a relatively small and, therefore, less reliable sample of five such companies, compared to Greenwood's group of eleven companies. In this regard, we reject the company's assertion that

our analysis should be limited to California utilities falling under our own jurisdiction. Any regulatory differences that may exist in other states are likely to have much less of an impact on risk premiums than the differences noted between water utilities and energy and communications utilities.

Additionally, we note that CWS's risk premium measurements are based on the differences between authorized equity returns and embedded debt costs. Since the objective of the RP analysis is to reflect the additional return that equity investors require due to the higher risk of equity compared to debt investments, the comparisons should be related as closely as possible in time. Embedded debt costs reflect the weighted costs of all of a firm's outstanding debt issues, and probably will not be the same as the cost of new issues at any point in time. Comparing historical, embedded debt against current equity returns is, therefore, a less accurate method of ascertaining the premium demanded by investors than contemporaneous comparisons. Finally, we agree that an RP analysis over a long period of time (such as ten years) will correct for temporary swings in debt and equity markets that can otherwise render the analysis less reliable. CWS's comparison of embedded debt and equity returns adopted in 1987 is more susceptible to such swings.

For the preceding reasons, we are inclined to place more reliance on Greenwood's RP analysis. However, we share CWS's concern that she has used market instead of book value. Since the stocks of the eleven comparable companies have recently been selling at a premium of 49% above book value, the measured return on the stocks understates the return on book value. Consequently, the risk premiums measured are understated to the extent that stocks were selling above book value.

Using the DCF model, Greenwood estimated an ROE requirement of 12.18%, while CWS developed a substantially higher range of 13% to 15.5%, based on its own historical performance.

Because the estimates are so far apart, a considerable amount of evidence and argument is addressed to the issue of whether the model should be limited to the financial performance of CWS only, and the related question of whether the group of eleven water utilities used by staff is sufficiently representative for market comparison purposes.

We find that it is proper to consider the performance of other water utilities in determining what return investors will require. Following the principles of the Hope and Bluefield decisions, our objective is to determine investors' expectations and requirements in the context of market alternatives that are available to them. If we were to rely solely on CWS's historical earnings performance, we would be giving little consideration to market-based information about such alternatives. As stated by Greenwood:

> "[T]he Commission is supposed to entitle Cal Water to a return...that will enable it to attract capital in the market, and not a return that will enable it to continue its past performance or be based solely on [its] own past performance."

There may be some investors who have come to expect continued high earnings from the company, but the record does not show that lower returns which are more reflective of market conditions will endanger CWS's ability to attract capital. One indication that investors will not necessarily expect a continuation of historically high earnings comes from Value Line forecast data on dividends and earnings growth. Each of three

water utilities is shown to have a lower ROE requirement when current forecast data is substituted for historical data.[3]

We find that Greenwood's selection criteria for comparable water utilities are reasonable and result in a valid sample. The requirement that at least 70% of revenues be earned from water operations properly excludes companies with predominantly nonutility operations, yet allows a workable sample size of eleven. A higher threshold would be desirable, but it would also reduce the sample size, and thereby make it less reliable. CWS maintains that three of these companies in this sample, Philadelphia Suburban Co., Consumers Water, and United Water Resources, are not representative of water utilities because they have a significant amount of nonutility operations. We note that even if the three companies are excluded, the group average for the remaining eight companies remains at 12.18%.

We disagree with the assertion that equity returns should be established solely on the basis of water utilities under our jurisdiction. Inclusion of out-of-state utilities in the sample reduces the problem of circularity. If the comparison were limited as proposed by CWS, we would run a greater risk of setting ROE's on the basis of our own decisions, and unnecessarily establishing a

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3 We concur with CWS that it would be improper to adjust Greenwood's DCF average by including Value Line data for only two of eleven utilities. Therefore, we do not believe that the DCF estimate average of 11.51% based on this method is valid. Further, we acknowledge the company's concern that there may be inaccuracies in those forecasts based on Value Line's less-than-perfect forecast record for CWS. Nevertheless, the fact remains that each of three water utilities (including CWS) in the Value Line data showed a lower ROE requirement when growth forecasts were substitued for historical earnings in the DCF model. In two of the three cases the reduction is substantial, from 17.80% to 11.04% (American Water Works), and from 15.49% to 10.72% (CWS). In the third case, the reduction is from 15.44% to 14.76% (United Water Resources).

different standard for utilities in this state which is not warranted by equity market conditions.

While it is true that details of the operations of the other utilities were not investigated, this omission does not mean the sample is invalid. Except as to the existence of non-water operations for three companies whose exclusion does not affect the final analysis, we find no evidence that the sample is unrepresentative of water utilities from an investor's perspective.

We conclude that on the basis of the quantitative models, staff's DCF-based recommendation of 12.18% is the single most reliable indicator of the ROE which will be required by investors. To authorize a significantly higher ROE would require that we assume that investors require far better performance from CWS than from other water utilities. On the other hand, a significantly lower ROE would require that we give greater weight to Greenwood's RP analysis than is warranted by the facts.

In arriving at our final determination of an appropriate return, we have also evaluated the various qualitative analyses, and criticisms thereof, of both parties. There is no need to discuss each of these in detail, and we do not address the rationale for recommending the lower end of the range, since we find fault with the range itself. Although CWS asserts that operational risks related either to potential revenue shortfall or required capital expenditures for water quality and monitoring were not considered, we find no basis to conclude that investors are unaware of such risks, or that CWS is affected in a substantially different manner than other water utilities. We believe that investors do have some awareness of such risks. For example, Value Line advised its readers in July 1988 that CWS could be affected by below-normal precipitation and mandatory conservation measures. To the extent that investors have taken such risks into consideration, and we believe it is a significant extent, a market-based analysis should reflect of their effects.

We agree that partial reliance on the 1981 to 1986 decline in interest rate supports lower equity returns, to the extent that it is clear that much higher returns such as the 14.50% ROE authorized during much of that time is no longer required. However, we also agree with applicant that there are recent indications of a rise in interest rates, as seen in staff's own data on interest rate trends. While interest rates of the magnitude seen from 1981 to 1985 have not returned, recent trends tend to support an ROE as high, if not higher, than that measured through Greenwood's DCF analysis.

CWS asserts that the low ROE recommendation represents a penalty for its success. On the other hand, Greenwood's recommendation is in no way an attempt to punish the company, but is simply a reflection of market requirements. The record clearly shows that CWS does indeed maintain good service standards and a high degree of customer satisfaction. We fully agree that the company should not in any way be penalized. In determining the appropriate return for CWS, we recognize the quality of the company's operations.

Accordingly, we will adopt a constant ROE of 12.25%. This is consistent with Greenwood's DCF analysis as well as the recent upward trend in interest rates. As shown in the following table, the resulting rate of return on rate base, incorporating this ROE, our adopted costs of long-term debt and preferred stock, and our adopted capital structure, is 11.33%. These returns will result in pre-tax interest coverage of 3.32x in 1989, 1990, and 1991, which should serve adequately to maintain CWS's favorable bond ratings.

Adopted Rate of Return

1989	Capital Ratios	Cost Factors	Rate of Return
Long-term Debt	45.25%	10.54%	4.77%
Preferred Stock	1.75	4.19	0.07
Common Equity	53.00	12.25	6.49
	100.00%		11.33%
1990			
Long-term Debt	45.25%	10.55%	4.77%
Preferred Stock	1.75	4.19	0.07
Common Equity	53.00	12.25	6.49
	100.00%		11.33%
1991			
Long-term Debt	45.25%	10.55%	4.77%
Preferred Stock	1.75	4.19	0.07
Common Equity	53.00	12.25	6.49
	100.00%		11.33%

Tax on Unbilled Revenue

CACD recommends disallowance of a non-recurring income tax expense which resulted from a change in accounting methods. Prior to enactment of the Tax Reform Act of 1986 (TRA-86), CWS used the unbilled revenue method of accounting by which utilities recognized revenues as accrued when the customer's meter was read and a bill based on the meter reading was issued. Under this method, the total amount of a bill issued in January of any year was reported as revenue earned in that year, even if most of the water had been delivered in December of the previous year. With the enactment of TRA-86, utilities are required to recognize revenues at the time that services or commodities are delivered. Accordingly, CWS now estimates the consumption which occurs from the date the meter is read in December to the end of the month.

For tax purposes, the associated unbilled revenue estimate is included in that year's revenues.

Because the company reads meters and issues bills throughout the month, this accounting change results, on the average, in an approximate one-half month shift of revenues. For 1986 and earlier years, each year's revenue included approximately a half month's consumption from the previous year and likewise excluded a half month's consumption from the current year. Beginning in 1987, each year's revenue reflects an estimate of actual consumption from January 1 to December 31.

The shift has a negligible impact on revenue estimates for ratemaking purposes, particularly since the estimates are made for December consumption, when water use is at a minimum. However, TRA-86 also requires CWS to pay a one-time tax on $3.775 million in unbilled revenues recorded as of January 1, 1987. This amount represents the estimated revenue for water delivered in December 1986 after meters were read for the month. Under TRA-86, the tax of approximately $1.6 million is payable over a period of four years. CWS made the first payment in March 1988 and will make the remaining payments in each of the next three years.

CACD does not dispute these facts, but argues that CWS is not entitled to recovery of the tax payment in its rates because the tax has already been paid by ratepayers. CACD maintains that the unbilled revenue method has been used by CWS for taxes but not for ratemaking. According to CACD's testimony:

> "The ratemaking issue created by this change in the FIT law relates to whether or not a utility's test year revenue estimate was based upon an unbilled revenue basis or upon a twelve month period representing a calendar year (January 1 to December 31). If the revenue estimate was based upon an unbilled revenue method, then the utility received in rates the FIT on ratemaking taxable income which is comparable to the FIT paid on the utility's tax return for the same period. Only if the unbilled revenue method was used in ratemaking

> would the utility be allowed to recover over four years the difference which occurred in 1987 due to the mandated conversion. CWS's test year revenue estimates have been and will continue to be based on a full twelve month period. Any inclusion in ratemaking tax expense for unbilled revenues would be collecting from the ratepayers tax dollars that the ratepayers have already paid."

To illustrate the contention that ratepayers have already paid the tax, the witness developed a hypothetical situation in which a utility with $100 million in revenues in one year receives a 10% rate increase effective January 1 of the next year. For the purposes of the example, he assumed that 7.34% of sales occur in December (based on actual data for CWS's Hermosa-Redondo District), and that revenues are proportional to sales. In this example, if the second year is used as a test year, then the income tax allowed for ratemaking would be based on $110 million in revenue. However, under the pre-TRA-86 method, the income tax actually paid for the second year would have been computed on billed revenues of $109,633,100. The difference of $366,900, or approximately one-third of 1%, is due to the lower amount of revenues earned in the latter part of December of the first year compared to the same period in the second year.

The record does not disclose the amount of overcollection, if any, applicable in this case, but using CACD's example it is in all likelihood based on an amount equivalent to less than one-third of 1% of the company's annual revenue in any year. The tax payment at issue, on the other hand, is based on the much higher unbilled revenue of $3,775,000 for the latter part of December 1986, or 3.45% of the company's 1986 recorded revenue of $109,523,000.

In Decision (D.) 88-01-061 in our investigation of ratemaking issues created by TRA-86 (I.86-11-019), we considered the question of how to treat the tax on unbilled revenue for all

utilities. We found that to the extent any utility is affected by the unbilled revenue method required by TRA-86, it is appropriate for such utility to request a revenue requirement adjustment with a complete justification. Staff agrees that the CWS is affected by the unbilled revenue in that it is required to pay the additional tax, but notes that the finding was based on the following Division of Ratepayer Advocates recommendation:

> "[T]o the extent that the unbilled revenue method was used for tax and ratemaking, the affected utilities are entitled to recovery over four years the difference which will occur in 1987 due to the mandated conversion from the unbilled revenue method to the revenue earned for service provided method for FIT purposes."

Thus, CACD believes that D.88-01-061 precludes recovery of the tax because, in its view, the unbilled revenue method has never been used for ratemaking. CWS takes issue with CACD's assertion that the unbilled revenues have always been included in test year revenue estimates for ratemaking purposes. The statistical data used to develop test year revenue estimates is based on actual consumption data from meter readings. According to the company, the resulting revenue estimates are only assumed to be on a calendar-year basis; adjustments have never been made to reflect estimates of unbilled revenues.

By petition filed jointly with San Jose Water Company on November 2, 1988, CWS has requested modification of D.88-01-061, besides other changes, to clarify the conditions that would allow a utility to provide for recovery of the one-time tax on unbilled revenues in its rates. The petitioners specifically request inclusion of a finding in that decision which would allow the expense recovery as proposed in these applications. The petition was protested by the Division of Ratepayer Advocates, and the matter has been set for hearing. CACD urges that our decision in these proceedings be written to conform with the final outcome of the D.88-01-061 matter.

Although we are not persuaded by the argument that CWS has already recovered the tax on unbilled revenue recorded as of January 1, 1987, we agree that D.88-01-061 precludes CWS from recovering the tax expense in rates. While it is true that the raw data used in developing normalized consumption estimates comes from meter readings and not from end-of-December estimates, it does not follow that the unbilled revenue method was used for ratemaking. CACD's testimony shows that the raw consumption data thus obtained is used to develop normalized consumption estimates which are combined with adopted estimates of revenue requirements for calendar test years in establishing rates.

I.86-11-019 was established specifically to consider tax issues such as this one, and the issue is now before us in that investigation as a result of CWS's joint petition for modification. We will disallow the tax expense at this time and defer further consideration of the issue to that proceeding.

Ductile Iron Pipe

CWS has recently decided to stop installing asbestos cement (AC) pipe for mains and to use ductile iron (DI) pipe instead. CACD recommends disallowance of the higher plant costs which CWS estimates will result from this change because the company did not present a breakdown of costs demonstrating that the use of DI pipe is cost-justified. The differences in the plant-in-service estimates are shown below:

Utility Plant-Ductile Iron Pipe
Utility Exceeds Staff
(Dollars in Thousands)

District	1989	1990
Los Altos-Suburban	$31.5	$35.1
South San Francisco	19.7	23.8

The company's decision to convert to DI pipe was based on the following:

1. Anticipated environmental and occupational safety regulations may prohibit the manufacture of AC pipe in the not too distant future.

2. At the time of the August hearings in the Dixon proceedings, CWS was experiencing delays in the delivery of AC pipe of four to six weeks. Some diameters of pipe, such as 12" pipe, required up to eight weeks or longer for delivery. One manufacturer, Johns-Manville, has stopped manufacturing AC pipe. At the time of the November hearings CWS was experiencing average delays of six to eight weeks for delivery of AC pipe, and in some cases as much as 12 weeks. By contrast, DI pipe is delivered in less than a week, and commonly within two days.

3. Although there are no known dangers associated with the use of AC pipe for water delivery, there has been negative reaction to its use due to a general public perception that asbestos in any form is dangerous. Applicant has experienced problems with news media coverage due to its use of AC pipe, and the City of Hermosa Beach has objected to its installation in that city.

4. Installation contractors are encountering increasing problems with safety regulations governing AC pipe.

5. DI pipe has been in extensive use throughout the nation and California for years. For example, it is used by Contra Costa Water District, San Francisco Water District, and San Jose Water Company.

CACD became aware of the company's decision to use DI pipe in July 1988 but did not receive cost estimates until September. A detailed breakdown of the cost estimates was requested on several occasions in order to make an economic feasibility study, but the requested information was not received.

It is clear that company management considered the change to DI pipe necessary despite cost considerations, not because of them. Based on the reasons given by the company, we conclude that reasonable expenses arising from the change should be allowed for ratemaking even though there is no indication of a direct and immediate financial benefit to ratepayers.

Although CACD did not receive from CWS all of the information needed to make an in-depth study of the additional plant costs involved, we do not believe this warrants disallowance of the costs. The estimates of utility plant additions for 1989 due to the conversion to DI pipe are $31,500 in the LAS District and $19,700 in the SSF District. The 1990 estimates are approximately $4,000 higher in each district. Any error or discrepancy which a more in-depth analysis might have uncovered in these estimates (and we have no basis to believe there would be any) would in all likelihood be minor in nature. The company's estimates of costs associated with this decision will be adopted.

The failure to furnish all of the requested information appears to be the result of a communications mix-up and not any attempt to deny CACD access to information to which it was entitled. However, we caution the company that for the future it must have full justification available in a timely manner for staff review if it expects such higher costs to be included in rates.

Working Cash

CACD and applicant disagree on the amount of working cash that should be allowed in rate base, primarily because their estimates of the number of lag days in billing and collecting of revenues are different. These differences are reflected in the following table. Other differences, which are due to different expense estimates, are minor.

Rate Base-Working Cash Allowance
Lag Day Difference
Utility Exceeds CACD
(Dollars in Thousands)

District	1989	1990
Los Altos-Suburban	$46.3	$47.5
South San Francisco	25.9	26.7

CACD adjusted revenue lag day estimates from the utility's 1980 working cash study by adding one lag day to compensate the utility for a delay in bank crediting of revenues, and by subtracting three lag days to reflect a more efficient billing process. The latter adjustment was made by CACD based on its estimate that a new electronic meter reading system has reduced the time from the date the meter is read to the date the customer receives the bill by three days.

CWS disagrees with this adjustment, largely because it expects that customers will continue to pay their bills on the same day of the month despite receiving them two or three days earlier. For example, the company believes that a customer who receives a bill on the 18th, 20th, or 21st of the month will pay it on the same date as before, probably a pay day. At best, in the company's view, there will be a minor improvement, probably two- or three-tenths of one day. The company also disagrees with the estimate of a three-day improvement in the billing process, contending it is only two days.

We will adopt CACD's adjustments to working cash, based on the reduced number of revenue lag days which it has estimated will occur. CACD's analysis of the billing process shows that if a meter is read on a Monday, the bills will be mailed on Wednesday and received on Thursday or Friday. This represents an improvement of three days compared to the 1980 working cash study. We are not persuaded by the company's contention that the customer payment period will be increased by three days. Since meters are

read and bills are mailed throughout the month, we expect the average payment period to remain the same even though some individual customers will pay at longer intervals and others at shorter intervals.

General Office

General office expenses are incurred at the company's San Jose headquarters offices and a meter testing and repair facility in Stockton. General office functions include accounting, administration, engineering, and water quality testing and monitoring. Expenses and rate base items associated with the general office operations are allocated to each of CWS's 21 districts based on the percentage of total company operations that the district represents. The allocation factor for each district is the average of the district's percentage of utility plant, payroll, customers, and operations & maintenance expenses. General office items which are in contention are discussed below.

Outside Services Expenses

This expense category includes the cost of professional services such as outside legal fees and auditing charges. It is one of several expense categories where parties disagree on the appropriate methodology to be used in estimating future test year expenses. CACD used five years of recorded numbers (1983 to 1987) and adjusted them for inflation to 1987 constant dollar values. The average of the constant dollar values was then used as the base upon which inflation-adjusted projections were made for 1988 and for test years 1989 and 1990. The adjustments were made using inflation data recommended by the Advisory Branch of CACD. Applicant used the least squares method, a standard statistical technique which develops a trend line representing the "best fit" with recorded data. CWS used ten to twelve years of historical data.

CWS concedes that the CACD's method is valid for some expense categories, but contends that in other cases it fails to

reflect increasing trends in expenses that inflation alone cannot explain. We agree, but we also note that using the least square method without making inflation adjustments could result in erroneous estimates to the extent that inflation rates have changed over time. Both methods can be useful, but both should be used with due consideration to the facts pertaining to a particular account. Where it is clear that there is a trend of increasing expenses which cannot be explained by inflation alone, and that such increases are necessarily incurred in providing utility service, less weight should be given to the constant dollar averaging method. On the other hand, where it appears that an expense category is subject to year-to-year variations, constant dollar averaging may be a more appropriate method to smooth out such variations.

The recorded outside service expenses for the last five years are shown below:

General Office
Outside Services Expenses
(Dollars in Thousands)

1983	$150.1
1984	135.7
1985	144.9
1986	191.0
1987	231.8

CACD characterizes the 1987 expense as extraordinarily high. Applicant on the other hand asserts it is indicative of an upward trend for this account. Absent an explanation of why there is such a dramatic increase in this account, and why increases are expected to continue into the test period, we are left with the strong possibility that CACD's characterization is correct. The nature of outside legal and auditing services lends support to this view. We would expect to see year-to-year variations, and we note that this account declined by nearly 10% in 1984. We do not have a sufficient basis for concluding that there is an upward trend. We

note further that this method does not disregard the high expense level in 1987, it merely gives it equal weight with the other four years, after accounting for past and future inflation. We conclude that for this account, CACD's method is proper.

CWS criticizes CACD's use of nonlabor inflation adjustment factors for this account, claiming that legal and auditing services are labor intensive. However, it does not necessarily follow that inflationary trends in legal fees and auditing fees are more closely aligned with wage inflation than with nonlabor inflation. Moreover, any differences that might result from using the labor instead of nonlabor inflation series would be insignificant compared to those resulting from the different methods used by CWS and CACD. Also, although CWS claims that using nonlabor factors understates the expense estimates, the record shows that for 1988, 1989, and 1990, the nonlabor inflation factors used by CACD were greater than the labor factors.

Finally, CWS criticizes CACD's inflation factors because they were furnished to the Water Utilities Branch by the Advisory Branch in a memorandum which indicates the factors are for use in small water company rate requests. It is clear that the Water Utilities Branch has determined that the factors are appropriate for use in large water utility proceedings as well. We have no reason to conclude otherwise. CACD's estimates for this account of $191,900 in test year 1989 and $201,500 in test year 1990 are adopted.

Pension and Benefit Expenses

Parties do not agree on test year expenses for the company's contributions to its retirement savings and pension plans. The disagreement is due to CACD's use of nonlabor inflation factors and the company's use of labor-related inflation factors which the parties agree upon for the purpose of estimating payroll expenses.

Since the company's testimony shows that the retirement savings and pension expenses can be expected to vary directly with payroll expenses, it is appropriate to use the same inflation factors for both categories. CACD agrees with CWS on payroll expenses, and we will, therefore, adopt the company's estimates as shown below:

General Office
Pension and Benefits Expenses
(Dollars in Thousands)

Retirement Savings Plan:

1989	$ 526.5
1990	$ 557.0

Retirement Plan:

1989	$1,911.0
1990	$2,021.8

Plant Retirements

CACD estimated general office plant retirements by using recorded figures for plant additions and retirements from 1983 to 1987. Based on the five year totals, CACD found that retirements averaged 36.4% of plant additions. There was an unusually large retirement of $288,900 in 1986 associated with the replacement of a mainframe computer. The related addition was a relatively small $96,300. With the year 1986 excluded, the resulting four year average retirement factor was approximately 26%. Observing that retirements were generally between 20% and 30% of additions, and also that larger amounts do occur on occasion, CACD believes that a 32% retirement factor is reasonable.

CWS contends that the 1986 mainframe retirement is abnormally large and should therefore be excluded from the historical average. Using the same five years of data, and excluding both the additions and the retirements associated with the 1986 mainframe replacement (but including the remaining 1986 data), the company developed a retirement factor of 26.3%. Based

on this factor, and on itemized adjustments known to be associated with the addition of a central processing unit in 1989, CWS estimates that retirements will be $129,200 in 1988, $248,200 in 1989, and $144,200 in 1990.

Where it is clear that retirements generally average 20% to 30%, it is reasonable to characterize the mainframe computer retirement, which is 300% of the associated addition, as abnormal. We are persuaded that the 1986 mainframe retirement should be excluded as recommended by applicant. CACD in effect acknowledged that it should be at least partially excluded by its decision to use 32% instead of the five year average of 36.4%. The 20 to 30% range which CACD agrees is generally applicable does not include its own recommendation. The company's estimates will be adopted, with a minor adjustment to incorporate an agreement reached by the parties on the timing of a $16,000 addition for storage of gas cylinders in 1989.

Consumption and Sales Estimates

Both parties agree that mandatory rationing in the SSF District and voluntary conservation in the LAS District have resulted in a reduction of sales for 1988. They agree further that due to these drought conditions, there will be residual conservation and continued sales reductions in the test period, even assuming that the drought will be over after the 1988-89 rainy season. Disagreements on sales estimates for commercial (including residential) and public authority customers arose after the amended applications were filed. These disagreements result from differences of opinion on the severity of consumption cutbacks in 1988 and the length of the recovery period to normal sales assuming the 1988 drought does not continue. The differences between them are demonstrated in the following table, which shows the percentages by which they estimate sales will be reduced from normal sales.

Consumption Estimates-Reduction From Normal Sales

	1988		1989		1990	
	CACD	Company	CACD	Company	CACD	Company
Los Altos-Suburban						
Commercial Metered	6.8%	12.5%	3.4%	6.3%	0.0%	3.1%
Public Authority	12.5	27.0	6.2	13.5	0.0	6.8
South San Francisco						
Commercial Metered	16.5	20.9	8.3	10.5	0.0	5.2
Public Authority	22.1	47.0	11.0	23.5	0.0	11.8

CACD's estimates of 1988 reductions are based on the differences between the consumption recorded in July, August, and September of 1988 and the same period in 1987. CACD assumes that 1989 reductions will be one-half of the 1988 reductions. CACD also believes that consumption will return to normal by 1990 or sooner since rationing in the SSF District and conservation in the LAS District is a response to a localized situation, and no state agency has declared an emergency situation.

The reduction estimates that CWS used in preparing the amended applications were based on the company's experience during the 1977 drought. At the time of the November hearings, the company revised its estimates by combining recorded consumption data for August, September and October of 1988 with the 1977 data. The company found, for example, that 21.47% of the annual reduction in commercial sales experienced in the LAS District from April 1977 to March 1978 occurred from August to October of 1977. It then expanded the three-month reduction recorded in 1988 to an annualized estimate by using the 21.47% factor, and compared the result with normal consumption. Similar calculations were made for public authority consumption as well as the SSF District estimates.

For 1989 consumption, the company assumes that the reductions will be one-half of the 1988 reductions. However, it also believes there will be residual conservation effects in 1990,

and used reduction factors equal to one-half of the 1989 reductions.

We find there are problems with both estimates. We agree with the company that consumption in July 1988 does not provide a reliable basis for estimating 1988 cutbacks since public awareness of the need to conserve was still growing during that month. Rationing in the SSF District and the company's other districts on the San Francisco Peninsula was not fully implemented until August. Recorded reductions in August, September, and October are more representative of the impact of the 1988 drought than measurements which include July, 1988. On the other hand, we do not believe the company's use of its 1977 experience to adjust the 1988 data is valid. Customer response was clearly different then, as indicated by the much greater magnitude of reductions from 1976 to 1977 compared to the reductions from 1987 to 1988. In our judgement, the actual reductions beginning in August 1988 provide the best indication of annualized reductions for 1988.

We do accept as reasonable CWS's judgement that there will be residual conservation effects in 1990 equal to one-half of 1989 reductions. The evidence shows that it took as long as seven years before consumption returned to normal levels after the 1977 drought. Although the reductions involved here are much less severe, the recovery period of two years anticipated by the company is proportionately smaller. The fact that the 1988 drought is more localized than the 1977 drought does not persuade us to conclude otherwise. The measures taken by customers to accomplish even the more modest cutbacks of 1988 can be expected to remain in place, to some extent, beyond 1989. The adopted estimates of reduced consumption are shown below:

Adopted Consumption Estimates-Reduction From Normal Sales

	1988	1989	1990
LAS			
Commercial Metered	7.2%	3.6%	1.8%
Public Authority	15.5	7.8	3.9
SSF			
Commercial Metered	19.1	9.6	4.8
Public Authority	25.6	12.8	6.4

District Other Operation Expense

This category of expenses includes costs of janitorial services and utility bills and similar costs. Disagreement on the estimates of these expenses stems from essentially the same methodological differences that arose over general office outside service expenses. We will not repeat our analysis of these differences here. Recorded and 1987 inflation-adjusted values for this account are shown below:

Other Operation Expenses
(Dollars in Thousands)

	Los Altos-Suburban		South San Francisco	
	Recorded	Adjusted	Recorded	Adjusted
1983	$ 57.2	$ 59.6	$ 42.7	$ 44.5
1984	66.4	67.6	48.7	49.6
1985	68.1	68.8	51.7	52.2
1986	79.3	81.7	73.9	76.1
1987	106.0	106.0	78.4	78.4

At issue is whether the recent increases represent a trend which can be expected to continue throughout the test period. The company contends there is such an increasing trend. CACD believes the recent expenses are abnormally high and are given too much weight when the least squares method is used. Following are CACD's and the company's estimates for the test years:

Other Operation Expenses
(Dollars in Thousands)

	Los Altos-Suburban		South San Francisco	
	CACD	CWS	CACD	CWS
1989	$84.7	$106.8	$66.4	$88.0
1990	88.9	114.2	69.7	95.0

We agree with CACD that recent increases may not be indicative of future expenses of the magnitude projected by applicant. The average increase in the recorded expense in the LAS District was 12.9% from 1983 to 1986. The increase from 1986 to 1987 was 33.7%. In South San Francisco, the average increase in the recorded expense was 10.5% from 1983 to 1985. The increase from 1985 to 1986 was 42.9%, but in 1987 the increase was only 6.1%. These variations do not support continued increases as great as those projected by the company. Although the increases exceeded inflationary trends in the middle part of the decade, there is no reason to expect they will continue to do so in the test period.

On the other hand, it is apparent that expenses will be higher than CACD's estimates indicate. In our judgement, CACD's method understates the estimates because of the much lower expense levels at the beginning of its measurement period. We believe that exclusion of 1983 and 1984 expense levels will result in reasonable estimates. This will give appropriate consideration to more recent expense levels and at the same time smooth out year-to-year variations in the increases. We will adopt the following estimates, which are based on CACD's methodology and on the constant dollar average of 1985-87 expenses:

Other Operation Expenses
(Dollars in Thousands)

	Los Altos Suburban	South San Francisco
1985-87 Average	$85.5	$68.9
1988	89.9	72.4
1989	94.4	76.0
1990	99.1	79.8

Paving at South San Francisco Reservoirs 3 & 4

CACD recommends exclusion of a $5,000 plant addition in 1988 related to paving improvements at two adjacent reservoirs. CACD believes the paving project was not essential. The company's Assistant Chief Engineer explained that the purpose of paving at Reservoir 3 was to provide a safer place to turn vehicles around. Reservoir 3 is located at the top of a long, steep, and narrow driveway. The purpose of paving improvements at Reservoir 4 was to provide a turning area for vehicles and to reduce damage to the tank and to nearby homes resulting from kids throwing rocks. Paving removed the source of crushed rock.

This issue involves a difference of opinion as to the need for the improvements, although CWS does agree that the pavement was not essential. We will allow this modest expense in plant estimates. Although not essential, the improvements can be expected to contribute to safe and efficient operations and are therefore reasonable.

Rate Design and Sales Adjustment Mechanism

CWS indicates that its rate proposals for these districts were prepared in accordance with the water rate design policy guidelines we adopted in D.86-05-064. The guidelines generally provide for a flatter rate design, and include the following:

1. Service charges shall be set to allow utilities to recover up to 50% of their fixed costs.

2. Lifeline rate shall be phased out.

3. There may be multiple commodity blocks, with the number of commodity blocks to be limited to no more than three blocks.

The company proposes phasing out lifeline rates by 1990. Under its proposal, the revenue increases would be obtained largely from increases in the service charges. Lower quantity rates would be retained for consumption over 30,000 cubic feet per month in the LAS District, and 50,000 cubic feet per month in the SSF District. Due to conservation in the LAS District and rationing in the SSF District, a quantity rate surcharge is proposed in each district for 1989 and 1990 only.

CACD concurs with CWS's proposed application of the guidelines, but also proposes that they be implemented in such a manner that customer bills will not be increased by more than twice the overall percentage increase. In response to the company's concern that this limit could pose difficulties if customers who use little or no water in a billing period are included, the CACD witness indicated that the limit should be considered as a guideline for customers with average consumption, not an absolute standard for all customers. CACD opposes rate increases in the form of conservation and rationing surcharges.

The adopted rates provide for phasing out lifeline rates, increasing service charges, and retention of only two commodity blocks. They are in conformance with our water rate design guidelines. We see no reason to establish separate, temporary surcharges as proposed by applicant.

Applicant's request for authority to establish a sales-related balancing account adjustment mechanism (SAM) in the SSF District is now before us in another proceeding (A.88-05-045), and the parties agree that the issue of a SAM for that district should be considered in that matter. The request for authority to establish a SAM in the LAS District will be denied. In a general rate case such as this one, we rely on estimates of consumption and

sales based on normal conditions, since future weather patterns cannot be predicted. In doing so, we fully expect that sales will exceed the normalized estimates in some years and be less than the estimates in other years. Also, we have already made adjustments to the normalized consumption estimates to reflect the residual effects of voluntary conservation in 1988 that we believe will continue into the test period. Under these circumstances, we do not believe that a SAM is necessary in the LAS District to provide the company with a reasonable opportunity to earn its authorized rate of return.

If future circumstances such as imposition of rationing warrant further consideration of rates and revenues due to possible sales reductions in the LAS District, it will be appropriate for CWS to request such consideration as it has done for the SSF District. On March 8, 1989 we initiated an investigation (I.89-03-005) into measures to mitigate the effects of drought on regulated water utilities, their customers, and the general public. Included among the subjects to be addressed are the need for and magnitude of rate adjustments to accomodate utilities' increased conservation expenditures and sales reductions. We stated that it would be appropriate for water utilities to make filings in I.89-03-005 requesting offsetting rate relief for the accompanying lack of sales, plus authority to establish memorandum accounts to accumulate the loss of revenues pending a decision.

Attrition Allowance

The parties agree that an attrition adjustment to revenue should be authorized for 1991. The revenue adjustment is calculated by multiplying operational attrition by the adopted rate base in 1990 times the net-to-gross multiplier. Operational attrition is the change in rate of return from 1989 to 1990 assuming no change in rates in 1990. The adopted allowance for each district is shown in the following table.

ATTRITION RATE

District	Operational	Financial	Total	Dollars
Los Altos-Suburban	0.64%	0.0%	0.64%	$127,200
South San Francisco	0.89	0.0	0.89	115,300

Findings of Fact

1. On April 28, 1988 CWS filed applications requesting rate increases for its LAS and SSF Districts which were designed to produce returns on rate base of 12.26% in 1989, 12.27% in 1990, and 12.28% in 1991, and a constant return on equity (ROE) of 13.75%.

2. On July 11, 1988 CWS filed amendments to the applications requesting additional rate increases because of estimated sales declines associated with conservation in the LAS District and mandatory rationing in the SSF District. CWS also sought authority to establish a SAM in each district.

3. After the applications and amendments were filed, CWS revised its requested rates of return on rate base of 12.17% in 1989, 12.19% in 1990, and 12.21% in 1991 to reflect revised estimates of long term debt costs.

4. Staff recommends that the adopted ROE be within a range from 11.75% to 12.25%, and further advocates that the low point of 11.75% be adopted.

5. A new bond issue of $18 million in 1988 (CWS's Series BB) will carry an interest rate of 9.48% and, including issuance costs, an estimated effective cost of 9.60%.

6. Planned bond issues of $3 million in 1989, and $4 million each in 1990 and 1991 will have an estimated effective cost of 10.50%.

7. CWS's estimated long-term debt costs of 10.54% in 1989 and 10.55% in 1990 and 1991 are reasonable.

8. Staff's estimates of the effective dividend rates on preferred stock reflect the 1988 liquidation of all but Series C

holdings. The estimated cost of 4.19% is based on more current information than CWS's higher cost estimate of 4.41%.

9. CWS's equity ratio has steadily increased in recent years, growing from 42.47% in 1983 to 55.10% in 1987.

10. In each of the past five years, CWS's equity ratio exceeded the group average of eleven comparable water utilities by a steadily growing margin. The five-year average equity ratio of CWS exceeded that of the group by 6.92%.

11. Growth in CWS's equity ratio has resulted because its cash flow has exceeded cash requirements.

12. The ratio of internal cash flow to net construction outlays, a measure of the ability to fund construction outlays with internal cash sources, rose from 68.28% in 1983 to 118.48% in 1987.

13. CWS's average dividend payout ratio from 1983 to 1987 was 60%, compared to an average of 66.72% for the group of eleven comparable water companies.

14. Cash flow resulting from the 1981 Tax Act allowed the company to forgo borrowing $14,795,000 through December, 1987.

15. CWS earned its authorized rate of return on a company-wide basis in the years 1984 through 1987, and in all of the operating districts in 1984.

16. The payout rate of dividends on common stock averaged 60% in recent years, where 65% would have been paid out if the company had been better able to anticipate higher sales due to dry weather conditions.

17. The increased cash flow which resulted from these conditions has resulted in an improvement in its bond rating, and has provided funds which enabled the calling of high coupon bonds.

18. Redemption of Series Y and Z bonds, with interest rates of 13.00% and 16.25%, respectively, and subsequent issuance of Series BB bonds with an interest rate of 9.48%, resulted in a net annual interest savings of $270,954.

19. In an optimal capital structure, the costs of different modes of financing will be appropriately balanced in accordance with the company's financial risk.

20. Although debt is generally less expensive than equity financing because interest payments on debt are usually cheaper than returns paid to company stockholders, and interest is tax deductible, it has the disadvantage of increasing financial risk, and the more leveraged a company becomes, the more expensive marginal debt issues become.

21. Lower cost financing affects the cost of new debt issues only, and CWS's planned bond issue of $3 million in 1989 represents less than 5% of the company's total debt.

22. CWS already enjoys a high AA2 bond rating from Moody's and a similarly high rating of AA+ from Standard and Poor's, and there is no benefit in raising the equity ratio in order to improve the company's bond rating.

23. Utility stockholders lack the same incentive to maximize the use of debt that owners of firms in competitive markets have.

24. Staff's recommendation of a 53.00% equity ratio throughout the period from 1989 to 1991 is close to the level it expects the company to be at in 1989 following the $18 million bond issue, and is consistent with a payout ratio of 66.7%, which approximates the eleven-company group average payout ratio.

25. The company's projection of a 55.00% equity ratio in 1991 is based on the assumption that the requested 13.75% ROE will be authorized.

26. Staff's recommended equity ratio of 53.00% is a more realistic indicator of the equity ratio which can be expected to occur because we are authorizing an ROE of 12.25%, which is 150 basis points less than that upon which CWS based its equity ratio projections.

27. Planned bond issues of $29 million in the period from 1988 to 1991, a reduction in the sales levels which contributed to

the low dividend payouts in recent years, and the effects of TRA-86 will gradually increase the debt ratio.

28. There are limits to a utility's ability to lower total capital costs by adding to equity capital and minimizing the amount and the cost of debt.

29. CWS has already benefited and will continue to benefit from high bond ratings from Standard and Poor's and Moody's, and it is unlikely that further increases in the equity ratio would result in any further improvement in the bond ratings, or that maintaining the equity ratio at 53.00% would result in a downgrading of the ratings.

30. An increase in CWS's equity ratio would increase its total capital costs.

31. CWS's DCF analysis, which used the company's earnings and dividends growth from 1977 to 1987, indicates that the required ROE lies within a range from 13% (based on dividends) to 15.5% (based on earnings).

32. Using the DCF model, staff estimated the required equity return by analyzing the historical performance of eleven comparable water utilities. This analysis yielded an expected return on equity of 12.18%.

33. Use of Value Line's forecasts of dividend and earnings growth for American Water Works, United Water Service, and CWS resulted in ROE estimates of 11.04%, 14.76%, and 10.72%. These estimates are uniformly more conservative than the estimates of 17.80%, 15.44%, and 15.49%, which are based on historical performance.

34. Staff's criteria for selecting comparable water utilities includes a requirement that at least 70% of revenues be earned from water operations. This requirement results in the exclusion of companies with predominantly nonutility operations, yet allows a sample size of eleven. A higher revenue threshold would be

desirable, but it would also reduce the sample size, and thereby make it less reliable.

35. If Philadelphia Suburban Co., Consumers Water, and United Water Resources are excluded from the group of water companies used by staff in its DCF analysis, the average for the remaining eight companies is 12.18%.

36. Inclusion of out-of-state utilities in staff's sample of comparable utilities reduces the problem of circularity in determining the returns required by equity investors.

37. Some investors may have come to expect continued high earnings from CWS, but lower returns which are more reflective of market conditions will not endanger CWS's ability to attract capital.

38. CWS's RP analysis, which compared the authorized ROE's and embedded debt costs of five energy and communication utilities and five water utilities, indicates the company is entitled to an ROE of 14.13%, based on comparisons with energy and communication utilities, or 13.54%, based on comparisons with water utilities.

39. For its RP analysis, staff computed the average recorded ROE of the eleven comparable water utilities for each of the years 1978 through 1987 based on each company's earnings/price ratio, and arrived at an ROE range of 11.33% to 11.66%.

40. Risk comparisons with energy and communications utilities are less valid than comparisons with other water utilities. Water utilities are not subject to the same competitive pressures that affect these other utilities.

41. CWS is not significantly affected by the existence of core, noncore, and interruptable customers as energy utilities are.

42. In its RP analysis CWS, relied on a relatively small and therefore less reliable sample of five such companies, compared to staff's group of eleven companies.

43. Any regulatory differences that may exist in other states are likely to have much less of an impact on risk premiums than the

differences between water utilities and energy and communications utilities.

44. Embedded debt costs reflect the weighted costs of all of a firm's outstanding debt issues, and probably will not be the same as the cost of new issues at any point in time. Comparing embedded debt against current equity returns is therefore a less accurate method of ascertaining the premium demanded by investors than contemporaneous comparisons.

45. An RP analysis over a long period of time will correct for temporary swings in debt and equity markets that can otherwise render the analysis less reliable. CWS's comparison of embedded debt and equity returns adopted in 1987 is susceptible to such swings.

46. The risk premiums measured by staff are understated to the extent that stocks were selling above book value.

47. Based on the quantitative analyses of CWS and staff, 12.18% is the single most reliable indicator of the ROE which will be required by investors.

48. Value Line advised its readers in July, 1988 that CWS could be affected by below-normal precipitation and mandatory conservation measures.

49. Equity returns as high as the 14.50% ROE authorized prior to 1986 are no longer required, but recent indications of a rise in interest rates support an ROE as high, if not higher, than that measured through staff's DCF analysis.

50. On a company-wide basis, CWS renders good service, and goes out of its way to accommodate customers who have complaints about service or water quality, and the overall service provided in each district for which rate increases are requested is satisfactory.

51. An ROE of 12.25% will give recognition to the fact that CWS maintains good service standards and a high degree of customer satisfaction, and is a well-managed operation.

52. The resulting rate of return on rate base, incorporating this ROE, our adopted costs of long term debt and preferred stock, and our adopted capital structure, is 11.33% for each of the three years subject to these applications.

53. These returns will result in after-tax interest coverage of 3.32x in 1989, 1990, and in 1991, which should serve to maintain CWS's favorable bond ratings.

54. Prior to enactment of the Tax Reform Act of 1986, CWS used the unbilled revenue method of accounting by which utilities recognized revenues as accrued when the customer's meter was read and a bill based on the meter reading was issued.

55. Utilities are now required to recognize revenues at the time that services or commodities are delivered.

56. For 1986 and earlier years, each year's revenue included approximately a half month's consumption from the previous year and likewise excluded a half month's consumption from the current year.

57. Beginning in 1987, each year's revenue reflects an estimate of actual consumption from January 1 to December 31.

58. TRA-86 requires CWS to pay a one-time tax on $3.775 million in unbilled revenues recorded as of January 1, 1987. This amount represents the estimated revenue for water delivered in December 1986 after meters were read for the month, and is equivalent to 3.45% of the company's 1986 recorded revenue of $109,523,000.

59. Any possible overcollection of taxes in rates which may be applicable is in all likelihood based on an amount equal to less than one-third of 1% of the company's revenue in any year.

60. The statistical data used to develop test year revenue estimates is based on actual consumption data from meter readings; adjustments have never been made to reflect estimates of unbilled revenues.

61. By petition filed jointly with San Jose Water Company on November 2, 1988, CWS has requested modification of D.88-01-061 to

clarify the conditions that would allow a utility to provide for recovery of the one-time tax on unbilled revenues in its rates.

62. I.86-11-019 was established specifically to consider tax issues such as this one, and the issue is now before us in that investigation as a result of CWS's joint petition for modification.

63. CWS has recently decided to stop installing asbestos cement (AC) pipe for mains and to use ductile iron (DI) pipe instead.

64. Anticipated environmental and occupational safety regulations may prohibit the manufacture of AC pipe in the not too distant future.

65. At the time of the August hearings in the Dixon proceedings, CWS was experiencing delays in the delivery of AC pipe of four to six weeks. Some diameters of pipe, such as 12" pipe, required up to eight weeks or longer for delivery. At the time of the November hearings CWS was experiencing average delays of six to eight weeks for delivery of AC pipe, and in some cases as much as 12 weeks.

66. DI pipe is delivered in less than a week, and commonly within two days.

67. There are no known dangers associated with the use of AC pipe for water delivery.

68. Applicant has experienced problems with news media coverage due to its use of AC pipe, and the City of Hermosa Beach has objected to its installation in that city.

69. Installation contractors are encountering increasing problems with safety regulations governing AC pipe.

70. DI pipe has been in extensive use throughout the nation and California for years. It is used by Contra Costa Water District, San Francisco Water District, and San Jose Water Company.

71. Company management considered the change to DI pipe necessary despite cost considerations, not because of them.

72. The expenses relating to use of ductile iron pipe are relatively minor, and it is reasonable to allow the costs for ratemaking even though there is no indication of a direct and immediate financial benefit to ratepayers.

73. CACD adjusted revenue lag day estimates from the utility's 1980 working cash study by adding one lag day to compensate the utility for a delay in bank crediting of revenues, and by subtracting three lag days to reflect a more efficient billing process.

74. CACD calculated that a new electronic meter reading system has reduced the time from the date the meter is read to the date the customer receives the bill by three days.

75. Meters are read and bills are mailed throughout the month.

76. The constant dollar averaging method used by CACD to estimate test year expenses may, in some cases, fail to reflect an increasing trend in expenses.

77. Use of the the least square method without making inflation adjustments could result in erroneous estimates where inflation rates have changed over time.

78. There is a strong possibility that the increase in General Office Outside Services Expenses in 1987 does not indicate an upward trend.

79. The constant dollar averaging method does not disregard the high expense level in 1987, but merely gives it equal weight with the other four years, after accounting for past and future inflation.

80. Any differences that might result from using the labor instead of nonlabor inflation series for General Office Outside Services Expenses would be insignificant compared to those resulting from the different methods used by CWS and CACD.

81. For 1988, 1989,and 1990, the nonlabor inflation factors used by staff were greater than the labor factors.

82. The Water Utilities Branch has determined that the inflation factors furnished by the Advisory Branch are appropriate for use in large water utility proceedings.

83. Disagreement on General Office pension and benefit expenses is due to staff's use of nonlabor inflation factors and the company's use of labor-related inflation factors.

84. The parties agree on the company's labor-related inflation factors for the purpose of estimating payroll expenses.

85. Retirement savings and pension expenses can be expected to vary directly with payroll expenses.

86. From 1983 to 1987, General Office retirements averaged 36.4% of plant additions.

87. There was an unusually large retirement of $288,900 in 1986 associated with the replacement of a mainframe computer. The related addition was a relatively small $96,300.

88. With the year 1986 excluded, the resulting four year average retirement factor was approximately 26%.

89. Using the same five years of data, and excluding both the additions and the retirements associated with the 1986 mainframe replacement (but including the remaining 1986 data), the company developed a retirement factor of 26.3%.

90. Where it is clear that retirements generally average 20% to 30%, it is reasonable to characterize the mainframe computer retirement, which is 300% of the associated addition, as abnormal.

91. The 20 to 30% range for retirements does not include staff's recommendation of 32%.

92. Consumption in July 1988 does not provide a reliable basis for estimating 1988 sales reductions since public awareness of the need to conserve was still growing during that month.

93. Rationing in the SSF District and the company's other districts on the San Francisco Peninsula was not fully implemented until August 1988.

94. Recorded reductions in August, September, and October are more representative of the impact of the 1988 drought than measurements which include July, 1988.

95. Customer response to drought conditions was different in 1977, as indicated by the much greater magnitude of consumption reductions from 1976 to 1977 compared to the reductions from 1987 to 1988.

96. It took as long as seven years before consumption returned to normal levels after the 1977 drought.

97. The measures taken by customers to accomplish even the more modest consumption cutbacks of 1988 can be expected to remain in place, to some extent, beyond 1989.

98. Other Operation Expense includes costs of janitorial services and utility bills and similar costs.

99. The average increase in the recorded Other Operation Expense in the LAS District was 12.9% from 1983 to 1986. The increase from 1986 to 1987 was 33.7%.

100. The average increase in the recorded Other Operation Expense in the SSF District was 10.5% from 1983 to 1985. The increase from 1985 to 1986 was 42.9%. but in 1987 the increase was only 6.1%.

101. Variations in the recorded Other Operation Expense increases do not support estimates of continued increases as great as those projected by the company. Although the increases exceeded inflationary trends in the middle part of the 1980's, there is no reason to expect they will continue to do so in the test period.

102. CACD's method understates the Other Operation Expense estimates because of the much lower expense levels at the beginning of its measurement period.

103. Exclusion of 1983 and 1984 recorded Other Operation Expense levels from staff's calculations results in reasonable estimates.

104. The purpose of paving at Reservoir 3 was to provide a safer place to turn vehicles around. Reservoir 3 is located at the top of a long, steep, and narrow driveway.

105. The purpose of paving improvements at Reservoir 4 was to provide a turning area for vehicles and to reduce damage to the tank and to nearby homes resulting from kids throwing rocks. Paving removed the source of crushed rock.

106. Although not essential, the SSF paving improvements can be expected to contribute to safe and efficient operations, and are therefore reasonable.

107. The rate proposals were prepared in accordance with the water rate design policy guidelines we adopted in D.86-05-064.

108. CWS proposes phasing out lifeline rates by 1990, and retaining two consumption blocks.

109. CACD proposes a guideline that bills of customers with average consumption not be increased by more than twice the overall percentage increase.

110. Applicant's request for authority to establish a sales-related balancing account adjustment mechanism (SAM) in the SSF District is now before us in another proceeding (A.88-05-045), and the parties agree that the issue of a SAM for that district should be considered in that matter.

111. In a general rate case such as this one, we rely on estimates of consumption and sales based on normal conditions, since future weather patterns cannot be predicted accurately.

112. Actual sales will exceed the normalized estimates in some years and be less than the estimates in other years.

113. Operational attrition is the change in rate of return from 1989 to 1990 assuming no change in rates in 1990.

114. The amounts of operating revenues, operating expenses, and rate base, as well as each element thereof, shown on Tables 1 and 2, "At Authorized Rates," represent a fair and reasonable

determination of the revenue requirement for test years 1989 and 1990.

115. CWS requires additional revenues for its LAS and SSF Districts, but the rates proposed would produce an excessive rate of return.

116. The increases in annual revenue required to produce the adopted rates of return are as follows:

	1989		1990		1991	
District	Amount	Percent	Amount	Percent	Amount	Percent
Los Altos-Suburban	$290,000	4.55%	$263,700	3.95%	$127,200	1.83%
South San Francisco	349,500	10.24	190,700	5.07	115,300	2.92

117. The increases in rates and charges authorized in this decision are justified; the rates and charges authorized in this decision are just and reasonable; and the present rates and charges, insofar as they are different from those prescribed in this decision, are for the future unjust and unreasonable.

Conclusions of Law

1. An equity ratio of 53.00% is reasonable and should be adopted.

2. An ROE of 12.25% is reasonable and should be adopted.

3. The issue of whether CWS is entitled to recover the tax expense on unbilled revenue should be considered in future proceedings in the joint petition of CWS and San Jose Water Company for modification of D.88-01-061 in I.86-11-019.

4. Applicant's estimates of plant additions associated with the conversion to ductile iron pipe should be adopted.

5. The working cash allowance should be adjusted to reflect a three day reduction in revenue lag days due to implementation of a new billing system.

6. The estimates of General Office Outside Service expenses of $191,900 in 1989 and $201,500 in 1990 are reasonable and should be adopted.

7. The estimates of General Office Pension and Benefit expenses of $526,500 in 1989 and $557,000 in 1990 for the retirement savings plan and $1,911,000 in 1989 and $2,021,800 in 1990 for the retirement plan are reasonable and should be adopted.

8. General Office plant retirements should be computed using a retirement factor of 26.3%.

9. Normalized consumption estimates should be modified to reflect the effects of rationing and conservation in 1988 and residual conservation in 1989 and 1990.

10. The Other Operation Expenses estimates of $94,400 in 1989 and $99,100 in 1990 in the LAS District, and $76,000 in 1989 and $79,800 in 1990 in the SSF District are reasonable and should be adopted.

11. Applicant's estimates of plant additions for paving at Reservoirs 3 and 4 in the SSF District should be adopted.

12. Applicant's request to establish a sales adjustment mechanism for its LAS District should be denied at this time.

13. CWS should be authorized to file the rates set forth in Appendixes A-1 and A-2 and the step rate increases set forth in Appendixes B-1 and B-2, as specified in the following order.

14. The application should be granted to the extent provided by the following order.

15. Because there is an immediate need for rate relief, and the revenue projections were made for rates to be in effect for the beginning of January, 1989, the order should be effective today.

O R D E R

IT IS ORDERED that:

1. California Water Service Company (CWS) is authorized to file the revised schedules attached as Appendixes A-1 and A-2,

respectively, for its Los Altos-Suburban (LAS) and South San Francisco (SSF) Districts. These filings shall comply with General Order Series 96 (GO 96). The effective date of the revised schedules shall be 5 days after the date of filing. The revised schedules shall apply only to service rendered on and after their effective date.

2. On or after November 5, 1989, CWS is authorized to file an advice letter for each of its LAS and SSF Districts, with appropriate supporting workpapers, requesting the step rate increases for 1990 included in Appendixes B-1 and B-2, or to file lesser increases for any district, in the event that the rate of return on rate base for that district, adjusted to reflect the rates then in effect and normal ratemaking adjustments for the 12 months ending September 30, 1989, exceeds the later of (a) the rate of return found reasonable by the Commission for applicant for the corresponding period in the then most recent rate decision, or (b) 11.33%. This filing shall comply with GO 96. The requested rates shall be reviewed by CACD to determine their conformity with this order and shall go into effect upon the staff's determination of conformity. CACD shall inform the Commission if it finds that the proposed rates are not in accord with this decision, and the Commission may then modify the increase. The effective date of the revised schedules shall be no earlier than January 1, 1990, or 40 days after filing, whichever is later. The revised schedules shall apply only to service rendered on and after their effective date.

3. On or after November 5, 1990, CWS is authorized to file an advice letter for each of its LAS and SSF Districts, with appropriate supporting workpapers, requesting the step rate increases for 1991 included in Appendixes B-1 and B-2, or to file lesser increases for any district, in the event that the rate of return on rate base for that district, adjusted to reflect the rates then in effect and normal ratemaking adjustments for the 12 months ending September 30, 1990, exceeds the later of (a) the rate

of return found reasonable by the Commission for applicant for the corresponding period in the then most recent rate decision, or (b) 11.33%. This filing shall comply with GO 96. The requested rates shall be reviewed by CACD to determine their conformity with this order and shall go into effect upon the staff's determination of conformity. CACD shall inform the Commission if it finds that the proposed rates are not in accord with this decision, and the Commission may then modify the increase. The effective date of the revised schedules shall be no earlier than January 1, 1991, or 40 days after filing, whichever is later. The revised schedules shall apply only to service rendered on and after their effective date.

4. CWS's request for authority to establish a sales-related balancing account adjustment mechanism for its LAS District is denied.

This order is effective today.

Dated APR 26 1989, at San Francisco, California.

G. MITCHELL WILK
President
FREDERICK R. DUDA
STANLEY W. HULETT
JOHN B. OHANIAN
PATRICIA M. ECKERT
Commissioners

I CERTIFY THAT THIS DECISION WAS APPROVED BY THE ABOVE COMMISSIONERS TODAY.

Victor Weisser, Executive Director

pb

California Water Service Company

Los Altos-Suburban District

SCHEDULE NO. LS-1

GENERAL METERED SERVICE

Applicability

Applicable to all metered water service.

Territory

Los Altos and vicinity, Santa Clara County.

Rates

Service Charge:	Per Meter Per Month*	
For 5/8 x 3/4-inch meter	$ 6.20	I
For 1-inch meter	10.80	:
For 1 1/2-inch meter	15.00	:
For 2-inch meter	20.00	:
For 3-inch meter	36.00	:
For 4-inch meter	47.00	:
For 6-inch meter	75.00	:
For 8-inch meter	120.00	:
For 10-inch meter	144.00	I

Quantity Rates:		
For the first 300 cu.ft., per 100 cu.ft.	.748	I
For the next 29,700 cu.ft., per 100 cu.ft.	.951	I
For all over 30,000 cu.ft., per 100 cu.ft.	.913	I

The Service Charge is a readiness-to-serve charge which is applicable to all metered service and to which is to be added the monthly charge computed at the Quantity Rates.

Special Condition

Customers who receive water deliveries for agricultural purposes under this schedule, and who present evidence to the utility that such deliveries qualify for the lower pump tax rates levied by Santa Clara Valley Water District for agricultural water, shall receive a credit of 15.5 cents per 100 cubic foot on each water bill for the quantities of water used during the period covered by that bill.

* All rates are subject to the reimbursement fee set forth on schedule No. UF.

(End of Appendix A-1)

Los Altos-Suburban District

Each of the following increases in rates may be put into effect on the indicated date by filing a rate schedule which adds the appropriate increase to the rate which would otherwise be in effect on that date.

	Effective Dates 1-1-90	1-1-91
Schedule LS-1 General Metered Service		
Service Charge:	**Per Meter Per Month**	
For 5/8 x 3/4-inch meter.....	$ .45	$ .05
For 1-inch meter.....	.80	.10
For 1 1/2-inch meter.....	1.00	.20
For 2-inch meter.....	1.00	.00
For 3-inch meter.....	3.00	.00
For 4-inch meter.....	3.00	1.00
For 6-inch meter.....	5.00	1.00
For 8-inch meter.....	8.00	1.00
For 10-inch meter.....	10.00	2.00
Quantity Rates:		
For the first 300 cu.ft., per 100 cu.ft	.040	.164
For the next 29,700 cu.ft., per 100 cu.ft	.000	.001
For all over 30,000 cu.ft., per 100 cu.ft	.001	.004

(End of Appendix B-1)

California Water Service Company

Los Altos District

Adopted Quantities

PURCHASED POWER			1989		1990
PG&E 5-88					
Well Stations					
Production: KCcf			6,020.3		6,153.1
Kwh per Ccf			872.20		872.20
Wells Kwh(1000)			5,250.9		5,366.7
Unit Cost $/kwh			.10259		.10062
Energy Cost			$538,670.0		$539,970.1
Purchased Water					
Santa Clara WD: AF,KCcf		6158	2,682.4	6211	2,705.5
SCWD,non-cont.AF,KCcf		3,263.7	1,421.7	3291.83	1,433.9
San Jose WC, KCcf			21.5		21.5
total Purch.W. KCcf		4,125.4	4,125.6	4160.9	4,160.9
Cost:SCWD $/AF	195.00		$1,200.8		$1,211.1
SCWD-NonCtr.$/AF	128.00		$417.8		$421.4
SJW $/Ccf	.608		$13.2		$13.2
Zanetti Well,14.4	.03		.432		.432
Total Purchased Water Cost			$1,632.2		$1,646.1
Replen.Assm. KCcf,AF	1894.907		4,350.1	1992.16	4,573.4
Cost $/AF	100.00		$435.0		$457.3
Chemical Cost			$.0		$.0

California Water Service Company

Los Altos District

Adopted Quantities

Number of Service, Meter Size	1989	1990
LS-1		
5/8 x 3/4	14522	14569
1	2070	2076
1 1/2	188	189
2	428	429
3	69	70
4	18	18
6	7	7
8	0	0
10	0	0
total	17302	17358
0 - 3 Ccf	690555	658572
Next 297	4264556	4371516
Over 300	560093	606726
total	5515203	5636815

Number of Service	No.of Service 1989	No.of Service 1990	Usage-KCcf 1989	Usage-KCcf 1990	Avg.Usage Ccf/Yr. 1989	Avg.Usage Ccf/Yr. 1990
Commercial	17080	17135	5,005.4	5,115.3	293.1	303.4
Industrial	29	29	154.5	149.5	5,327.6	5,327.6
Public Authority	174	175	349.8	366.5	2,010.4	2,144.5
Other	19	19	5.5	5.5	289.5	289.5
subtotal	17302	17358				
Private Fire Prot.	272	279				
Public Fire Prot.	3	3				
Total	17577	17637	5,515.2	5,636.8		
Water Loss:8.39%			505.1	516.2		
Total Water Produced			6,020.3	6,153.1		
Purchased Water			4,125.4	4,160.9		
Well			1,894.9	1,992.2		

Note: Normal Comm.CCF/cust. = 304

California Water Service Company

Los Altos District

Utility Plant, Depreciation Reserve, and Rate Base

	1989	1990
	(Thousands of Dollars)	
UTILITY PLANT		
Plant BOY	$ 20,293.5	$ 21,610.7
Utility Add.	1,137.8	849.5
Advances	220.5	220.5
Contributions	58.1	58.1
Total Additions	1,416.4	1,128.1
Retirement	99.2	85.0
Plant EOY	21,610.7	22,653.8
Wgt.Plant @ 49.4%	658.8	515.3
Wgt.Avg. Plant	20,952.3	22,126.0
DEPRECIATION RESERVE		
Reserve BOY	6,279.3	6,625.6
Contrib.	27.6	29.1
Depr Exp.(2.3%)	403.4	430.7
Clear.Chg.	18.9	20.4
Total Accrual	449.9	480.2
Retirement	103.6	95.3
Reserve EOY	6,625.6	7,010.5
Wgt.Accr.@ 58.3%	201.9	224.4
Wgt.Avg.Deprec.Reserve	6,481.2	6,850.0
RATE BASE		
Utility Plant	20,952.3	22,126.0
Material & Sup.	106.5	110.7
Work.Cash Allow.	-61.1	-47.8
Depreciation Reserve	-6,481.2	-6,850.0
Advances For Constr.	-1,950.4	-2,052.0
Contributions-in-Aid	-985.3	-1,019.3
Gen.Office Alloc.	187.8	204.1
Unamort.Defer.Taxes	-678.7	-791.7
Unamort.ITC	-226.4	-220.9
CIAC FTX	55.6	66.0
AC FTX	156.9	191.4
Amortiz.Intangibles	-21.6	-22.1
Avg RATE BASE	11,054.5	11,694.4

California Water Service Company

Los Altos District

Income Tax Calculations

	1989	1990
	(Thousands of Dollars)	
Total Revenues	$ 6,670.3	$ 6,934.0
Purch. Power	538.7	540.0
Purch. Water	1,632.2	1,646.1
Pump Tax	435.0	457.3
Purch. Chem	.0	.0
Payroll	598.9	628.9
OM Other	468.4	486.8
AG Other	15.7	15.9
Gen.Office Alloc.	621.4	649.5
Payroll Tax	46.7	49.6
Ad Valorem Taxes	145.4	151.6
Uncoll. .000658	4.4	4.6
Loc.Franch. .01293	86.5	89.8
subtotal	4,593.3	4,720.1
Interest	553.4	586.6
Total Deductions	5,122.9	5,281.3
State Tax Deprec.	830.2	846.8
State Tax 9.3	66.7	75.0
Federal Tax Deprec.	438.1	450.8
PrefStkDvCr.	3.5	3.5
Fed Tax 34.12%	354.5	383.3
Total Federal Taxes	354.5	383.3
Net/Gross	1.696590	

(End of APPENDIX C-1)

Los Altos-Suburban District

Comparison of typical bills for commercial metered customers of various usage level and average usage level at present and authorized rates for the year 1989.

General Metered Service (5/8 x 3/4) Inch Meters

Monthly Usage (Cubic Feet)	At Present Rates	At Authorized Rates	Percent Increase
300	$ 7.49	$ 8.44	12.7 %
500	9.37	10.35	10.5
1,000	14.06	15.10	7.4
2,000	23.44	24.61	5.0
2,250 (Avg.)	27.58	28.82	4.5
3,000	32.82	34.12	4.0
5,000	51.58	53.14	3.0
10,000	98.48	100.7	2.2

(End of Appendix D-1)

California Water Service Company

South San Francisco District

SCHEDULE NO. SS-1

GENERAL METERED SERVICE

Applicability

Applicable to all metered water service.

Territory

South San Francisco and vicinity, San Mateo County.

Rates

Service Charge:	Per Meter Per Month*	
For 5/8 x 3/4-inch meter	$ 5.50	I
For 1-inch meter	12.10	:
For 1 1/2-inch meter	19.10	:
For 2-inch meter	23.00	:
For 3-inch meter	46.00	:
For 4-inch meter	59.00	:
For 6-inch meter	97.00	:
For 8-inch meter	139.00	:
For 10-inch meter	175.00	I

Quantity Rates:	
For the first 50,000 cu.ft.,per 100 cu.ft...	.771 I
For all over 50,000 cu.ft.per 100 cu.ft.....	.697 I

The Service Charge is a readiness-to-serve charge which is applicable to all metered service and to which is to be added the monthly charge computed at the Quantity Rates.

* All rates are subject to the reimbursement fee set forth on schedule No. UF.

(End of Appendix A-2)

South San Francisco District

Each of the following increases in rates may be put into effect on the indicated date by filing a rate schedule which adds the appropriate increase to the rate which would otherwise be in effect on that date.

	Effective Dates 1-1-90	1-1-91
Schedule SS-1 General Metered Service		
Service Charge:	Per Meter Per Month	
For 5/8 x 3/4-inch meter.....	$ .50	$ .40
For 1-inch meter.....	1.10	.90
For 1 1/2-inch meter.....	1.70	1.50
For 2-inch meter.....	2.00	1.80
For 3-inch meter.....	4.00	4.00
For 4-inch meter.....	5.00	4.00
For 6-inch meter.....	9.00	7.00
For 8-inch meter.....	13.00	11.00
For 10-inch meter.....	16.00	13.00
Quantity Rates:		
For the first 50,000 cu.ft.per 100 cu.ft	.000	.008
For all over 50,000 cu.ft.per 100 cu.ft.	.000	.008

(End of Appendix B-2)

California Water Service Company

South San Francisco District

Adopted Quantities

PURCHASED POWER		1989	1990
PGE 5-88			
Well Stations			
Production: KCcf		3,375.5	3,479.3
Kwh per Ccf		384.00	384.00
Wells Kwh(1000)		1,296.2	1,336.1
Unit Cost $/kwh		.08540	.08540
Energy Cost		$110,699.0	$114,105.2
Purchased Water			
Purch.Water:KCcf		2,824.5	2,928.3
AF		6,484.1	6,722.5
Commd.Cost $/Ccf	.308	869,937.1	901,927.0
Fixed Chrg,$/month	4133	49,596.0	49,596.0
Total Purchased Water Cost		$919,533.1	$951,523.0
Chemical Cost			
Cost, $/MG	2.084	$859.0	$859.0

California Water Service Company

South San Francisco District

Adopted Quantities

Number of Service, Meter Size	1989	1990
SS-1		
5/8 x 3/4	12991	13031
1	661	663
1 1/2	281	282
2	406	409
3	49	50
4	27	26
6	8	8
8	3	3
10	0	0
total	14426	14472
0- 500 Ccf	2785865	2888052
Over 500	433322	430189
total	3219187	3318241

Number of Service	No.of Service 1989	No.of Service 1990	Usage-KCcf 1989	Usage-KCcf 1990	Avg.Usage Ccf/Yr. 1989	Avg.Usage Ccf/Yr. 1990
Commercial	14104	14149	2,639.3	2,788.3	187.1	197.1
Industrial	102	99	394.0	333.5	3863	3863
Public Auth.	200	204	175.5	186.1	877.7	912.1
Other	20	20	10.4	10.4		
subtotal	14426	14472	3,219.2	3,318.2		
Private Fire Prot.	431	443				
Public Fire Prot.	8	8				
Total	14865	14923				
Water Loss:4.63%			156.3	161.1		
Total Water Produced			3,375.5	3,479.3		
Purchased Water			2,824.5	2,928.3		
Well			551.0	551.0		

Note:Normal Comm.CCF/cust. = 207.0

California Water Service Company

South San Francisco District

Utility Plant, Depreciation Reserve, and Rate Base

	1989	1990
	(Thousands of Dollars)	
UTILITY PLANT		
Plant BOY	$ 15,083.0	$ 15,897.6
Utility Add.	648.1	676.7
Advances	165.9	165.9
Contributions	72.5	72.5
Total Additions	886.5	915.1
Retirement	71.9	73.3
Plant EOY	15,897.6	16,739.4
Wgt.Plant @ 44.9%	365.8	378.0
Wgt.Avg. Plant	15,448.8	16,275.6
DEPRECIATION RESERVE		
Reserve BOY	3,603.2	3,859.7
Contrib.	53.1	54.6
Depr Exp.(2.21%)	257.8	273.6
Clear.Chg.	12.8	13.4
Total Accrual	323.7	341.6
Retirement	67.2	68.2
Reserve EOY	3,859.7	4,133.1
Wgt.Accr.@ 53%	135.9	144.9
Wgt.Avg.Deprec.Reserve	3,739.1	4,004.6
RATE BASE		
Utility Plant	15,448.8	16,275.6
Material & Sup.	149.3	158.9
Work.Cash Allow.	105.1	109.0
Depreciation Reserve	-3,739.1	-4,004.6
Advances For Constr.	-2,274.2	-2,349.5
Contributions-in-Aid	-2,012.1	-2,031.2
Gen.Office Alloc.	132.8	144.3
Unamort.Defer.Taxes	-528.6	-625.8
Unamort.ITC	-159.7	-155.7
CIAC FTX	43.7	57.1
AC FTX	104.0	130.3
Amortiz.Intangibles	-11.4	-12.3
Avg RATE BASE	7,258.7	7,696.1

California Water Service Company

South San Francisco District

Income Tax Calculations

	1989	1990
	(Thousands of Dollars)	
Total Revenues	$ 3,762.3	$ 3,953.0
Purch. Power	110.7	114.1
Purch. Water	919.5	951.5
Purch. Chem	.9	.9
Payroll	462.0	485.0
OM Other	346.6	361.8
AG Other	20.8	20.5
Gen.Office Alloc.	439.6	466.7
Payroll Tax	36.4	38.6
Ad Valorem Taxes	83.0	86.8
Uncoll. .001195	4.0	4.2
Loc.Franch.	2.0	2.0
subtotal	2,425.5	2,532.1
Interest	367.6	392.9
Total Deductions	2,776.9	2,908.0
State Tax Deprec.	536.1	553.4
State Tax 9.3	41.8	45.7
Federal Tax Deprec.	311.5	323.9
PrefStkDvCr.	2.2	2.2
Fed Tax 34.12%	214.9	229.7
Total Federal Taxes	214.9	229.7
Net/Gross	1.675311	

(End of APPENDIX C-2)

South San Francisco District

Comparison of typical bills for commercial metered customers of various usage level and average usage level at present and authorized rates for the year 1989.

General Metered Service (5/8 x 3/4) Inch Meters

Monthly Usage (Cubic Feet)	At Present Rates	At Authorized Rates	Percent Increase
300	$ 6.28	$ 7.81	24.5 %
500	7.79	9.36	20.1
1,000	11.58	13.21	14.1
1,560 (Avg.)	15.81	17.52	10.8
2,000	19.15	20.92	9.27
3,000	26.72	28.63	7.2
5,000	41.86	44.05	5.2
10,000	79.71	82.60	3.6

(End of Appendix D-2)

water, was raised at the Los Altos meeting. That complaint was resolved the following day, according to the Commission's files.

The Commission's formal files include letters from nine customers in the LAS District. Most of these expressed customers' concerns about either the magnitude of the rate increases proposed in the amended application or the possibility that rates would not be reduced after the drought is over and sales return to normal.

As part of its investigation, CACD made a study of the company's water quality and its overall level of service. On a company-wide basis, it found that CWS renders good service, and goes out of its way to accommodate customers who have complaints about service or water quality. In reviewing the company's complaint files for the districts subject to these applications, CACD found that almost all complaints are resolved within a day or two. CACD believes that the number of meter over-reads could be reduced in the SSF District. Based on this review and the results of its informal public meetings, CACD concludes that the overall service provided in each district is satisfactory.

Public participation hearings were held in Los Altos on October 31, 1988 and in South San Francisco on November 2, 1988. Statements were heard from five parties in Los Altos and from six parties in South San Francisco. Echoing the concerns expressed in the correspondence from the customers in Los Altos, several parties urged that any rate increases due to drought conditions be made temporary, and that the company share in the hardships imposed by the drought by accepting smaller rate increases.

Evidentiary hearings were held in San Francisco on November 8 and 9, 1988. At the request of the parties, the consolidated record from proceedings involving applicant's Dixon, Hermosa-Redondo, King City, Marysville, and Willows Districts (A.88-04-071, et. al.) was combined with these matters. The Dixon, et al., proceeding will be considered in a separate order.

Applicant presented its evidence through testimony and exhibits introduced by its Executive Vice-President, Donald Houck; its Chief Financial Officer, Treasurer, and Vice-President Harold C. Ulrich; its Director of Water Quality, Raymond Taylor; and the Assistant Chief Engineer, Michael Rossi. The CACD presented its case through the testimony and exhibits of Senior Utilities Engineer/Project Manager Richard Tom and Utilities Engineers Donald Yep, Peter Liu, Larry Hirsch, and Antoine Gamarra, all of the Water Utilities Branch. CACD also called Regulatory Program Specialist Phebe A. Greenwood of the Division of Ratepayer Advocates as its cost of capital witness.

Issues

During the course of these proceedings representatives of applicant and CACD reached agreement on most expense and rate base items. The discussion which follows focuses on the areas of disagreement which remain between CWS and CACD, which are listed below:

Disputed Issues

1. Rate of Return
   a. Capital Structure
   b. Return on Equity
2. Tax on Unbilled Revenue
3. Ductile Iron Pipe
4. Working Cash
5. General Office
   a. Outside Services Expenses
   b. Pension and Benefit Expenses
   c. Plant Retirements
6. Consumption and Sales Estimates
7. District Other Operation Expense

8. Paving at South San Francisco Reservoirs 3 & 4

9. Rate Design and Sales Adjustment Mechanism

Tables 3 through 6 show CWS's and CACD's final estimates of the results of operations for each district, at present rates, for test years 1989 and 1990.

It is clear that company management considered the change to DI pipe necessary despite cost considerations, not because of them. Based on the reasons given by the company, we conclude that reasonable expenses arising from the change should be allowed for ratemaking even though there is no indication of a direct and immediate financial benefit to ratepayers.

Although CACD did not receive from CWS all of the information needed to make an in-depth study of the additional plant costs involved, we do not believe this warrants disallowance of the costs. The estimates of utility plant additions for 1989 due to the conversion to DI pipe are $31,500 in the LAS District and $19,700 in the SSF District. The 1990 estimates are approximately $4,000 higher in each district. Any error or discrepancy which a more in-depth analysis might have uncovered in these estimates (and we have no basis to believe there would be any) would in all likelihood be minor in nature. The company's estimates of costs associated with this decision will be adopted.

The failure to furnish all of the requested information appears to be the result of a communications mix-up and not any attempt to deny CACD access to information to which it was entitled. However, we caution the company that for the future it must have full justification available in a timely manner for staff review if it expects such higher costs to be included in rates.

Working Cash

CACD and applicant disagree on the amount of working cash that should be allowed in rate base, primarily because their estimates of the number of lag days in billing and collecting of revenues are different. These differences are reflected in the following table. Other differences, which are due to different expense estimates, are minor.

California Water Service Company

Los Altos District

Adopted Quantities

PURCHASED POWER		1989		1990
SCE 6-88				
Well Stations				
Production: KCcf		6,020.3		6,153.1
Kwh per Ccf		872.20		872.20
Wells Kwh(1000)		5,250.9		5,366.7
Unit Cost $/kwh		.10259		.10062
Energy Cost		$538,670.0		$539,970.1
Purchased Water				
Santa Clara WD: AF,KCcf	6158	2,682.4	6211	2,705.5
SCWD,non-cont.AF,KCcf	3,263.7	1,421.7	3291.83	1,433.9
San Jose WC, KCcf		21.5		21.5
total Purch.W. KCcf	4,125.4	4,125.6	4160.9	4,160.9
Cost:SCWD $/AF	195.00	$1,200.8		$1,211.1
SCWD-NonCtr.$/AF	128.00	$417.8		$421.4
SJW $/Ccf	.608	$13.2		$13.2
Zanetti Well,14.4	.03	.432		.432
Total Purchased Water Cost		$1,632.2		$1,646.1
Replen.Assm. KCcf,AF	1894.907	4,350.1	1992.16	4,573.4
Cost $/AF	100.00	$435.0		$457.3
Chemical Cost		$.0		$.0

California Water Service Company

Los Altos District

Income Tax Calculations

	1989	1990
	(Thousands of Dollars)	
Total Revenues	$ 6,670.3	$ 6,934.0
Purch. Power	538.7	540.0
Purch. Water	1,632.2	1,646.1
Pump Tax	435.0	457.3
Purch. Chem	.0	.0
Payroll	598.9	628.9
OM Other	468.4	486.8
AG Other	15.7	15.9
Gen.Office Alloc.	621.4	649.5
Payroll Tax	46.7	49.6
Ad Valorem Taxes	145.4	151.6
Uncoll. .00418	4.4	4.6
Loc.Franch..00489	86.5	89.8
subtotal	4,593.3	4,720.1
Interest	553.4	586.6
Total Deductions	5,122.9	5,281.3
State Tax Deprec.	830.2	846.8
State Tax 9.3	66.7	75.0
Federal Tax Deprec.	438.1	450.8
PrefStkDvCr.	3.5	3.5
Fed Tax 34.12%	354.5	383.3
Total Federal Taxes	354.5	383.3
Net/Gross	1.696590	

(End of APPENDIX C-1)