

ORIGINALDecision No. 71886

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of the)
SOUTHERN CALIFORNIA WATER COMPANY to)
extend the grace period prescribed in)
Section VI, Paragraph 6, Sub Paragraph)
b (4) of General Order No. 103.)

Application No. 43260
(Reopened June 1, 1966)

In the Matter of the Application of)
CALIFORNIA WATER SERVICE COMPANY, a)
corporation, for an order extending)
from 5 to 10 years the grace period)
authorized under Section VI 6.b. (4) of)
General Order No. 103 within which)
Applicant may adopt a test period for)
the periodic test of water meters,)
size two inches and smaller.)

Application No. 43468
(Reopened June 1, 1966)

In the Matter of the Application of)
CALIFORNIA WATER & TELEPHONE COMPANY,)
a corporation, extending the grace)
period authorized under Section VI,)
Paragraph 6, Subparagraph 6.b (4) of)
General Order No. 103, for an addi-)
tional five years for Applicant to)
determine and adopt a periodic testing)
program for water meters.)

Application No. 43572
(Reopened June 1, 1966)

In the Matter of the Investigation on)
the Commission's own motion to consider)
the adoption of Service Standards and)
Service Rules for water utilities under)
its jurisdiction.)

Case No. 5663
(Reopened June 1, 1966)

Firley C. Cleveland, for Southern California Water Company;
McCutchen, Doyle, Brown, Trautman & Enersen, by A.
Crawford Greene, Jr., and C. G. Ferguson, for California
Water Service Company; Bacigalupi, Elkus, Salinger &
Rosenberg, by Michael B. Foley, and Norman Beenfeldt,
for California-American Water Company 1/; applicants in
the various applications and among the respondents in
Case No. 5663.

F. T. Searls, John C. Morrissey and Ross Workman, for
Pacific Gas and Electric Company; Robert M. Ritchey, and
N. J. Kendall, for San Jose Water Works; Homer H. Hyde,
for The Campbell Water Company; John E. Skelton, for
San Gabriel Valley Water Company; interested parties in
the applications and among the respondents in Case
No. 5663.

James F. Haley and Donald B. Steger, for the Commission
staff.

1/ Successor in interest to California Water & Telephone Company
in these proceedings.

A. 43260, 43468, 43572, C. 5563 ds

O P I N I O N

Decision No. 62674, dated October 17, 1961, in the above-entitled applications (1) granted applicants Southern California Water Company, California Water Service Company and California Water & Telephone Company an extension of time until June 30, 1965, to determine the most economic test period for the periodic test of water meters, (2) directed applicants to initiate, and maintain until changed by further order of the Commission, a 15-year cycle of meter testing, (3) authorized each applicant to retain a limited number of meters in service for longer than 15 years, for sampling purposes, and (4) directed each applicant to file certain reports annually, showing data on individual systems, meters and meter tests. On June 1, 1966, these proceedings were reopened along with Case No. 5663, the Commission's investigation which resulted in the promulgation of General Order No. 103, Rules Governing Water Service Including Minimum Standards for Design and Construction. The purpose of reopening the proceedings was limited to determining (1) if it is appropriate to modify the 10-year test period now prescribed by Subsection VI.6.b.(2) of General Order No. 103 for all utilities which have not obtained specific approval for a different period, and (2) whether other specific test periods should be authorized for applicants in these proceedings.

Public hearing on the reopened consolidated proceedings was held before Examiner Catey at San Francisco on September 21, 1966, and at Los Angeles on November 29, 1966. The matters were submitted on the latter date.

Effect of Wear on Water Meters

From a regulatory standpoint, one essential purpose of meters on water customers' services is to distribute equitably among those customers the operating expenses and return on the investment necessary to provide water service. Unless the meters are reasonably accurate (or all equally inaccurate) they do not achieve that basic purpose. Customers using water through meters of different accuracies would pay different amounts for identical quantities.

Data summarized in staff Exhibit No. 8 shows that wear causes the water meters used on customers' services to under-register. This indicates that there is no customer over-billing problem related to normal deterioration of water meters. Also, it is apparent that extremely rigid accuracy requirements could eliminate the discrimination inherent in customer meters not of identical accuracies, but the resulting cost of frequent testing and repairing meters could result in higher water bills for all customers. There is, then, some optimum frequency for testing meters where the incremental average cost of more frequent testing would approximate the incremental average annual revenue which would be gained by further reducing under-registration. The problem is to determine the optimum test frequency.

The exhibits presented by various parties in the reopened proceedings show that there are many conditions which could influence wear in water meters. These include such factors as the aggressiveness of the water, the amount of undissolved abrasive solids in the water, and the customers' use characteristics. Although the rate of meter wear therefore varies somewhat from one area to another and even within the same area, tests conducted by

applicants and others in the water works industry show that the percentage loss in registration of any particular meter or group of meters generally increases with the number of years in service.

There is conflicting evidence as to the relative wear during various periods of a meter's use: Based upon data summarized in Exhibit No. 9, Southern California Water Company concludes that the percentage loss in registration increases less rapidly during later periods than it does initially; based upon data summarized in Exhibits Nos. 10 and 12, respectively, California Water Service Company and San Jose Water Works conclude that the percentage loss in registration increases at a constant rate; based upon data summarized in Exhibit No. 11, California-American Water Company concludes that the percentage loss in registration increases at a **constant rate in that utility's San Gabriel Valley and Monterey Peninsula Divisions**, but increases more rapidly in later years in its San Diego Bay Division.

Determination of Optimum Frequency of Tests

The Commission staff has reviewed the studies made by applicants and others as to appropriate test periods and has summarized those results in Exhibit No. 8. The staff concludes that the present maximum test period of 10 years for all sizes of meters, as now prescribed by General Order No. 103, is too short and recommends that the test period be increased to 20 years for meters smaller than 1 inch and increased to 15 years for 1-inch meters. The order which follows so provides.

In Exhibit No. 9, Southern California Water Company requests specific authority to adopt essentially the test periods recommended by the staff. Such specific authority will not now be required because of the revisions in General Order No. 103.

In Exhibit No. 10, California Water Service Company requests authority to adopt test periods of from 20 to 30 years for its various districts, based upon economic studies summarized in the exhibit. The studies indicate, however, that average final loss of registration for the 30-year age group would normally be about 3-1/2 percent and that the average for seven 29-year meters was almost 4-1/2 percent. Presumably, half of the meters within an age group would have even greater losses. This much error could discriminate unduly against those customers with newer meters. Also, the studies were based primarily upon 5/8 x 3/4-inch meters and there is no indication that they would be applicable to large meters.

In Exhibit No. 11, California-American Water Company presented studies and requested authority to adopt test periods of from 21 to 30 years for 5/8 x 3/4-inch meters and other test periods for larger meters in its various divisions. A representative of the utility stated at the November 29 hearing, however, that the utility would be willing to adopt the test periods recommended by the Commission staff.

In Exhibit No. 12, San Jose Water Works presented studies and concluded that it should test 1-inch and smaller meters every 20 years, 1 1/2-inch meters every three years, 2-inch meters every two years, and 3-inch and larger meters every year. Except for the 20-year test period proposed for 1-inch meters, the test periods recommended by this utility fall within the staff's recommendations. No evidence was presented to justify inclusion of 1-inch meters in the 20-year test category.

In Exhibit No. 13, San Gabriel Valley Water Company concurred with the test periods recommended by the staff.

Development of Concurrent Criteria for Tests

All of the studies presented used "years" as the final sole criterion for testing meters. This is not unreasonable as long as the average meter error for the age group is relatively low. Some additional criterion should be established if meters are to stay in service for longer than the 20-year period prescribed by the order which follows. The economic studies made by California Water Service Company and California-American Water Company indicate that longer periods may be appropriate in some of their service areas if the meters with the most wear could be identified and tested earlier to avoid undue discrimination. Specific limited authority for longer test periods would permit investigation by those utilities as to an additional criterion. Such authority is granted by the order which follows.

It is reasonable to assume that, with all conditions except cumulative deliveries held constant, a meter which has delivered a large amount of water has been subjected to more wear than one which has delivered only a small amount. For utilities whose records permit a determination of the total amount of water delivered through a meter since its previous repair, this may provide the necessary additional criterion which would permit test periods of longer than 20 years. The temporary authority for longer test periods granted to two utilities herein permits the development of data which will indicate the correlation, if any, between cumulative deliveries and loss in registration of a meter.

Other Changes in General Order No. 103

The Commission staff recommends in Exhibit No. 8 that Subsection VI.6.c of General Order No. 103 be modified to extend the time for the filing of annual summaries of meter tests to

A. 43250, 43468, 43572, C. 5663 ds

March 31 so that the summaries may be filed concurrently with the utilities' filing of their annual reports to the Commission. This recommendation is adopted in the order which follows.

San Gabriel Valley Water Company suggests in Exhibit No. 13 that the wording of General Order No. 103 be modified to make it clear that meters removed from service at the end of the periods prescribed by the order need not be tested before, in addition to after, overhaul. The utility also suggests that meters in which a type of intermediate gear train lubricant is used which will not flow into the measuring chamber during storage be exempted from the present requirement that the meters be stored in an inverted position. A third suggestion by this utility is the deletion of the present requirement that the meter records include cross-reference data showing the address of each premise where the meter has been in service, inasmuch as this information serves no useful purpose. These suggestions all appear reasonable and are adopted in the order which follows.

The provisions of Subsections VI.6.b.(3) and (4) relate to meters which were installed prior to July 1, 1956, and to an initial grace period for adopting a test period. Both subsections have expired and are deleted by the order which follows.

Subsection II.1. refers to the United States Public Health Service Drinking Water Standards of 1946. Subsection VII.1. refers to General Order No. 96. We take official notice of the facts that the drinking water standards were amended in 1956 and 1962 and that General Order No. 96 was superseded by General Order No. 96-A. To avoid future revisions of General Order No. 103, the order which follows eliminates reference to the specific year

A. 43260, 43468, 43572, C. 5663 ds

of the drinking water standards and the specific number of the general order relating to tariff filings.

Section V.1. of General Order No. 103 refers to a specific decision of the Commission which prescribed a uniform water main extension rule. That decision has been superseded by a later decision, which, in turn, could in the future be superseded by other decisions. The order which follows modifies this provision to avoid reference to a specific decision.

The various changes discussed in the foregoing paragraphs go beyond the previously stated scope of these reopened proceedings. The changes are not of a controversial nature, however, so it is appropriate and efficient to effect them at this time.

Findings and Conclusions

The Commission finds that:

1. The proposed changes in General Order No. 103 discussed in the foregoing opinion and incorporated in the order which follows are reasonable and not adverse to the public interest.

2. Additional time is needed for collection of data to determine whether meter test periods longer than prescribed in General Order No. 103, as revised, are appropriate for some territories served by California Water Service Company and California-American Water Company.

The Commission concludes that General Order No. 103 should be revised and that the aforementioned two utilities should be authorized temporarily to adopt the test periods set forth in the order which follows.

O R D E R

IT IS ORDERED that:

1. Subsections II.1.b.(1)(c), II.1.c.(1), II.1.c.(2), V.1, VI.4., VI.6., VI.8. and VII.1. of General Order No. 103 are revised to effect the following additions as underlined and deletions as printed in strike-out type:

II.1.b.(1)(c) . . . the United States Public Health Service Drinking Water Standards ~~of 1946.~~

II.1.c.(1) . . . the United States Public Health Drinking Water Standards ~~of 1946.~~

II.1.c.(2) . . . the United States Public Health Service Drinking Water Standards ~~of 1946.....~~

V.1. Mains. Each utility shall file with this Commission as a part of each of its regularly filed tariff schedules ~~and~~ the main extension rule in conformity with Decision No. 10380 of ~~prescribed by this Commission dated~~ September 28, 1934 and as reported in ~~BB CALI FCC Page 400.~~

VI.4. Initial Tests and Storage of Meters. Every water meter shall be tested as required by these rules prior to its installation either by the manufacturer, the utility or any reliable organization equipped for meter testing. Each meter should be stored in an inverted position or utilize a type of intermediate gear train lubricant which will not flow into the measuring chamber during storage, and unless so stored or lubricated it shall be so tested immediately before installation.

VI.6. Periodic Test of Water Meters.

a. General. The length of time that a meter shall be allowed to remain in service before ~~retesting and repair~~ being tested, or overhauled and tested, should be determined from an economic analysis.

b. Test Periods.

(1) Adoption of Test Periods by Utility. A utility may adopt a test period for the periodic test of meters within any well defined separate system as the utility may deem appropriate, based upon a consideration of relevant economic factors and accuracy of meters, provided authorization for such test period for any such separate system is first obtained from the Commission. Requests for such authorization may be made by an application and showing of necessity by letter.

(2) Test Periods if Not Adopted by Utility.

Unless a test period for such periodic tests of meters shall have been adopted as provided in paragraph (1), above, no meter shall be allowed to remain in service without retesting for more than ten the ~~number of years from the date when last~~ ~~tested without again being retested in the~~ ~~manner provided by these rules/~~ indicated in the following tabulation:

<u>Size of Meter</u>	<u>Maximum Period</u>
<u>Smaller than 1-inch</u>	<u>20 years</u>
<u>1-inch</u>	<u>15 years</u>
<u>Larger than 1-inch</u>	<u>10 years</u>

Nothing in these rules shall be construed to mean that such periodic tests may not be made more frequently than once in every ten years the maximum period specified herein.

(B) Tests in Service at the Time These Rules Become Applicable. Each utility shall test its meters installed previous to the time these rules become applicable progressively over the test succeeding ten-year period from such time or over such other period as may be adopted as provided in paragraph (1), above, as the applicable periodic test period within any well defined separate system. The order of test of these meters shall be such that those in service the longest first of time over the applicable periodic test period from the time when last tested shall be tested first wherever practicable.

(C) Provision for Initial Twenty-Year Test Period. When application is to be made for interconnection of a test period/under paragraph (1), above, the utility shall have a period of five years from the effective date of these rules within which to adopt a test period for the periodic test of meters within any well defined separate system as the utility may deem appropriate and the provisions of paragraphs (2) and (B), above, shall not be applicable to the utility during

such liberty period so long as the utility shall be reasonably engaged in the work necessary to the adoption of such test period or shall be seeking Commission authorization with respect to a request therefore submitted to the Commission. When such application is to be made hereunder and the utility desires to avail of such liberty period the utility shall notify the Commission in writing within one year from the effective date of these rules.

- c. Report of Periodic Tests of Meters. Each utility shall make a summary of all periodic tests of meters made each calendar year as required by these rules and shall submit such summary concurrently with, or as part of, the utility's Annual Report to the Commission by not later than March 15th of the for that year following.

VI.8. Meter Records. Each utility shall keep records giving for each displacement and other mechanical meter owned and used by it for any purpose the identification number, name of manufacturer, serial number, type, size and the address of the premises where the meter has been in service, with dates of installation and removal. These records shall also give condensed information, including dates, concerning all tests including dates. The records shall be maintained in a manner such that the date of the last test is readily ascertainable.

VII.1. Filing of Tariffs. Each utility shall file with the Commission its tariff schedules containing all tariff sheets in accordance with the procedure ~~provided for in General Order 90~~ prescribed by the Commission.

2.a. Until January 1, 1969, California Water Service Company is authorized to adopt the following maximum test periods for the periodic tests of 1-inch and smaller meters:

<u>District</u>	<u>Test Period-Years</u>	
	<u>1-Inch Meters</u>	<u>Smaller Meters</u>
Bakersfield	25	30
Bear Gulch	15	20
Broadmoor	20	25
Chico	25	30
Dixon	25	30
East Los Angeles	25	30
Hamilton City	25	30
Hermosa-Redondo	25	30
King City	20	25
Livermore	20	25
Los Altos-Suburban	15	20
Marysville	25	30
Oroville	25	30
Salinas	20	25
San Carlos	20	25
San Mateo	20	25
Selma	25	30
South San Francisco	25	30
Stockton	25	30
Visalia	25	30
Willows	25	30

b. Until January 1, 1969, California-American Water Company is authorized to adopt the following maximum test periods for the periodic tests of meters:

<u>Division</u>	<u>Test Period-Years</u>	
	<u>1-Inch Meters</u>	<u>Smaller Meters</u>
Monterey Peninsula	15	30
San Gabriel Valley	20	25
San Diego Bay	15	20

A. 43260, 43468, 43572, C. 5663 ds

c. On or before June 30, 1968, if the test periods authorized in the foregoing paragraphs 2.a. or 2.b. are adopted, the utility may file in this proceeding a summary of data reasonably available to show the correlation, if any, between the accuracy of meters which have been in use for equal numbers of years but which have delivered different quantities of water since their previous overhaul. Unless the Commission issues a further order herein based upon such data, the authority granted in paragraphs 2.a. and 2.b., above, will expire on the date indicated.

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

Dated at San Francisco, California, this
24th day of JANUARY, 1967.

[Signature]
President

[Signature]

[Signature]

[Signature]

Commissioners

Commissioner WILLIAM SYMONS, JR. did not participate in the disposition of this proceeding.