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REPORT ON THE OPERATIONS
OF
CALIFORNIA GAS UTILITIES
YEARS 1938-1955

Work Order No. S-1327

San Francisco, California
October 29, 1956

COMMISSIONERS
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Public Utilities Commission
STATE OF CALIFORNIA

October 29, 1956

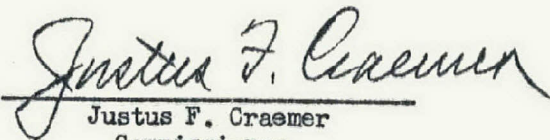
ADDRESS ALL COMMUNICATIONS
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FILE NO.

CALIFORNIA STATE BUILDING
SAN FRANCISCO 2, CALIF.

The writer is deeply indebted to the Section and Division staff members for their assistance in the preparation of the accompanying study. It is a dramatic illustration of the gas utility growth and expansion under jurisdiction of the California Public Utilities Commission during my tenure as a member of this Commission.

This study reviews the period from January 1, 1939, up to the present date. These years have been eventful years in California utility growth. The study and graphs vividly reflect the story of the tremendous growth in population and the many complex problems which this growth and the busy war years have brought to the Commission and its staff.



Justus F. Craemer
Commissioner

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CHAPTER 1

GENERAL

1. Most of the large communities in the State of California were being served with natural gas by 1938. The use of natural gas for cooking, water heating and space heating, and the increasing demands for fuel by the industries, resulted in the merger of the small manufactured gas companies with the large companies having supplies of natural gas. These mergers reduced the number of gas utilities so that at the present there are 16 gas companies under the jurisdiction of the Commission. Of these, the four largest serve more than 90% of the customers.

2. The rise in industrial activity, coupled with the rapid population growth after the second World War, has created problems in the need for new sources of supply, and for more and larger facilities to serve the increasing demands for gas. These problems have been, and are being adequately met by the utilities with the help of the Commission.

CHAPTER 2

UTILITY GROWTH

1. Customer growth in California has been phenomenal. In 1938, there were 1,660,000 gas customers and in 1955 there were 3,782,000 representing an increase of 128 per cent in 17 years. The use of gas per customer also has increased. In 1944, the average use per customer for the five largest utilities was 72.9 Mcf per year. By 1955, the comparable figure was 102.5 Mcf per year. The miles of pipeline installed also have increased. In 1940, the four major companies, Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Gas Company, and Southern Counties Gas Company owned and operated 2,330 miles of transmission mains, and 21,006 miles of distribution mains. As of January 1, 1956, these same four companies operated 5,128 miles of transmission mains and 36,728 miles of distribution mains. This is an increase of 120 per cent and 75 per cent, respectively, in 15 years.

Requirements and Supply

2. Even before 1938, it was apparent to the Commission and to the utilities that natural gas supplies within the state were at a premium. Annual studies of the production and use of natural gas, and ways and means of eliminating gas wastage were prepared by the staff. These reports pointed out the increasing demands for gas and the gradual decrease of the reserves within the state. On March 13, 1941, the Department of Natural Resources and the Commission jointly issued a public statement that a thorough investigation by the two agencies would be undertaken, with the objective of obtaining comprehensive knowledge of present and future gas reserves and the formulation of a program for their better control and more efficient utilization. All interested parties were called upon to cooperate with appropriate agencies of the State of California in obtaining the information.

2 - UTILITY GROWTH

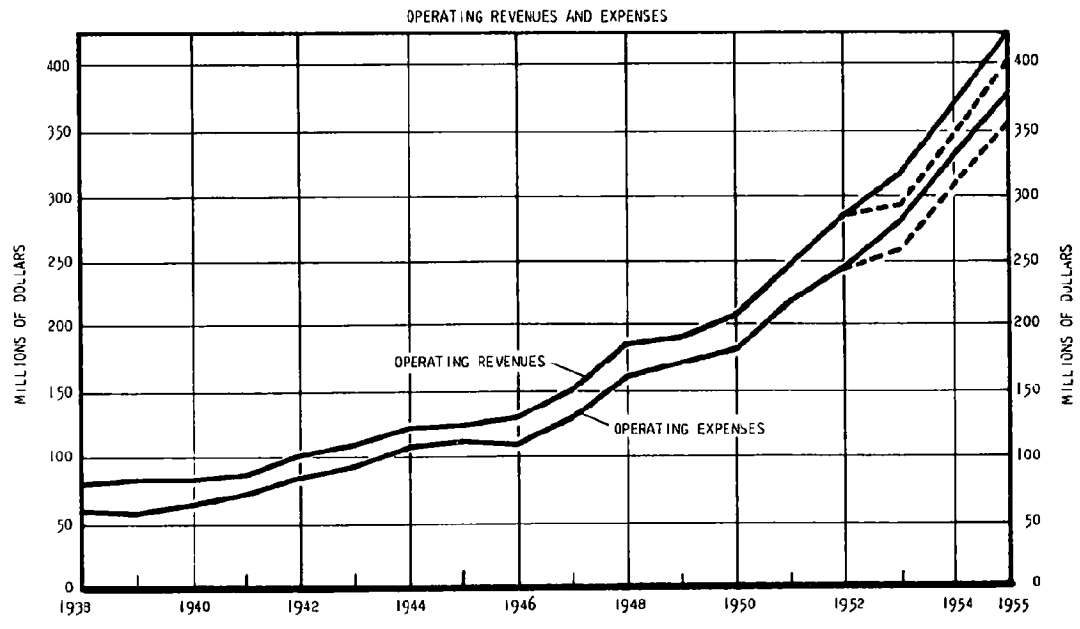
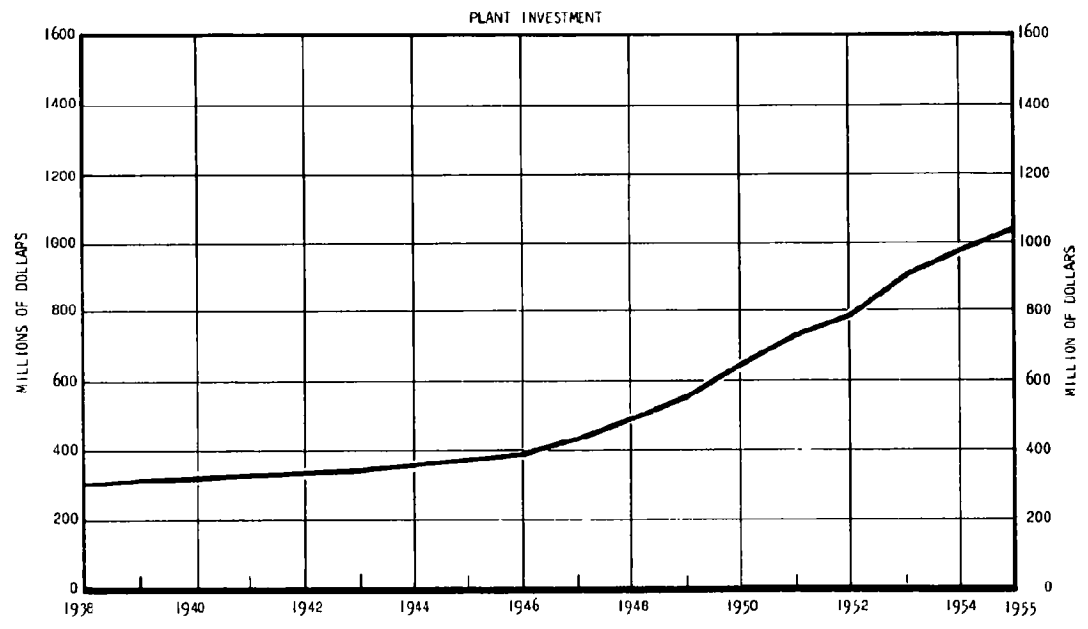
3. Actual data and growth for all privately owned gas utilities, excepting where noted, are shown in the following tabulation:

Item	Year		Per Cents Increase	1955 Index: 1938=100
	1938	1955		
Plant Investment (Million Dollars)	\$ 304	\$1,040	242%	342
General Service Sales* (Million Dollars)	56	267	377	477
All Other Sales* (Million Dollars)	24	137	471	571
Total Operating Revenues (Million Dollars)	80	404	405	505
Operating Expenses* (Million Dollars)	59	355	502	602
Customers -(Thousands)				
Publicly-Owned Utilities	60	117	95	195
Privately-Owned Utilities	1,600	3,665	129	229
Total	1,660	3,782	128	228
Gas Receipts*-(Million Mcf)				
California	192	300	56	156
Out-of-State	0	513	-	-
Total	192	813	328	428

* Excludes Pacific Lighting Gas Supply Company, which sells only to Southern California Gas Company and Southern Counties Gas Company of California.

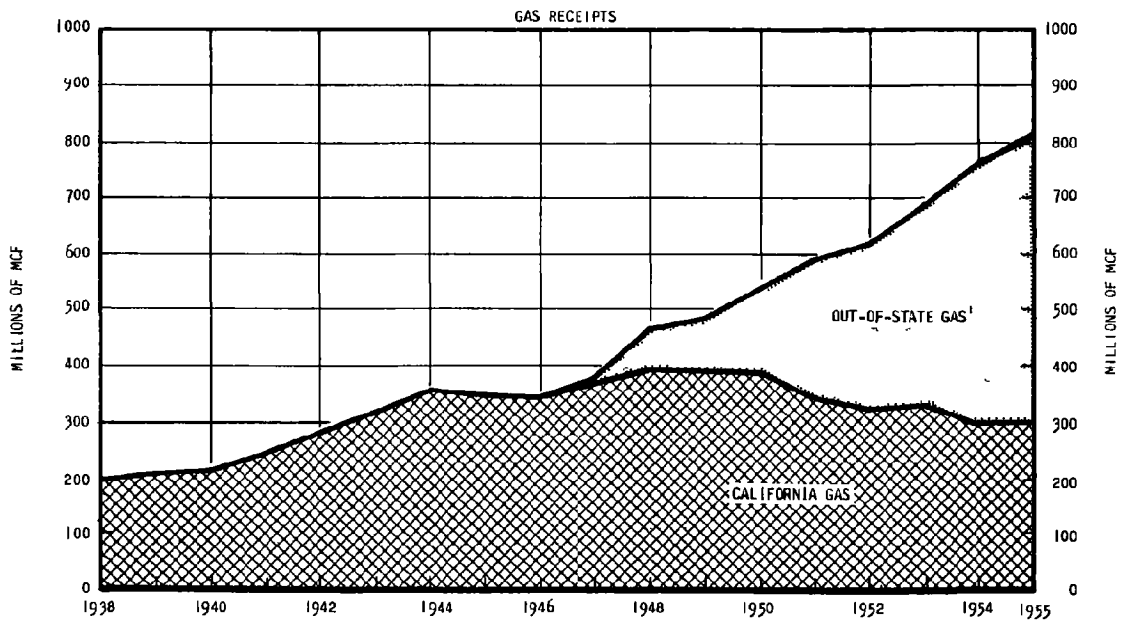
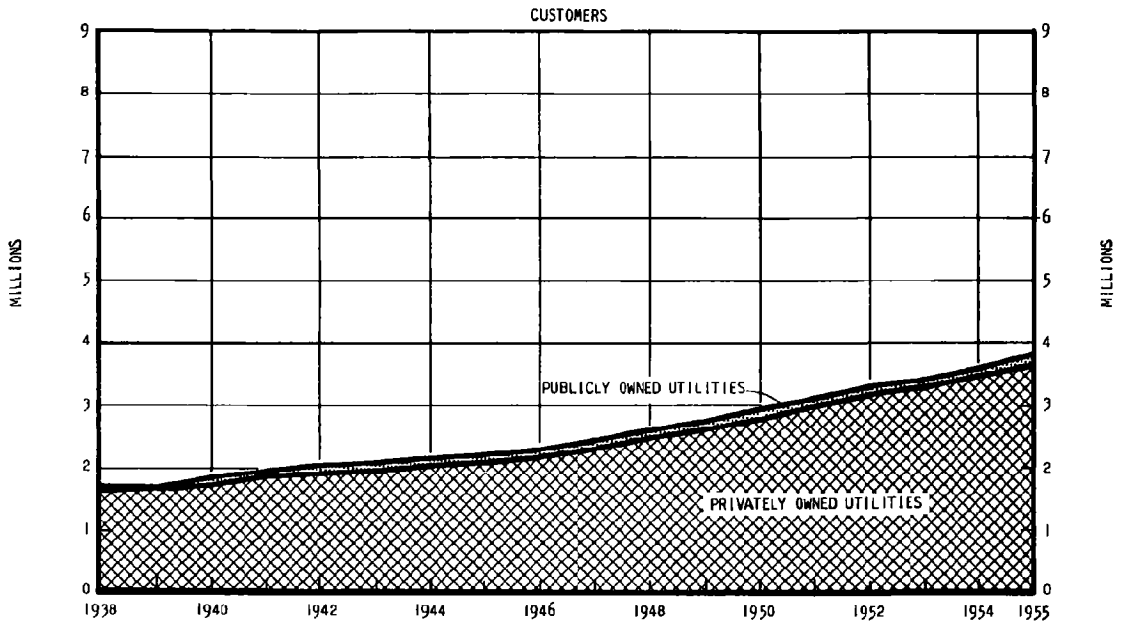
4. The growth curves which follow depict the growth in the foregoing tabulation (excepting General Service Sales and All Other Sales).

GAS UTILITIES
GROWTH CURVES
1933-1955



----- EXCLUDES PACIFIC LIGHTING GAS SUPPLY COMPANY. THIS COMPANY SELLS ONLY TO SOUTHERN CALIFORNIA GAS COMPANY AND SOUTHERN COUNTIES GAS CO. OF CALIFORNIA FOR RESALE

GAS UTILITIES GROWTH CURVES 1938-1955



CHAPTER 3

GAS RESERVES

1. In April, 1941, the Commission issued its order instituting an investigation in Case No. 4591, to secure information as to production, transmission, distribution and utilization of natural gas. The first complete report of estimated gas reserves of the State of California was finished in 1942.

2. A second report covering estimated natural gas reserves of California as of January 1, 1946, was jointly prepared by the Commission and the Department of Natural Resources. This report was presented during the public hearings in Case No. 4591. With this basic reserve report as a starting point, the State Department of Oil and Gas has issued succeeding reserve estimates at six months' intervals which are made available to the Commission.

3. The 1946 report showed that the California gas reserves, estimated at 11.4 trillion cubic feet as of June 1, 1946, would last for about 21 years, assuming the 1946 rate of withdrawal. As of January 1, 1956, it is estimated that the existing reserves of 8.8 trillion cubic feet would be exhausted in about 16 years at the current rate of withdrawal. Estimated natural gas reserves by years from 1946 through 1956 are shown in the following tabulation:

<u>Year</u>	<u>Reserves as of January 1</u> <u>MMcf</u>
1946	11,421,451
1947	11,839,428
1948	10,221,788
1949	9,683,214
1950	9,510,761
1951	9,161,342
1952	9,534,996*
1953	9,300,432
1954	8,922,960
1955	8,901,319
1956	8,778,556

* Revision of previous estimates for certain oil fields in Southern California and the inclusion of certain other fields throughout the state previously not included.

4. A number of oil and dry gas fields have been discovered during the past years. The more important of these are as follows:

3 - GAS RESERVES

- a. Oil Fields.
 1. Jacalitos, Fresno County.
 2. Gujarral Hills, Fresno County.
 3. Russell Ranch and South Cuyama, Santa Barbara County.
 4. San Ardo, Monterey County.
 5. Oak Ridge, Ventura County.

- b. Dry Gas Fields.
 1. Millar and Winters, Yolo County.
 2. River Island and Isleton, Sacramento County.
 3. Bee Hive Bend, Ord Bend, and Willows, Glenn County.
 4. Maine Prairie and Kirby Hills, Solano County.
 5. Wild Goose, Butte County.

The limits on many of the older fields were extended and, in some cases, new pools were discovered in deeper horizons. The gross reserves of the State were increased as a result of the discoveries. However, the net effect of new discoveries is reflected in the declining reserves shown above.

5. The information assembled in Case No. 4591 emphasized the inadequacy of California gas resources to provide for the future requirements of the state's gas industry. The investigation revealed that the importing of gas was the most practical method of augmenting the state's gas resources.

6. Early in 1942 a special study of the supply and peak demands by areas for the winter of 1942-43 was prepared by the staff at the request of the Commission. This report showed the inadequacy of supplies for certain areas on days of extreme peak demand and the need for maintaining gas manufacturing plants to carry the peak demands in those areas.

7. Subsequent peak-day studies for succeeding winter periods continued to show the need for additional supplies and/or capacity in certain areas. To meet these peak loads the Commission encouraged the companies to reinforce their systems and to tie in all new sources of gas as rapidly as possible.

8. In March 1951 the Commission opened an investigation under Case No. 5272, the object of which was:

- a. To assemble the information regarding the ability of gas utilities to meet increasing demands occasioned by the Korean war,
- b. To establish uniform procedures, whenever deemed necessary, for the several utilities relative to rules and regulations for gas service, and
- c. To obtain estimates of requirements for gas service from present and prospective gas customers throughout the state.

3 - GAS RESERVES

A number of public hearings were held during the period of March 13, 1951, to May 14, 1953. During this period the Commission issued an interim opinion summarizing the outlook at the time of the supply of gas and the immediate and future demand for gas. The Commission stated, "It is our opinion that the utilities' plans for obtaining additional out-of-state gas and expanding systems to meet the growing military and defense load are sound and that the critical materials to accomplish such expansion should be made available by the national defense authorities."

9. In the Commission order terminating the investigation (Decision No. 49127 dated September 22, 1953) the Commission recommended that the several gas utilities in this state take the following cooperative action:

- a. Continue existing gas committees and their activities, modified whenever necessary, and annually on or before June 1 of each year prepare and submit to the Commission a report of current and near future gas supply-demand relationships.
- b. Promptly advise the Commission of any new fields or any new sources of natural gas and of any major changes in gas source or availability.
- c. Investigate and periodically inform the Commission as to the status and development of new underground or seasonal storage projects in the state.

Since the issue of this latter order by the Commission several underground storage projects have been enlarged or are now being developed.

CHAPTER 4

UNDERGROUND STORAGE

1. Just prior to the start of World War II, the Southern California Gas Company started an investigation into the use of Playa del Rey gas field as an underground storage reservoir. The tests proved satisfactory but due to the complicated ownership of land and mineral rights, the purchase was delayed. Because of the urgent need for peak-shaving facilities in the Los Angeles area, the Commission took an active part in the negotiations which were terminated by the purchase of the field by the Defense Plant Corporation. The Commission then authorized the Southern California Gas Company by Decision No. 37450 to enter into a contract agreement with the Defense Plant Corporation for the injection, storage and withdrawal of natural gas from this field. The Commission's interest in this project made possible the use of this field during the critical war years for peak-shaving and providing for the ever increasing demands for gas in the Los Angeles area.

2. At about this same time the Pacific Lighting Corporation, through one of its subsidiaries (later known as Pacific Lighting Gas Supply Company), tested the La Goleta field as a possible underground storage reservoir. These tests were satisfactory.

3. The Pacific Lighting Corporation acquired the field in 1940, with the first full year of operations being 1942. With the increasing peak-day demands of the Los Angeles area, the injection and withdrawal rates of both Playa del Rey and La Goleta fields have been increased. Tabulated below are the present storage capacities, delivery and injection rates for these two fields:

	<u>Storage Capacity</u>	<u>Injection Rate</u>	<u>Withdrawal Rate</u>
Playa del Rey	2,880 MMcf	40.8 MMcf per day	204 MMcf per day
La Goleta	50,430 MMcf	108 MMcf per day	465 MMcf per day

4. A few years later the Pacific Lighting Corporation through its subsidiary (later known as Pacific Lighting Gas Supply Company) also acquired the East Whittier field which has a capacity of 1,825 MMcf, an injection rate of 50 MMcf per day, and a withdrawal rate of 50 MMcf per day.

5. The East Whittier field and the La Goleta field came under the jurisdiction of this Commission at the time the Pacific Lighting Gas Supply Company became a utility (Decision No. 48088, dated December 22, 1952).

4 - UNDERGROUND STORAGE

6. The Pacific Lighting Gas Supply Company in its Application No. 37325, dated September 13, 1955, asked for and was granted a certificate of public convenience and necessity to construct a storage reservoir at Montebello. This field, which is now being converted, will have an injection rate of 60 MMcf per day and a withdrawal capacity of 200 MMcf per day, and a storage capacity of 12,500 MMcf.

7 The Pacific Gas and Electric Company, by Decision No. 52315, dated December 5, 1955, was granted authority to enter into the necessary contracts and proceed with the work required to convert the Pleasant Creek field into an underground reservoir. This reservoir, when completed, will have a capacity of 3,250 MMcf and a delivery rate of 80 MMcf per day.

CHAPTER 5

IMPORTATION OF OUT-OF-STATE GAS

1. For about two years prior to the fall of 1945, the Southern California Gas Company and the Southern Counties Gas Company of California carried on an investigation of possible projects for importing out-of-state gas to California. In 1945, they entered into a contract with the El Paso Natural Gas Company for deliveries of out-of-state gas to the California border. The Southern California Companies jointly applied for and were granted a certificate of public convenience and necessity to construct, operate and maintain a 30-inch gas transmission line approximately 214 miles long, from a point near Blythe to Santa Fe Springs to connect with a line to be constructed by the El Paso Natural Gas Company to transport gas from the West Texas and New Mexico fields to the California-Arizona borderline. This line was completed by the fall of 1947, the first delivery being made on November 13. During the balance of that year 3,500,000 Mcf, equal to approximately nine-tenths of one per cent of the total gas used in the state was delivered.
2. Prior to the completion of the Blythe to Santa Fe Springs line, the Southern Companies applied to the Commission to sell 75 million cubic feet of gas daily during 1948, and 100 million cubic feet daily thereafter, for a period of about four years, to the Pacific Gas and Electric Company. This contract was authorized by Decision No. 40671 on August 26, 1947. The Southern Companies arranged to increase deliveries from out-of-state to 305 million cubic feet per day, starting January 1, 1949.
3. By June, 1948 the Southern Companies had applied for and received authorization to increase deliveries from 305 million cubic feet per day to 405 million cubic feet per day.
4. About the same time, the Pacific Gas and Electric Company filed an application with this Commission for a certificate of public convenience and necessity to build a transmission line approximately 506 miles long from Milpitas to a point on the California border near Topock, Arizona, and import 150 million cubic feet per day during the first year of operation, with an ultimate capacity of 400 million cubic feet per day. This certificate was granted by the Commission on January 1, 1949. First deliveries from this line commenced on December 26, 1950. Subsequently, both the

5 - IMPORTATION OF OUT-OF-STATE GAS

Pacific Gas and Electric Company and the Southern Companies applied for and were granted authority to construct additional facilities to bring additional quantities of gas into California. Additions to the Pacific Gas and Electric Company facilities were authorized by the Commission by the following decisions: Decision No. 47492, dated July 22, 1952; Decision No. 49101, dated September 15, 1953; and Decision No. 52436, dated January 4, 1956. By these decisions Pacific Gas and Electric Company was authorized to enlarge its facilities to deliver 875 MMcf per day.

5. The Southern Companies also were authorized to increase their pipeline capacities. These increases were granted by Decision No. 46789, dated February 26, 1952; Decision No. 48663, dated June 1, 1953; Decision No. 51742, dated July 26, 1955; and Decision No. 53121, dated May 26, 1956. Construction now authorized will deliver 880 MMcf per day to the Los Angeles area.

6. Letters of intent between El Paso Natural Gas Company and the California companies covering additional deliveries to the Pacific Gas and Electric Company of 150 MMcf per day and a like amount to the Southern California Companies were executed in January, 1956. If these additions are authorized, deliveries by Pacific Gas and Electric Company will be increased to 1,025 MMcf per day and by the Southern Companies to 1,030 MMcf per day

7. The out-of-state gas deliveries to the Southern Companies during the month of June, 1956 averaged 821,763 Mcf per day. The total for the month was 24,652,884 Mcf and for the year ended June 30, 1956 was 275,731,670 Mcf. Deliveries of out-of-state gas to the Pacific Gas and Electric Company averaged 604,308 Mcf per day and totaled 18,129,244 Mcf for the month of June, 1956. Pacific Gas and Electric Company received 257,050,658 Mcf from out of state for the year ended June 30, 1956. The total out-of-state gas deliveries for the year ended June 30, 1956 amounted to 532,782,328 Mcf, which represented 67.6% of the total purchases of natural gas by public utilities within the state.

CHAPTER 6

WORLD WAR II

1. Prior to the outbreak of World War II, the Commission and its staff were appointed to various committees of the State Council of Defense, as well as to several federal war agencies. The Commission took an active part in the investigation of ways and means of increasing supplies of gas for the war industries. The Commission, on its own motion, instituted Case No. 4619 to investigate whether utilities should change their rules or practices because of the war. By Decision No. 34848, Emergency Rule No. A-1 suspended or modified the rules governing new service connections and extensions.

2. Among other activities of the Commission and staff during this period, the following were the most significant:

- a. Assisted in the negotiations for the conversion of the Stanpac gas line to oil transportation. This line normally was used to transport gas from the Kettleman Hills area to the San Francisco Bay area, but due to the shortage of tankers the oil companies requested that the line be used to transport oil to the Bay Area refineries.
- b. Issued an order on April 20, 1943, which was an emergency supplement to General Order No. 96, allowing intervention of the OPA in rate increase hearings.
- c. Extended the period of refunds on advances by Decision No. 36528.
- d. Made a study of gas plant protection.
- e. Authorized the suspension of the fuel oil clause when the OPA raised the price of fuel oil.

CHAPTER 7

RATE ADJUSTMENTS

1. The following tabulation shows the rate changes for the year ending June 30, 1956 and the 19-year period ending June 30, 1956:

	<u>Changes in Basic Rates</u>		<u>Misc. Rate Changes*</u>	
	<u>Year Ended</u>	<u>19 Years Ended</u>	<u>Year Ended</u>	<u>19 Years Ended</u>
<u>Gas Utilities:</u>	<u>6/30/56</u>	<u>6/30/56#</u>	<u>6/30/56</u>	<u>6/30/56#</u>
Reductions	\$ 367,524	\$18,996,301	\$ 707,083	\$20,483,547
Increases	1,365,000	85,066,932	2,090,700	37,160,931
Net Increases	997,476	66,070,631	1,383,617	16,677,384

* Miscellaneous changes are due to fuel escalation clauses.

Based upon the level of business at the time the rate adjustments were made.

2. The policy of the Commission to use the "continuous investigation method" in making adjustments to gas rates resulted in the following rate reductions:

<u>Fiscal Year</u>	<u>Amount</u>
1937-38	\$3,767,895
1938-39	1,835,866
1939-40	1,267,175
1940-41	4,033,023

3. Reductions in industrial rates due to the change in price of fuel oil were as follows:

<u>Fiscal Year</u>	<u>Amount</u>
1939-40	\$1,238,366
1940-41	913,156

In 1943 there were decreases in the rates of the Pacific Gas and Electric Company resulting from the Commission's investigation in Case Nos. 4621 and 4622 (Decision No. 36082, dated December 29, 1942). This decision authorized the Pacific Gas and Electric Company to divide its service area into six general service zones based upon the density (number of customers per mile of distribution main) in the various cities and in built-up and unincorporated areas. The areas with the highest density were given the lowest zone number and the lowest rates. Each succeeding zone was given a higher rate, with Zone 6 having the highest.

7 - RATE ADJUSTMENTS

4. In 1945 there was a reduction of \$1,184,572. The major part of this (\$750,000) was the result of the Commission's investigation in Case No. 4716 of the gas rates charged by Southern Counties Gas Company. The decision in this case (Decision No. 38786, dated March 26, 1946) authorized an automatic rate adjustment plan whereby every three months results of earning studies would be made and the rates adjusted by applying a percentage discount to the filed tariffs based upon the rate of return indicated by the study.

5. During 1946 there was a reduction of \$3,730,911, of which \$3,500,000 was a reduction in the Pacific Gas and Electric gas rates ordered by Decision No. 38638, dated January 23, 1946, in Case No. 4749.

6. Starting in 1946 the fluctuation in the price of fuel oil caused changes in the industrial rates, as shown in the tabulation below:

<u>Year</u>	Increase OR Decrease	<u>Amount</u>
1947	Increase	\$13,106,163
1948	Increase	8,520,367
1949	Decrease	3,748,072
1950	Decrease	11,607,760
1951	Increase	9,625,334

7. During 1947, 1948, and 1949 there were minor adjustments to the general service schedules, mainly due to reclassification of customers into zones having lower rates. In 1949 there was an increase of \$641,462 due mainly to Southern Counties' rate adjustment plan. In 1950 the Commission authorized \$10,978,875 in increases; approximately \$4,000,000 was granted to Pacific Gas and Electric Company by Decision No. 43368 and \$5,635,000 to Southern California as an interim increase.

8. The price of liquefied petroleum also increased during the period 1946 to 1950. Increases were granted to the Russian River Gas Company, the Southern Counties Gas Company (which served liquefied petroleum gas to Buellton, Solvang, Las Flores and Malibu), Garberville Gas Corporation, California-Pacific Utilities Corporation (which served liquefied petroleum gas in Yreka and Dunsmuir), Southwest Gas Corporation (which served portions of San Bernardino County, Barstow, Victorville), and the Big Bear Lake Gas Company.

7 - RATE ADJUSTMENTS

9. Because of the increased cost of operation during the period of 1951 to 1955, additional gas rate increases have been granted to the Pacific Gas and Electric Company and to Southern California Gas Company and Southern Counties Gas Company of California. Briefly, the increases have been as follows:

- a. The Pacific Gas and Electric Company was granted \$7,000,000 by Decision No. 45296, dated January 23, 1951 as an interim increase, and an additional \$9,000,000 by Decision No. 46268 and \$1,500,000 by Decision No. 46501 in 1952.
- b. Coast Counties Gas and Electric Company, now a part of Pacific Gas and Electric Company, was granted a \$950,000 increase also in 1952, Decision No. 45926.
- c. The Southern California Gas Company was granted an interim increase in March, 1952 and a final increase in December, 1952. The interim increase allowed was \$4,910,000. The final increase was \$2,311,000. These increases were granted under Application No. 32675, Decisions Nos. 46878 and 47990, respectively.
- d. Southern Counties Gas Company of California was granted an increase of \$2,315,000 in Application No. 33341, Decision No. 48833, dated July 14, 1953, and an additional increase of \$3,130,000 by Application No. 35742, Decisions Nos. 50902 and 51156.

The Offset Rate Increases

10. The El Paso Natural Gas Company, which supplies out-of-state gas to the California companies, applied to the Federal Power Commission in June, 1952 for a rate increase under Federal Power Commission Docket No. G-2018. Hearings were not held on this application within the prescribed time limit and, hence, the rates became effective on January 1, 1953. The increases were collected by El Paso under bond and were subject to refund when final rates are set by the Federal Power Commission. The California Commission also granted increases to the California companies upon application, also with a proviso that they would be subject to refund after action by the Federal Power Commission. The annual increases granted by this Commission in Applications Nos. 33699 and 33700 to the Southern California Gas Company and the Southern Counties Gas Company amounted to approximately \$9,000,000. The amount granted Coast Counties Gas and Electric Company by Decision No. 49560, dated January 12, 1954 was \$800,000. Pacific Gas and Electric Company was granted \$7,073,000 by Decision No. 50744, dated November 4, 1954.

7 - RATE ADJUSTMENTS

11. The Commission took an active part in Docket No. G-2018, sending representatives to the hearings before the Federal Power Commission. On July 20, 1956, the Federal Power Commission issued its decision authorizing \$3,433,327 in refunds to El Paso Natural Gas Company customers. Of this amount, \$1,277,509 was refunded to the Southern Companies and \$1,231,843 to the Pacific Gas and Electric Company.

12. El Paso applied for a second rate increase in October, 1954, Docket No. G-4769, which was granted effective April 15, 1955, and again this increase is being collected under bond. Again the California companies applied for and were granted increases subject to refund. Hearings on this docket are still pending before the Federal Power Commission.

CHAPTER 8

SAFETY AND SERVICE

1. The standards of safety and service of the various utilities of the state have been of major concern to the Commission for many years. Testing of gas meters throughout the state was inaugurated in 1939. This program raised the standards of service and was the basis for the formulation of standards of meter practices. General Order No. 58-A requires gas meters to be tested every 10 years and, if found to be inaccurate, to be readjusted to an accuracy within prescribed limits. Originally meters were to be tested once every seven years, but during World War II the Commission, from evidence presented in Case No. 3181, authorized that meters could remain in service for 10 years before removal and overhaul. The extension in time was granted by Decision No. 35470, dated June 9, 1942.

2. The heating value and quality of the natural gas served also has been of concern to the Commission. Because of the increased number of sources of natural gas and the range in the heating value of the gas served by the various utilities, extensive work has been done to develop standards for the heating value and quality of the gas served. These studies led to the filing of tariff schedules providing for the automatic adjustment of rates charged customers due to changes in the heating value. All gas utilities are required to file monthly reports showing the heating value of the gas delivered to each district or area of each company.

3. In 1945 the City of Fresno filed a complaint (Case No. 4723) in which the city contended that the calorimetry equipment used by the Pacific Gas and Electric Company failed to measure accurately the heating value of the gas served in that city. The Commission instituted an investigation (Case No. 4720) into the standards of practice, design operation, maintenance and inspection of calorimeters. Work on this investigation was carried on for many years by a technical committee composed of representatives from the utilities and other interested parties and a member of the staff, who acted as chairman. The committee issued numerous interim reports and a final report in 1954. The final report was the basis for a public hearing held in 1955. The Commission in its decision in this case issued General Order No. 58-B on December 20, 1955. This general order established uniform standards and practices for the testing, recording and operating of calorimeters.

8 - SAFETY AND SERVICE

4. General Order No. 94, prescribing the uniform procedure for the design, operation, maintenance and inspection of gas holders and liquefied petroleum vessels was authorized by Decision No. 32699 on January 2, 1940 as a result of an investigation by the Commission in Case No. 4380. Subsequently, in 1952 the order was revised to cover underground pipe-type gas holders. This order requires, among other things, that in the interest of safety and protection of the public and employees of the utility, all gas holders and liquefied petroleum vessels shall be inspected periodically by qualified persons, not employed by any utility. Complete and thorough internal and external inspection of each holder or vessel is to be made at either 10- or 20-year intervals depending upon the type of holder or vessel. These inspections are to be made by a qualified, outside inspector who must file a report of his findings with the Commission. A complete file of these 10- and 20-year inspection reports is maintained by the Commission. Routine, daily, weekly, monthly, quarterly and annual general inspections of holders and vessels are also required to be made by the utility employees. Inspection for compliance with this general order has been part of the responsibility of the staff.

5. The Commission, on its own motion, instituted Case No. 4626 to establish rules governing the filing of rate schedules by gas, electric, telephone, telegraph, water, and heat utilities. This investigation resulted in the consolidation and revision of a number of old orders into a new order, General Order No. 96, which was authorized on September 29, 1942.

Safety Unit

6. In recognition of the vital importance of safety, a safety unit was established by the Commission within the Gas Section in 1953. This unit has carried out investigations into the construction, operations, and maintenance practices of the utilities to determine whether these procedures provide adequately for the safety of the utility employees and the general public. This unit is also closely following the work of the American Standards Association in the preparation of a safety code for the construction of gas transmission and distribution piping systems. It also has reviewed the safety standards established by other regulatory commissions throughout the United States.

Gas Service Investigations

7. In response to the request contained in resolutions of the city councils of Roseville and Rocklin and to petitions received from some 3,000 individual customers in those areas during 1954, the staff made a comprehensive investigation of the service conditions there. During the previous year the Pacific Gas and Electric Company had changed the source of supply to that area. The new source of gas was of a lower heating value and required that the customers' appliances be adjusted to efficiently use the lower Btu gas. The investigation revealed the need for re-examination of the adjustments previously made. A program of re-examination and readjustment was presented by the utility at the staff's suggestion. This program was carried out and the service conditions improved.

8. In 1955 a group of customers of the Crescent City Gas Company complained about the quality of and the rates for liquefied petroleum gas served in Crescent City. Investigation revealed that the heating value of the gas served varied far beyond the allowable limits and was not in accordance with the provisions of the tariffs. At the recommendation of the staff the utility is standardizing its operations so as to deliver a uniform heating value of gas, and has refunded approximately \$8,600 to its customers because of the overcharges resulting from billing for gas with a higher heating value than that which was actually served.

CHAPTER 9

MERGERS

1. With the increased use of natural gas and the need for larger and longer transmission mains, many of the smaller utilities merged with the larger ones having more adequate supplies and transmission facilities.

Among the more important mergers were:

- a. The Los Angeles Gas and Electric Corporation with the Southern California Gas Company, authorized by Decision No. 29667 on April 12, 1937.
- b. The San Joaquin Light and Power Corporation with the Pacific Gas and Electric Company, authorized by Decision No. 31354, dated October 13, 1938.
- c. The Santa Maria Gas Company to merge with the Southern Counties Gas Company, authorized by Decision No. 34650 on October 7, 1941.
- d. The Pacific Gas and Electric Company to acquire by merger with Pacific Public Service Company, the stock of Coast Counties Gas and Electric Company, authorized by Decision No. 50366 on August 10, 1954.

2. One other merger was denied. In Application No. 23767 the Southern California Gas Company, Southern Counties Gas Company and Santa Maria Gas Company applied for the right to merge. By Decision No. 33644, dated October 29, 1940, the application was denied on the grounds that the proposed merger was not in the public interest.

3. There were a number of mergers of small utilities with larger ones. Perhaps the more important of these were the mergers of the Desert Gas Company, the Blythe Gas Company and the Commercial Land Company with the Southern California Gas Company; also, the Thomas E. Cooper Company merged with the Pacific Gas and Electric Company.

CHAPTER 10

PURCHASE AND SALE OF FACILITIES

1. Certain facilities owned and operated by one utility were either sold or transferred to other utilities or municipally operated gas systems. Among the more important of these were:

- a. The sale of the butane-air system owned by Coast Counties Gas and Electric Company in Arcata to the Pacific Gas and Electric Company which was authorized to construct and operate a natural gas pipeline to supply natural gas instead of butane-air. The sale was authorized by Decision Nos. 37550 and 37551 on December 15, 1944.
- b. The Southern California Edison Company authorized to sell its 16-inch pipeline utilized to supply natural gas to the Edison's Long Beach steam plant to Southern Counties Gas Company. This sale was authorized by Decision No. 41506, dated April 27, 1948.
- c. Coast Counties Gas and Electric Company authorized to sell its gas system in the Imperial Valley serving El Centro, Brawley, and Calexico, to the Southern California Gas Company. This sale was authorized by Decision No. 41069 dated December 22, 1947.
- d. Southern Counties Gas Company was authorized to transfer its butane plants and system at Buellton and Solvang in Santa Barbara County to the Suburban Utilities. This transfer was authorized by Decision No. 44279 on June 7, 1950.

CHAPTER 11

EXTENSIONS

1. There have been a number of extensions of service into new areas and a number of small gas fields in central and northern California have been discovered. The more important certificates of public convenience and necessity granted by the Commission to serve the new areas and tie in the new fields are as follows:

- a. After the discovery of the Rio Vista Gas Field in June, 1936, the Pacific Gas and Electric Company was authorized to construct a high-pressure transmission main from this field to Dixon. The line was authorized by Decision No. 29873, dated June 21, 1937.
- b. The San Joaquin Light & Power Company was authorized to construct a high-pressure main to furnish gas to the Cities of Livingston and Atwater. This line was authorized by Decision No. 30755, dated April 11, 1938.
- c. Pacific Gas and Electric Company was authorized by Decision No. 31452, dated November 10, 1938, to construct a natural gas transmission line from Marysville-Buttes Field to Yuba City and Colusa and furnish natural gas service.
- d. In 1940, the Pacific Gas and Electric Company was authorized to supply natural gas to the City of Isleton from the Rio Vista field (Decision No. 33571) and to Eureka from the Tompkins Hill field near Fortuna (Decision No. 33691).
- e. Southern California Gas Company was authorized by Decision No. 40880 on November 4, 1947 to serve Palm Springs and Coachella.
- f. Southern Counties Gas Company, on February 1, 1949, was authorized by Decision No. 42475 to construct and operate a gas transmission line from the so-called Texas pipeline to Rainbow, near the San Diego County line. This line was to augment the supplies of natural gas to San Diego Gas & Electric Company. A contract for the sale of additional gas to San Diego was also authorized by this decision.
- g. Pacific Gas and Electric Company, by Decision No. 43082, dated June 28, 1949, was authorized to maintain gas facilities and supply natural gas to the City of Kerman in Fresno County.

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- h. The Southern California Gas Company, by Decision No. 46702, dated January 1, 1952, was authorized to serve Antelope Valley and to execute a gas exchange agreement with the Pacific Gas and Electric Company to furnish natural gas from the Milpitas-Topock line near Mojave.
- i. During 1953 and 1954, the Pacific Gas and Electric Company was granted authority to serve the following cities and adjacent territory: Rockland, Loomis, Linden, Orland, Corning and Folsom. *Rockland*
- j. The Palos Verdes Gas Company was granted authority to serve the Town of Ripley with liquefied petroleum gas on March 30, 1954. Decision No. 49861.

CHAPTER 12

NEW UTILITIES

1. During the last 18 years a number of utilities have come into existence. The largest of these was the Pacific Lighting Gas Supply Company. This company became a public utility on January 1, 1953 (Decision No. 48088, dated December 22, 1952). It acquired the facilities of a subsidiary of the Pacific Lighting Corporation, consisting of the La Goleta and East Whittier underground storage projects, pipelines and other related facilities. It sells natural gas to the Southern California Gas Company and the Southern Counties Gas Company.

2. Other utilities granted certificates of public convenience and necessity to serve liquefied petroleum gas are as follows:

- a. Garberville Gas Company to serve the Town of Garberville, Decision No. 31512, dated December 5, 1938.
- b. Big Bear Lake Company, to serve Big Bear Lake, Decision No. 33839, dated January 28, 1941.
- c. Russian River Gas Company to serve Guerneville and adjacent territory in Sonoma County, Decision No. 38332, dated October 30, 1945.
- d. Crescent City Gas Company to serve Crescent City, Decision No. 40803, dated October 10, 1947.
- e. Cloverdale Gas Company to serve the Town of Cloverdale, Decision No. 49259, dated October 27, 1953.
- f. The Desert Gas Company to serve Twentynine Palms and vicinity, Decision No. 49642, dated February 9, 1954.
- g. The Kenwood Gas Company to serve the Town of Kenwood, Decision No. 52251, dated November 22, 1955.

CHAPTER 13

SPECIAL STUDIES AND INVESTIGATIONS

1. Throughout the years, results of operations studies have been prepared by the Commission staff. These studies have served as a guide for the Commission in the adjustment of rates.
2. Studies of the use per customer during warm and cold years has led to the study of temperature for the purpose of adjusting sales to "average" or "normal" conditions. One of the major differences between the staff and the utility in a major rate case has been in the method used to adjust sales to "normal" conditions. A temperature adjustment committee, composed of representatives from the utilities and other interested parties and a Commission staff member, acting as chairman, has been working on this problem. It is hoped that a uniform method of adjustment of sales to reflect "normal" temperature conditions will be developed, thereby simplifying rate proceedings.
3. The interdependency of natural gas utilities on the supplies available during times of peak demand or emergencies have required the development of standard procedures for the curtailment of interruptible customers. Studies made by the Commission staff and the companies have resulted in the development of a fair and equitable program of curtailment of interruptible industrial customers by each utility during times of peak demand.
4. Throughout the years, interest in cost of service studies has been increasing. Much interest has been shown by the California Manufacturers Association, the City of Los Angeles, and others in the use of these studies to assist the Commission in fixing rates for the various classes of service. The Commission, too, has shown interest in these studies, especially those presented before the Federal Power Commission by the El Paso Natural Gas Company, the Federal Power Commission staff, and other interested parties, in proceedings covering increases in cost of out-of-state gas to the California companies. Because of the controversial nature of the subject and the various points of view of the interested parties, a committee of Commission staff members has been formed. The purpose of this committee is to study the various methods of allocating costs to classes of service and to analyze the effect of each method.

CHAPTER 14

DEPRECIATION EXPENSE

1. Depreciation methods and practices of California gas utilities have gone through an evolution and transition during the last 18 years. In 1938, most gas utilities used the sinking fund total life method of determining depreciation accruals. Frequently confronted with over- and under-accrued depreciation reserves, both the Commission staff and the companies were engaged from time to time in theoretical depreciation reserve requirement studies and determinations of reasonable future accruals.
2. During the war, capital additions were necessarily held down and retirements were abnormally low, resulting in a scarcity of new plant facilities and a need to operate old facilities, even though they were uneconomical. The ratio of depreciation reserve to depreciable capital increased during this period. In postwar years, however, because of heavy retirements of obsolete plant and the rapid increase in amount of new plant, this ratio decreased to former levels. Large postwar replacements and additions to plant tended to decrease the average age of plant in service and resulted in lower reserve ratios. Studies of depreciation practices indicated that, in many cases, the service lives of plant had been underestimated; and as experience with these plant items increased, it appeared appropriate to lengthen estimated service lives and in turn reduce the annual provision for depreciation.
3. At the end of the war much thought was being given by both the Commission and utilities to the fundamental theories of depreciation. For many years depreciation was usually determined by California utilities by the sinking fund method, with a sinking fund interest rate approximating the rate of return. Under the sinking fund method, heavier accruals occur as the plant ages, while under the straight-line method accruals are spread equally over the life of plant, more equitably apportioning consumption of plant and avoiding higher depreciation charges when plant is old and likely to be relatively inefficient. Another disadvantage of the sinking fund method is that if the estimate of service lives or salvage

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later proves to be inaccurate, the compound interest factor will increase the discrepancy in the depreciation reserve resulting from the inaccuracy. The higher the interest rate, the greater the discrepancy will be. The practical result of the usage of this method was frequent theoretical reserve requirement studies and applications to the Commission for transfers between depreciation reserve and surplus.

4. The year 1950-1951 saw consideration given to the remaining life method of computing depreciation accruals. It was recognized that the basic problem in determining depreciation rates and depreciation accruals is that of charging the original cost of fixed capital, less estimated net salvage, to expense over the useful life of the property by means of an equitable plan. Analysis of experience under the total life plan indicated that the total life concept failed to accomplish solution of this basic problem because of deficits or excesses in the reserve developed from time to time where estimates in total life proved inaccurate. The introduction of the remaining life principle for determination of depreciation accruals provided an orderly means of overcoming this difficulty.

5. Several large California utilities who agreed to adopt the remaining life method had either completed or were in the process of carrying out the necessary studies to place it in effect. Two gas companies started using this method during the fiscal year 1950-1951, and other utilities agreed in principle and were in the process of carrying out studies to place it in effect.

6. The remaining life method gained increasing acceptance in the ensuing years, as the following table shows, presently including all major utilities:

<u>Year</u>	<u>Number of Gas Utilities Using Remaining Life Method</u>
1950-1951	3
1951-1952	5
1952-1953	6
1953-1954	6
1954-1955	6

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7. The review of annual depreciation rate and accrual proposals submitted by the major utilities using the remaining life method, together with the review of periodic reports from smaller utilities, reduced the amount of rate proceeding time spent on depreciation questions and eliminated much controversy which formerly arose in such proceedings.

CHAPTER 15

RATE BASE

1. During the period 1938 through 1955 the Commission decided a number of policy matters affecting the rate base of electric, gas, telephone, and water utilities. Individual decisions by the Commission in each case have generally been interpreted as applicable to all classes of utility. A brief partial list of important policy decisions of the Commission is listed in the following paragraphs.

Depreciated Rate Base

2. The Commission, up to 1951, had generally used the undepreciated rate base of utilities using the sinking fund depreciation method, although many decisions prior to that time had also shown results using the depreciated rate base in connection with the sinking fund method.

3. The Pacific Gas and Electric Company in Application No. 31466 requested the Commission's policy as to the exclusive use of a depreciated or an undepreciated rate base in the future. The Commission in Decision No. 46268, dated October 2, 1951 (51 CPUC 130, 137) gave its reasons for adopting the depreciated rate base.

Contributions

4. Southern Counties Gas Company of California in a rate increase application included the capital represented by contributions at zero interest rate in calculating its proposed cost of money rather than deduct contributions in arriving at a rate base. The Commission in Decision No. 46680 dated January 22, 1952 (51 CPUC 419, 425) stated:

"The results obtained by that method of treatment would not differ from the customary Commission procedure of deducting the amount from rate base and not reflecting the zero interest cost of that money in computing the rate of return."

Advances

5. The Del Este Water Company in Case No. 5413 contended that only advances of presently connected customers should be deducted from the rate base. The Commission in Decision No. 48485, dated April 14, 1953 (52 CPUC 479, 482) held that all advances should be deducted since the company does not have to pay interest on the unrefunded amounts.

Affiliated Interests

6. The Commission in Decision No. 49074 of September 15, 1953 (52 CPUC 741) denied a rehearing of a dismissal of San Gabriel Valley Water Company's rate increase application because of applicant's failure to make a full disclosure of transactions with affiliates.

"The undisputed facts of this case clearly show that Vesco and the president of applicant are the alter ego of each other and we so hereby find . . . The fact that applicant, as a corporation, owns no stock in Vesco and Vesco owns no stock of applicant is wholly immaterial . . . The law does not permit an official of a corporation to profit by dealings he has with such corporation . . . A man may not, by the device of dividing up his business into corporate segments or otherwise, circumvent the law which applies to him as an individual where it is shown that such procedure is under his domination and control."

Profits of Affiliates

7. The Commission in Decision No. 50258 dated July 6, 1954 (53 CPUC 275, 300) on the rate increase application of The Pacific Telephone and Telegraph Company reaffirmed its long standing principle that a manufacturing and construction company, such as Western Electric Company, should not be permitted a higher rate of return on its sales to a utility than that granted the regulated utility when both are controlled by the same interests. Earlier decisions affirming and reaffirming this principle regarding Western Electric prices were Decision No. 21766, dated November 7, 1929 (33 CRC 737); Decision No. 41416, dated April 6, 1948 (48 CPUC 1); Decision No. 42530, dated February 23, 1949 (48 CPUC 487, 491); Decision No. 43145, dated July 26, 1949 (48 CPUC 823, 826).

Original Cost of Lands

8. The Commission in Decision No. 41416 dated April 6, 1948 (48 CPUC 1), adopted the view of The Pacific Telephone and Telegraph Company that the use of the book or original cost of lands with the book or original cost for the balance of plant in service was more consistent than using the market value of lands in rate base determination where the original cost rate base was used.