

**ORIGINAL**Decision No. 49127

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation upon the Commission's  
 own motion to ascertain the present  
 and potential demands for and avail-  
 ability of gas in California and the  
 need for and propriety of emergency  
 modification of current rules or  
 practices to facilitate the supplying  
 of gas service.

Case No. 5272

Appearances and list of witnesses  
 are set forth in Appendix "A"

O P I N I O NNature of Proceeding

This is an investigation, initiated March 13, 1951, on the Commission's own motion the objective of which, as stated in the order, is:

- "1. To assemble and consolidate information regarding the ability of the gas utilities to meet the increasing demands occasioned by the national defense and war needs.
- "2. To establish uniform procedures, whenever it is deemed necessary, for the several utilities relative to rules and regulations for gas service.
- "3. To obtain estimates of requirements for gas service from present and prospective gas customers throughout the state."

Seven days of public hearing were held on this investigation during the period July 18, 1951 to May 14, 1953 before Commissioner Harold P. Huls and Examiner M. W. Edwards. Two days of hearing were held in San Francisco and five days in Los Angeles. Representatives of the public utilities, industry and public organizations in California attended these hearings. Committees composed of utility engineers and officials gathered data and

presented several exhibits. A customer's representative furnished statistical information and requested data on pressure maintenance. A witness for the Natural Gas Producers Association of California presented testimony regarding pressure maintenance in oil fields. The results of an industry survey on the use of natural gas was presented by a representative of the California Manufacturers Association. Information as to requirements of the armed forces and available gas were furnished by utility and government representatives. The record contains a total of 28 exhibits and 597 pages of transcript.

#### Interim Opinion and Order

After the first two days of public hearing the Commission on December 11, 1951 issued an interim opinion and order in this investigation (51 Cal.P.U.C. 309) summarizing the outlook at that time in the manner following:

"Up through 1952 the in-state supply of gas appears greater than the firm requirements, but in 1953 California must look to out-of-state sources for help in meeting its firm load. This conclusion results from the assumption that the firm defense and military load will not expand faster than estimated by the utilities. California is dependent on out-of-state gas to the extent of an estimated 36.9% in 1951 which will expand to 47.8% in 1953. By 1953 curtailment of interruptible loads is estimated to equal nearly one-sixth of the total supply.

"It must be realized that a large portion of the extremely important military and civilian defense load is served through the interruptible classification of service. The interruptible customers are required to have standby fuel facilities in order to be able to switch over to this source of heat supply during the peak period when the firm customers use all of the available gas, or during other times when the supply of gas is low. During World War II it was found that fuel oil was in short supply and consequently a large part of the interruptible class of business was forced to transfer to the firm schedules. If such a situation should reoccur during the next year or two it is probable that curtailment of the firm customers would result. In addition new connections could not be permitted except for essential loads.

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."

As conditions proved to be, the years 1952 and 1953 (to September) did not witness a recurrence of the short fuel oil supply situation witnessed during World War II and it was not necessary to ration natural gas or curtail any firm gas customers other than the usual curtailment of the interruptible customers during the colder days of these years. Additional out-of-state gas was obtained and it was not necessary to limit new connections other than in the manner provided by the regular rules and regulations of the utilities.

#### Current Outlook

Currently the outlook is reasonably favorable provided additional storage capacity is made available. The Federal Power Commission on June 25, 1953 granted certificates of public convenience and necessity<sup>1/</sup> for an additional 303,469 Mcf of natural gas per day to be purchased from El Paso Natural Gas Company at the Arizona-California boundary by three major gas companies in California.

This Commission also has issued certificates of public convenience and necessity for construction of the necessary parallel pipelines in California to transport this additional gas by Decision No. 48663 on Application No. 34049 of Southern California Gas Company and Southern Counties Gas Company of California, dated June 1, 1953 and by Decision No. 49101 on Application No. 29548 (Second Supplement) of Pacific Gas and Electric Company, dated September 15, 1953.

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<sup>1/</sup> Under Docket No. G-2102 to Pacific Gas and Electric Company and under Docket No. G-2104 to Southern California Gas Company and Southern Counties Gas Company of California.

This added out-of-state gas is to be supplied in two stages, one third of the proposed total daily volume is to begin on January 1, 1954 and the remaining two thirds on November 1, 1954. The added supply of gas is taken at a high load factor (91 per cent or higher) and, while it is very effective in augmenting the average day supply in the state, its effectiveness to augment the winter peak day supply can be improved by development of seasonal storage to be filled during the off-peak periods of the summer season. The respondents indicated that negotiations are under way for development of a large underground storage reservoir but up to the date of the last hearing on this matter the reservoir had not been provided.

It is possible that the cessation of hostilities in Korea in August, 1953 which had been in progress since June, 1950, will result in a reduction in the sharp rate of gas load growth in the war and defense industry in California. However, even with a lower rate of load growth it is not anticipated that all needs can be met on the colder days without some curtailment of the interruptible class of customers. Roughly, one half the total annual requirements in the state are for firm service and one half for interruptible service. In 1952 the curtailment was 83,777,000 Mcf or 22 per cent of the total potential interruptible requirements of 381,116,000 Mcf in the state. For 1953 the curtailment is estimated at 23 per cent. As the additional out-of-state gas becomes available in 1954 the estimated curtailment drops to 16 per cent. For 1955 and 1956 the curtailment ratios are estimated to increase to 21 per cent and 31 per cent, respectively.

The relationship of supply to average and peak-day requirements as set forth in Exhibit No. 25 may be summarized in the manner following:

Gas Supply and Requirements - State of California  
1952 Actual, 1953-1956 Estimated - Million Cubic Feet Per Day

	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>
1. Average Day					
California Services					
Dry Gas	369.9	440.8	360.3	349.7	368.8
Oil Well	639.5	600.2	548.8	505.9	440.5
Other	48.6	39.0	42.9	44.0	45.9
Out-of-State Sources	813.3	980.0	1,315.4	1,349.9	1,357.5
Total Supply	1,871.3	2,060.0	2,267.4	2,249.5	2,212.7
Requirements					
Firm	1,016.6	1,096.1	1,164.5	1,229.1	1,283.8
Interruptible	1,041.3	1,206.9	1,269.0	1,254.1	1,302.5
Underground Storage Injection	42.3	34.7	35.5	35.5	35.5
Total Requirements	2,100.2	2,337.7	2,469.0	2,518.7	2,621.8
Curtailement					
Firm	--	--	--	0.4	2.2
Interruptible	228.9	277.7	201.6	268.8	406.9
2. Peak Day - Winter Season					
California Sources					
Dry Gas	666.6	698.6	659.4	616.2	577.1
Oil Well	661.2	292.2	367.8	408.4	416.5
Other	423.2	743.2	784.9	805.4	845.3
Out-of-State Sources	889.6	1,421.2	1,421.2	1,421.2	1,421.2
Total Supply	2,640.6	3,155.2	3,233.3	3,251.2	3,260.1
Requirements					
Firm	2,024.2	3,126.1	3,315.3	3,497.5	3,669.3
Interruptible	1,159.8	1,050.0	1,065.9	1,077.1	1,165.6
Underground Injection	--	--	--	--	--
Total Requirements	3,184.0	4,176.1	4,381.2	4,574.6	4,834.9
Curtailement					
Firm	--	9.6	122.2	286.2	449.7
Interruptible	543.4	1,011.3	1,025.7	1,037.2	1,125.1

In the above tabulation the interruptible requirements shown are potential requirements before curtailment. On peak days in the wintertime no gas would be injected into underground storage but would be withdrawn and added to the supply. For 1952-1953 the

withdrawal from underground storage was 365.4 million cubic feet on the peak day and for the peak days for the ensuing four years is estimated to range between 524.1 and 589.5 million cubic feet. The fact that the above table shows practically no firm deficiency on an average day but sizable firm deficiency on a peak day (starting in 1955) points to the need for development of additional peak-day capacity during the next 12 to 15 months.

Commission Responsibility

The Legislature has charged this Commission in the provisions of the Public Utilities Code<sup>2/</sup> with the duty of requiring utilities under its jurisdiction to:

"...furnish and maintain such adequate, efficient, just and reasonable service, instrumentalities, equipment, and facilities as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public."

In the same section the Legislature also has required that:

"All charges demanded or received by any public utility, or by any two or more public utilities, for any product or commodity furnished or to be furnished or any service rendered or to be rendered shall be just and reasonable."

As a consequence of these provisions, the Commission and the utilities subject to its jurisdiction are confronted with the constant duty of providing maximum adequacy and reliability of service, consistent with a minimum reasonable cost. Compliance with these specifications has required continuous engineering economic studies and development of compromises between engineering perfection and economic necessity.

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<sup>2/</sup> Section 451

Gas Supply Agencies

The principal utilities in the state subject to Commission control and responsible for furnishing adequate gas service at reasonable rates are:

1. Pacific Gas and Electric Company
2. Southern California Gas Company
3. Southern Counties Gas Company of California
4. San Diego Gas & Electric Company
5. Coast Counties Gas and Electric Company
6. Pacific Lighting Gas Supply Company

Generally speaking, these utilities do not produce gas but purchase it from oil companies, producers and others, then transport and distribute it to customers within the more populous areas of the state. The coverage of the state is not as great as for electric service because of the higher unit cost to extend gas mains per customer. For certain rural and mountainous areas where the customers are sparsely settled the capital cost would be so great as to make natural gas more expensive than other types of fuel or energy such as fuel oil, butane, wood or electricity.

Gas Sources

The producers obtain dry gas from several fields in the state of which the Rio Vista gas field in northern California is the largest, and obtain oil-well gas in conjunction with the production of crude oil from the many oil fields in the state. Exhibits Nos. 26 and 27 list a total of 135 separate oil and gas fields in the San Joaquin Valley, Los Angeles Basin and coastal areas of southern and central California. In addition, there are several fields in northern California. The out-of-state gas is produced from fields located in the Permian Basin area in southeastern New Mexico and west Texas, and the San Juan Basin area of northwestern New Mexico, southwestern Colorado, and southeastern Utah. The out-of-state gas is procured, transmitted and delivered by the El Paso Natural Gas Company to the state's eastern boundary by means of high pressure transmission lines.

The producers in California are not subject to regulation by the Commission and the utilities must depend upon contracts or other arrangements for obtaining the necessary local supply of gas. These producers can withhold or use the gas for other purposes than to supply the utilities. This fact is in part responsible for the decreasing availability of local gas. Increasing amounts of gas are being used for pressure maintenance in connection with oil production and recovery of oil by secondary methods in the state.

#### Pressure Maintenance

The rate of production of oil-well gas is tied to the rate of oil production and reflects the fact that the rate of oil production in the state is not increasing sharply but is tending to level off from year to year. Moreover, the increasing withdrawals of gas for pressure maintenance result in a forecast of declining supply of oil-well gas in the future. The proven gas reserves in the state are declining. In view of steadily increasing demands for petroleum products and decreasing rate of discovering of new oil fields an adverse petroleum situation of supply and demand in the not-far-distant future is in prospect. Operators are turning to secondary recovery methods to extract the maximum of crude oil. One principal secondary recovery method is to inject gas into underground formations for the purpose of keeping the pressure within the natural reservoir as close as practicable to the prevailing reservoir pressure.

By maintaining gas pressure in the oil producing zone the oil is saturated with gas, which is possible at high pressure. Its viscosity is materially lower, giving the oil greater mobility in flowing through the sand to the well bore and increasing the amount of the original oil that may be recovered. With a natural depletion type of operation as much as 85 per cent of the original oil in



place could be left in the ground; however, with pressure maintenance the yield is from 20 to 100 per cent more.

A customer's representative was concerned over the fact that gas withheld from the utilities for repressuring or maintenance of pressure may represent a waste or a loss of supply and questioned the advisability of such operation.

The witness for the Natural Gas Producers' Association of California testified that all injected gas can be recovered and that, finally, high pressure gas reserves in oil-depleted reservoirs will be available for future use. In his opinion the only loss would be about 4 per cent of the gas compressed which would be used for compressor fuel. Furthermore, he testified that the present practices of operators in California would yield the greatest amount of fuel (gas, oil, gasolines and other types) and are in the public interest.

From the testimony in this record it appears that practically all of the gas injected will be recovered eventually and ultimately redound to the benefit of California customers.

#### Utility Committees

The problem of preparing statistics of natural gas supply and requirements was handled by members of a working committee composed of representatives of various utilities in the state under the supervision of a general committee. The membership of these committees is set forth in Appendix "A" herein. Members of this committee prepared a very complete report which was submitted by Messrs. J. S. Moulton and Grove Lawrence as Exhibit No. 3 (including Exhibits Nos. 3-A and 3-B) entitled "Tables Showing Availability of, and Demand for, Gas in California, Years 1949-1953, Winter Seasons 1948-49 through 1953-54, Construction Programs." On June 27, 1952 the committees submitted Exhibit No. 17 to replace Exhibit No. 3.

with later estimates. On May 14, 1953 it submitted Exhibit No. 25 to bring the data in Exhibit No. 17 up to date and project the availability and demands for gas in California through the winter season 1956-1957. The Commission acknowledges and appreciates the efforts of these committees and their individual members.

Industrial Gas Survey

The California Manufacturers Association presented the results of a survey of natural gas use by manufacturers in California covering the actual year 1950 and estimates for the years 1951-1954 as Exhibit No. 11 in this proceeding. The survey was based on questionnaires, answers to which were received from 725 plants. The results for the state as a whole were:

Estimated Increase in Future Gas Requirements Compared to 1950

<u>Year</u>	<u>Weighted Average Increase</u>	
	<u>Firm Gas</u>	<u>Interruptible Gas</u>
1951	12.9%	8.7%
1952	20.5	13.2
1953	26.4	15.0
1954	29.5	17.3

The Association's representative also submitted Exhibit No. 12 for the purpose of comparing the results of the Association's survey with the utility committees' estimate. In general, the Association's expected increase for firm service is from about 1/2 to 3/4 of the increase expected by the committees and for interruptible service is about 1/4 to 1/2. While the Association's survey indicates that the committees' load estimates may be somewhat on the high side, should such lower estimates prevail the supply-load relationships would be better than anticipated. However, the disparity is not such as to cause erroneous broad conclusions to be made from the committees' study. The Commission appreciates having an independent check on load growth for these classes of customers that comprise large and important users of natural gas in the state.

Military Loads

A considerable amount of time was devoted to the question of the availability of gas to supply a number of Army, Navy and Air Force installations with natural gas. An independent consulting engineer, by Exhibit No. 13 on behalf of three large gas companies, prepared a review and analysis of the requests made for natural gas as presented by the Public Works Office of the Eleventh Naval District in Exhibit No. 4, in the light of natural gas availability and requirements as set forth in Exhibit No. 3. After considering such factors as limitations that may be imposed to make gas deliveries to existing and new locations because of lack of plant capacity and the feasibility both from a practical and economic standpoint, of using an oil and/or liquefied petroleum fuel where the natural gas service would be contrary to filed rules and regulations, the engineer arrived at the following conclusions:

1. Eighty-four per cent of the total firm gas requests to be served with natural gas and the remaining 16 per cent with propane gas and light fuel oils.
2. Eleven per cent of the total interruptible requests to be served with natural gas and the remaining 89 per cent with fuel oil.
3. The situation with regard to the availability of fuel oils and liquefied petroleum gas is not unfavorable where natural gas cannot be served.

The principal point of difficulty in so far as interruptible gas is concerned, is in the San Diego area where the availability of natural gas to the area is limited by the capacity of the two transmission lines upon which the entire area's requirements depend. About 80 per cent of the proposed military interruptible load is in this area. Because of the heavy curtailment which would be required in the colder portion of the year the engineer stated it appeared impractical for the military to use this service

and furthermore it would require uneconomic expansion of the utility's distribution system.

The San Diego area total load is limited by the present capacity of the two transmission lines to 73,000 Mcf per day. The utility is faced with a deficiency of 46,000 Mcf on an exceedingly cold day in the winter 1955-56. Exhibit No. 20 shows that to meet this deficiency the San Diego Gas & Electric Company plans to increase storage capacity on the system, to increase the physical deliverability of the Moreno transmission line and to obtain an increase in basic supply of gas.

Before the close of the hearing on November 20, 1952 counsel for the military services indicated that substantial agreement had been reached with the utility companies as to the handling of the government's requests for gas service. The reasons for San Diego Gas & Electric Company's inability to supply all interruptible loads was understood by the government representatives.

At the hearing on May 14, 1953 a representative from the Ridgecrest Chamber of Commerce and China Lake Community Council appeared and requested the State of California to do everything in its power to bring natural gas to Ridgecrest and China Lake. He represents a critical defense area and claims it is now paying exorbitant rates for bottled gas. This location is close to a large naval test station and obtaining gas is in reality a part of this military problem. The nearest source of natural gas is the Topock-Milpitas pipeline of the Pacific Gas and Electric Company, some 50 miles distant, and the cost of an extension line would be too great for the existing residential community to support at reasonable rates. The project would have to be a joint undertaking with the test station. Counsel for the military services had

discussed this problem with the southern gas companies and indicated that this situation is now under study.

Conclusion

After reviewing the evidence presented by representatives of the utilities, industry, military service, and customers, it is the conclusion of the Commission that during this 31-month period since the investigation was originated on March 13, 1951 the gas situation and outlook has improved sufficiently to warrant a temporary if not permanent closing of this investigation. The armed conflict in Korea presently is in a state of truce which may tend to lessen somewhat the load growth of the existing defense and war industry and reduce the needs of the military for new service.

The committee recommended concluding this investigation on the basis that it has fulfilled its function and the purposes for which this case was instituted. It indicated an improvement in the situation between the time Exhibits Nos. 17 and 25 were prepared in that the estimates for interruptible gas usage are now a little lower than a year ago, that the military loads have not come on to the extent that they heretofore have been estimated, that the supply of oil-well gas in California is now holding up better than anticipated and that an additional supply of out-of-state gas has been secured.

The request for closing of the investigation was opposed by counsel for the California Manufacturers Association on the grounds that the matter of gas supply is an exceedingly important question in which the public is vitally interested, that information on the subject should be available from time to time, and that continuance of the case would expedite dealing with any new emergency which may arise.

The request of the Association has merit and we will recommend continuance of the gas committees and periodic reports regarding future supply-demand relationships, major changes in gas sources or availability and development of added underground storage.

The situation with regard to the firm customers appears satisfactory for the foreseeable future provided additional seasonal storage is provided as suggested by the utility representatives. It is on this basis that the Commission feels justified in closing this investigation at this time. While there will have to be curtailment of the interruptible class during the colder weather this is a customary situation and is not one for undue alarm. Risks are involved in that the local and out-of-state supply may not come up to expectations or that outages may occur and curtailment of certain firm load on colder days may be necessary, but it is believed that the present and foreseeable supply represents a reasonable balance between engineering economics and unlimited service.

At the close of the hearing on May 14, 1953 the Presiding Commissioner was not ready at that time to recommend discontinuance of this investigation and set November 6, 1953 as the next day of hearing. Since that date the cessation of hostilities in Korea is of sufficient importance in our opinion, along with the current outlook, to warrant closing the investigation and cancellation of this future hearing date. The appreciation of the Commission for cooperative participation is extended to all persons and representatives who aided in this investigation.

O R D E R

The Commission on its own motion, having instituted an investigation to ascertain the present and potential demands for and availability of gas in California and the need for and propriety of emergency modification of current rules or practices to facilitate the supplying of gas service, and it being the opinion of the Commission that the gas situation has improved sufficiently to permit termination of this investigation without need for modification of current rules or practices, public hearings having been held, request for closing of this investigation having been made and the Commission now being fully advised; therefore,

IT IS ORDERED that the investigation herein be and it is hereby terminated and dismissed.

IT IS HEREBY RECOMMENDED that the several gas utilities in this state take the following cooperative action:

1. To continue existing gas committees, modified whenever necessary, and their activities 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 similar to Exhibit No. 25 in this proceeding.
2. Promptly advise the Commission of any new fields or new sources of natural gas and of any major changes in gas source or availability.
3. Investigate and periodically inform the Commission as to the status and development of new underground or seasonal storage projects in the state.

IT IS FURTHER ORDERED that the Secretary of the Commission shall serve copies of this decision upon the appearances of record herein and shall mail copies of said decision to the Governor of the State of California, to members of the Senate and Assembly of the State of California, to members from California of the Senate and House of Representatives of the United States of

America, to members of the utility committees concerned with this investigation, and to members and the Secretary of the Federal Power Commission, Washington, D. C.

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

Dated at South Pasadena, California, this 22nd day of September, 1953.

P. Z. [Signature]  
President

Harold P. Hull

[Signature]

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Commissioners

Peter E. Mitchell  
Commissioner S. Justus F. Crasmer, being necessarily absent, did not participate in the disposition of this proceeding.



## APPENDIX "A"

LIST OF APPEARANCES

Respondents: Southern California Gas Company and Southern Counties Gas Company of California, by T. J. Reynolds and Milford Springer; Pacific Gas and Electric Company, by R. W. DuVal and Frederick T. Searls; Coast Counties Gas and Electric Company, by W. E. Johns.

Interested Parties: Riverside Cement Company, by Lauren M. Wright; Department of Water and Power, City of Los Angeles, by Ivan L. Bateman; California Manufacturers Association, by George D. Rives, Alfred A. Hampson, Jr., and Joseph J. Pileckas; California Farm Bureau Federation, by J. J. Deuel and Edson Abel; U. S. Navy, Department of Defense and the General Services Administration and all executive agencies of the U. S. Government, by Charles Goodwin, George Spiegel and Commander Lewis N. Evans; Inspector, Navy Petroleum Reserves in California, by Lt. Commander F. M. Tully; City of Oakland, by John W. Collier and Loren W. East; City of Long Beach, Bureau of Franchises and Public Utilities, by Henry E. Jordan; Long Beach Gas Department, by L. L. Bendinger; San Diego Gas & Electric Company, by W. B. Pattee and Sherman Chickering of Chickering and Gregory; Challenge Cream and Butter Association and Gentry, Inc., by W. D. MacKay; Air Force representative, Joint Utilities Board, Western Area, Joint Committee, by John D. McLaughlin; City of Berkeley, by Fred C. Hutchison, Robert T. Anderson and Lester C. Uren; City of Pasadena, by Clarence A. Winder; City of Los Angeles, by Roger Arnebergh, Alan G. Campbell, T. M. Chubb and H. M. Kauffman; Southern California Edison Company, by Bruce Renwick and Rollin E. Woodbury; City of San Francisco, by Dion R. Holm and Paul L. Beck; District Public Works Office, 11th Naval District, by C. L. Alliman; Natural Gas Producers Association of California, by Martin J. Weil; Ridgecrest Chamber of Commerce and China Lake Community Council, by Weldon M. Sparrow.

For Commission Staff: Charles W. Mors, Supervising Engineer; and Lloyd E. Cooper, Gas Engineer.

Other Appearances: 11th and 12th Naval Districts, 6th Army and U. S. Air Corps, by Howard L. Minister as Petitioner; Glass Container Manufacturers' Institute, by Richard Chaney.

LIST OF WITNESSES

Evidence was presented on behalf of the General Committee by J. S. Moulton; on behalf of the Working Committee by Grove Lawrence; on behalf of California Manufacturers Association by Homer R. Ross; on behalf of the respondents by Roy A. Wehe, J. L. Oberseider, A. F. Bridge, and John Riegler; on behalf of the Bureau of Yards and Docks by H. G. Dillin and Roy M. Bauer; on behalf of the Natural Gas Producers Association of California by Ernest K. Parks; on behalf of the Coast Counties Gas and Electric Company by Charles Grunsky; on behalf of the San Diego Gas & Electric Company by Frank Porath; on behalf of the Southern Counties Gas Company of California by Raymond Work; on behalf of all the United States Armed Forces by Howard L. Minister; by W. D. MacKay, interested party; and on behalf of the Ridgecrest Chamber of Commerce and China Lake Community Council, by Weldon M. Sparrow.

APPENDIX "A" --contd.

LIST OF MEMBERS OF COMMITTEES

<u>Name</u>	<u>Title</u>	<u>Company</u>
<u>General Committee</u>		
J. S. Moulton, Chmn.	Vice President	Pacific Gas and Electric Company
W. J. Herrman, Vice-Chmn.	Vice President	Southern California Gas Company
H. G. Dillin	Vice President	San Diego Gas & Electric Company
F. A. Hough	Vice President	Southern Counties Gas Co. of Calif.
Grove Lawrence	Vice President	Southern California Gas Company
E. H. Fisher	Mgr., Dept. Gas Supt. & Control	Coast Counties Gas and Electric Co.
R. S. Fuller	Mgr., Gas Dept.	Pacific Gas and Electric Company
A. B. Gilbertson	Property Engr.	California-Pacific Utilities Co.
C. Grunsky	Chief Engineer	Coast Counties Gas and Electric Co.
R. P. Work	Rate Engineer	Southern Counties Gas Co. of Calif.
<u>Working Committee</u>		
Grove Lawrence, Chmn.	Vice President	Southern California Gas Company
S. A. Bradfield	Admin. Engr.	Southern California Gas Company
C. P. deJonge	Supt., Gas Dept.	San Diego Gas & Electric Company
J. W. Ellis	Engineer	Pacific Gas and Electric Company
E. H. Fisher	Mgr., Dept. Gas Supt. & Control	Coast Counties Gas and Electric Co.
C. Grunsky	Chief Engineer	Coast Counties Gas and Electric Co.
S. A. Haavik	Field Engineer	Pacific Gas and Electric Company
W. C. Mosteller	Asst. to V. P.	Southern Counties Gas and Electric Co.
J. L. Oberseider	Gas Trans. Engr.	Southern California Gas Company
F. R. Porath	Rate Engineer	San Diego Gas & Electric Company