Decision No. 46340

ORIGINAL

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 availability of electricity in California, and the need for and propriety of emergency modification of current rules or practices to facilitate the supplying of electric power and energy.	Case No. 5284

Appearances and list of witnesses are set forth in Appendix "1".

INTERIM OPINION

If electric power supplies in California fail to meet the demands for electric service in the next year and a half, it will be because of national decisions presently being formulated. The impact of war production contracts and expansion of military establishments in a particular area greatly inflate requirements for utility services. To meet such accelerated growth, the construction schedules for expansion of utility plant must be stepped up. The Defense Production program is the most serious threat to adequate electric resources. While demands for electricity are multiplying at a rapid rate, the production of the facilities to construct new generating sources becomes more and more difficult as greater quantities of critical materials are forged into armaments and war materials. Failure to provide the means to keep construction schedules abreast of mounting demands inevitably will breed scarcity and curtailment.

These facts were shown and these conclusions indicated from evidence adduced in the hearings on an order of investigation into the electric power situation in the State of California

instituted by this Commission on April 3, 1951. Public hearings on this order of investigation were held on July 6, 1951 in Los Angeles and on September 19, 1951 in San Francisco, before Commissioner Harold P. Huls and Examiner M. W. Edwards. Representatives of the utilities, industry, and public organizations in California attended these hearings. The record contains a detailed survey of the power situation in various areas and on the several utility systems within the state.

The Problem

During the past 15 months, the United States has been engaged in armed conflict in Korea. At the same time, it has been mobilizing for defense. That mobilization has created a substantial addition to the sharp rate of electric load growth accompanying the rapid postwar gain in California's population. Industrial production for defense and war is expected to continue to increase over the next year or two because of the new military, industrial, agricultural, commercial, and domestic projects under construction, in the design stage, or projected for development, throughout the state.

This Commission has the responsibility of requiring electrical corporations, as defined in the Public Utilities Act, to: "furnish, provide and maintain such service, instrumentalities, equipment and facilities as shall promote the safety, health, comfort and convenience of its patrons, employees and the public and as shall be in all respects adequate, efficient, just and reasonable." 1/

Generating Agencies

Many of the agencies operating and maintaining generating equipment in the state are not subject to Commission jurisdiction.

1/ Section 13.

In the past, these agencies have displayed generous cooperation by interconnecting their facilities with those agencies subject to its jurisdiction. Such cooperation has promoted the most efficient utilization of the electrical generating equipment in the state. Such equipment is also interconnected by high-voltage transmission lines with generating equipment located outside of the state in Nevada, Arizona, and southern Oregon. The larger generating agencies in California under Commission jurisdiction are:

Pacific Gas and Electric Company
The California Oregon Power Company
Sierra Pacific Power Company
Southern California Edison Company
California Electric Power Company
San Diego Gas and Electric Company

The larger generating agencies not subject to such jurisdiction are:

City and County of San Francisco
East Bay Municipal Utility District
Merced Irrigation District
Modesto and Turlock Irrigation Districts
United States Bureau of Reclamation Projects:
Shasta, Keswick, Hoover, Parker, and Davis
Yosemite National Park
Metropolitan Water District
City of Los Angeles
City of Burbank
City of Glendale
City of Pasadena
Imperial Irrigation District

Operation of the production resources of these many agencies is integrated through the Pacific Southwest Power Interchange Committee.

Pacific Southwest Power Interchange Committee

The Pacific Southwest Power Interchange Committee was established during the early part of World War II, in 1941, when the need for complete integration of all power resources in the state first became particularly acute. All during the war and during the trying postwar period, this committee has achieved a remarkably efficient utilization of existing equipment and has enhanced the orderly development and programing of new production

facilities to meet the precipitous growth of electric load in the state. Members of this committee have prepared reports of current load development studies to assist the Commission in this investigation. This Commission acknowledges and appreciates their efforts. The present membership of the Pacific Southwest Power Interchange Committee is set forth in Appendix "1" herein.

Estimated Power Requirements

On July 6, 1951, the Pacific Southwest Power Interchange Committee, through its Vice Chairman, Mr. H. A. Lott, submitted a detailed report, Exhibit No. 3, which summarized the current situation with regard to power supply and the outlook for the years 1952, 1953, and 1954 under assumed adverse hydro conditions and assumed average hydro conditions. At present, over one-half of the production resources in the Pacific Southwest area consist of hydroelectric generating capacity, and the effect and possibility of an adverse hydro year is controlling. Within the past generation there have been two dry periods, 1924 and 1948, when low hydro capability was in a large measure the final cause of power rationing during a portion of those years. Other conditions such as rapid load growth in a postwar period and delays in obtaining new generating equipment also contributed to the failure of available generating capability to meet the load requirements. During a dry year, there is a large increase in power requirements for agricultural pumping of irrigation water in the spring of the year to offset natural rainfall deficiencies. Obviously, adequate reserves against a dry year must be provided in forecasting new capacity requirements.

For this reason, it is customary to predicate the outlook for the future upon adverse hydro conditions as set forth in Table 1 attached hereto. This data is taken from Exhibit No. 9, presented on September 19, 1951, as a revision of Exhibit No. 3. Between

July 6 and September 19, there is a deterioration in the outlook for August, 1952 equivalent to 97,000 kilowatts lesser margin. The decline for the August, 1953 outlook is 236,000 kilowatts. The decline in margins is due to delays to scheduled new capacity completions, caused by deferred equipment delivery dates, and by added military and defense load estimates.

Currently, the 1950-1951 rainfall season has terminated in a relatively dry spring, the majority of our seasonal rainfall and snowfall having occurred in November and December, 1950. The critical August peak, however, has been met without resort to rationing. Assuming normal rainfall this fall, the situation for December, 1951 appears satisfactory, with a margin of approximately 15% of capacity and 20% of energy indicated for that month. For the future, the picture does not appear as bright. In August, 1952 the indicated energy margin drops to 2.5% and in 1953 returns to only 3.5%. These low margins during the critical summer periods indicate urgent need for the completion of the planned new plant program on schedule.

New Capacity Program

New generating plants under construction by 14 utilities, both publicly and privately owned, in the area as scheduled for completion in 1952, 1953, and 1954 are summarized as to capacity as follows:

Year	Name Plate Rating
1952	775,000 kw
1953	408,000 kw
1954	1,045,000 kw
Total	2,228,000 kw

With indicated margins as low as 95,000 kw in 1952 and 145,000 kw in 1953, it is apparent that any further delay in completion of the program may demand rationing of electric service if a dry year materializes.

Effect of Delays in Construction

With the total capacity for the Pacific Southwest Power Area as awhole reduced to the point where only a 2.5% margin prevails as contrasted with a normal operating margin of 12% to 15%, it is obvious that the situation on some utility systems will be very critical. The California Electric Power Company's representative stated that power will have to be curtailed each month that the completion of its two new Highgrove steam electric generating units of 30,000 kw each is delayed beyond the scheduled dates of July and September, 1952. The representative of the Southern California Edison Company testified to delays because of a reduced availability of structural steel and copper. In Northern California, the situation appears somewhat more favorable through 1954 provided there are no delays to the new additions.

Conclusions

By September, 1951, the new electric load for military and defense programs in the Pacific Southwest Power Area was expanding more rapidly than anticipated in July, 1951. The deterioration in the outlook for electric power margins results from impending delays to construction schedules because of difficulties in obtaining steel and copper to complete the new generating plants as well as the mounting loads. There may be a need for rationing of electric service starting in the summer of 1952 if the year is dry. If there is any further delay in constructing new plants as scheduled, curtailment of new connections immediately may result. The Commission's jurisdiction does not cover all generating agencies in the state. Any curtailment program will require the voluntary cooperation of government, municipal, and out-of-state generating agencies in pooling of resources. Such program will have to be designed to help the areas or systems where shortages first may occur.

INTERIM ORDER

The Commission, on its own motion, having instituted an investigation to ascertain the present and potential demands for and availability of electricity, makes the foregoing report to the citizens of the State of California and to their legislative representatives.

IT IS ORDERED that, pending completion of this investigation, the Secretary of the Commission shall serve copies of this interim decision upon the appearances of record herein and shall mail copies of said decision to members of the Senate and Assembly of the State of California; to members, from California, of the Senate and the House of Representatives of the United States of America; to members of the Senate-House Defense Production Committee; to Mr. Charles E. Wilson, Director, Office of Defense Mobilization; to Mr. Manly Fleischman, Administrator, National Production Authority; to Mr. Edward W. Morehouse, Vice President, General Public Utilities Corp., New York City, and Chairman of the Defense Production Administration Special Committee to Survey National Defense Power Needs; and to members of that committee, Mr. Ralph Booth, President, Jackson and Moreland, Engineers, Boston, Massachusetts; Mr. Herbert Marks, Attorney at Law, Washington,

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APPENDIX "1"

LIST OF APPEARANCES

Respondents: Pacific Gas and Electric Company, by Ralph W. DuVal and Frederick T. Searls; Southern California Edison Company, by Wayne N. Johnson, Bruce Renwick, and Rollin E. Woodbury; San Diego Gas and Electric Company, by E. D. Sherwin and Sherman Chickering; Pacific Southwest Power Interchange Committee by H. A. Lott.

Interested Parties: California Electric Power Company, by Willis T. Johnson; Bureau of Reclamation, Region II, by Oliver O. Rands; California Manufacturer's Association, by George D. Rives; California Farm Bureau Federation, by J. J. Deuel; Light and Power Department of the City of Pasadena, by T. M. Goodrich; Coast Counties Gas and Electric Company, by Joseph E. Sheeks and W. E. Johns; Twelfth Naval District, by Alvin K. Mann; Navy Department, Department of Defense, and all executive agencies of the U. S.Government, by Cmdr. Lewis R. Evans and Charles Goodwin; Department of Water and Power, City of Los Angeles, by Ivan L. Bateman; Metropolitan Water District of Southern California, by E. W. Rockwell; City of Glendale by L. W. Grayson; City of Burbank, Public Service Department, by J. H. McCambridge; City and County of San Francisco, by Dion R. Holm and Paul L. Bock; City of Oakland, by John W. Collier and Loren W. East; City of Berkeley, by Fred C. Hutchison and Robert T. Anderson.

Commission Staff: R. P. O'Brien, Supervising Engineer; and L. R. Knerr, Electrical Engineer.

Other Appearances: George R. Bell of the Federal Power Commission as an observer.

LIST OF WITNESSES

Evidence was presented on behalf of the Pacific Southwest Power Interchange Committee by H. A. Lott, Vice Chairman; on behalf of the Southern California Edison Company by W. N. Johnson; on behalf of the San Diego Gas and Electric Company by E. D. Sherwin; on behalf of the California Electric Power Company by W. T. Johnson; on behalf of the Metropolitan Water District of Southern California by E. W. Rockwell; on behalf of the Department of Water and Power, City of Los Angeles, by Ivan L. Bateman; on behalf of the City of Glendale by L. W. Grayson; on behalf of the City of Burbank by J. H. McCambridge; on behalf of the City of Pasadena by T. M. Goodrich; on behalf of the Pacific Gas and Electric Company by I. W. Collins; on behalf of Region II, U. S. Bureau of Reclamation by O. O. Rands; on behalf of U. S. Navy by A. K. Mann.

LIST OF MEMBERS OF THE
PACIFIC SOUTHWEST POWER INTERCHANGE COMMITTEE

N. B. Hinson, Chairman, Retired from Southern California Edison Company;
H. A. Lott, Vice Chairman, Southern California Edison Company;
Robert P. O'Brien, California Public Utilities Commission;
J. H. McCambridge, City of Burbank;
D. D. Smalley, Pacific Gas and Electric Company;
R. M. Peabody, Metropolitan Water District of Southern California;
E. D. Sherwin, San Diego Gas and Electric Company;
L. K. Doutrick, Central Arizona Light and Power Company;
W. T. Johnson, California Electric Power Company;
L. W. Grayson, City of Glendale;
E. L. Bettannier, City of Pasadena;
B. A. Weiss, Imperial Irrigation District;
C. P. Garman, Department of Water and Power, City of Los Angeles;
E. A. Moritz, U. S. Bureau of Reclamation, Boulder City;
W. N. Johnson, Southern California Edison Company.

TABLE 1

PACIFIC SOUTHWEST POWER AREA
LOAD - RESOURCE ESTIMATE

Item	Demands in Thousands of Kilowatts		Energy in Millions of Kilowatt-Hours		
	Aug.	Dec.	Aug.	Dec.	Year
Year 1951 (Current Hydro Conditions)					
Fuel	3,616	3,702	2,405	2,301	25,730
Hydro	4,177	4,064	1,882	1,457	21,698
Total Capacity Available in Area	7,793	7,766	4,287	3,758	47,428
Net to Groups Outside P.SW.P.A.	28	12	9	6	-40
Total Available for Area Load	7,765	7,754	4,278	3,752	47,468
Estimated Net Demands at Generation	6,431	6,640	3,516	3,043	35,944
Margin for Overh., Res., & New Load	1,334	1,114	762	709	11,524
Scheduled Maintenance Outages	470	164	196	100	2,696
Margin	864	950	566	609	8,828
Year 1952 (Adverse Hydro Conditions)					
Fuel	3,889	4,257	2,450	2,680	28,752
Hydro	4,117	3,913	1,614	1,221	16,563
Total Capacity Available in Area	8,006	8,170	4,064	3,901	45,315
Net to Groups Outside P.SW.P.A.	10	5	9	7	76
Total Available for Area Load	7,996	8,165	4,055	3,894	45,239
Estimated Net Demands at Generation	7,319	7,456	3,854	3,386	40,928
Margin for Overh., Res., & New Load	677	709	201	508	4,311
Scheduled Maintenance Outages	301	276	106	221	2,206
Margin	376	433	95	287	2,105
Year 1953 (Adverse Hydro Conditions)					
Fuel	4,504	5,208	2,860	3,267	34,140
Hydro	4,107	3,863	1,642	1,265	16,626
Total Capacity Available in Area	8,611	9,071	4,502	4,532	50,766
Net to Groups Outside P.SW.P.A.	8	0	6	5	55
Total Available for Area Load	8,603	9,071	4,496	4,527	50,711
Estimated Net Demands at Generation	7,915	8,058	4,180	3,676	44,494
Margin for Overh., Res., & New Load	688	1,013	316	851	6,217
Scheduled Maintenance Outages	303	432	171	253	2,994
Margin	385	581	145	598	3,223
Year 1954 (Adverse Hydro Conditions)					
Fuel	6,152	6,397	3,893	4,031	44,948
Hydro	4,101	3,863	1,633	1,254	16,449
Total Capacity Available in Area	10,253	10,260	5,526	5,285	61,397
Net to Groups Outside P.SW.P.A.	0	0	0	0	19
Total Available for Area Load	10,253	10,260	5,526	5,285	61,378
Estimated Net Demands at Generation	8,498	8,636	4,479	3,932	47,747
Margin for Overh., Res., & New Load	1,755	1,624	1,047	1,353	13,631
Scheduled Maintenance Outages	641	277	312	167	4,268
Margin	1,114	1,347	735	1,186	9,363

D.C.; and Mr. G. O. Wessenauer, Power Manager, Tennessee Valley Authority, Chattanooga, Tennessee.

The effective date of this order shall be twenty (20) days after the date hereof.

Dated at San Francisco, California, this 30th day of October, 1951.

President.

Commissioners.