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Decision No. 91751 MAY 6 1980

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's own motion into possible electrical energy supply shortages of electric public utilities resulting from the shutdown of certain nuclear generating facilities and emergency measures to provide for necessary mutual assistance.	)	OII No. 43 (Filed April 30, 1979)

(Appearances are shown in Decision No. 90427.)

ADDITIONAL APPEARANCES

Barton W. Myerson, Attorney at Law, for San Diego Gas & Electric Company; and Robert W. Kendall, Attorney at Law, for Southern California Edison Company; respondents.
Dunne, Phelps & Mills, by Marshall G. Berol, Attorney at Law, for California Swimming Pool Industry, Energy, Codes and Legislative Council; Graham & James, by Boris H. Lakusta, David J. Marchant and Thomas J. MacBride, Jr., Attorneys at Law, for the California Hotel and Motel Association; and Dian Grueneich, Attorney at Law, for the California Energy Commission; interested parties.

THIRD SUPPLEMENTAL OPINION

Pursuant to Decision No. 90427 issued June 19, 1979 in this proceeding Pacific Gas and Electric Company (PG&E), Southern California Edison Company (Edison), and San Diego Gas & Electric Company (SDG&E) placed into effect a 1979 summer reserve load-sharing plan and statewide load reduction plan, which plan also applied in connection with the Sacramento Municipal Utility District (SMUD) and the Los Angeles Department of Water and Power (LADWP).[1/]

1/ Hearings in the initial phase of OII 43 were held in a joint record with Docket 79-NL-1 of the California Energy Commission.

The decision also directed PG&E, Edison, and SDG&E to expand their energy conservation programs for 1979 filed pursuant to Ordering Paragraph 1 of Decision No. 86501 in accordance with the summary set forth in Appendix D to that decision. Each respondent electric utility was ordered to file a modification to its Tariff Rule 14.1 consistent with the modified Rule 14.1 set forth in Appendix E to Decision No. 90427. The purpose of the Rule 14.1 revision was to shift electric loads away from daytime peak periods during the summer months of 1979.

Supplemental Decision No. 90712 issued August 28, 1979 revised the provisions of Rule 14.1 adopted in Appendix E to Decision No. 90427 to establish the maximum summer temperature settings for ventilating and air conditioning at 78° F. so as to conform with regulations of the Federal Department of Energy (DOE) adopted in 10 CFR Part 490 (Federal Register, Volume 44, No. 130, July 5, 1979). Rule 14.1 also was revised to permit electric outdoor advertising signs to be shut off at midnight, rather than 10:30 p.m.

Second Supplemental Decision No. 91184 issued January 8, 1980 directed each respondent electric utility and gas utility to modify its Rule 14.1 consistent with the rule attached to the order; and set further hearings to determine (a) whether the Commission should institute programs for the summer of 1980 similar to those inaugurated pursuant to Decision No. 90427 for the summer of 1979, and (b) for the receipt of further evidence from the utilities concerning the effectiveness of conservation plans and the load reductions achieved during the summer of 1979.

The further hearings ordered in Decision No. 91184 were held before Administrative Law Judge Mallory in San Francisco on March 26, 27, and 28, and April 10 and 11, 1980.

1979 Load Reduction Plan

Decision No. 90427, which established procedures to be followed during the summer of 1979, included a three-stage conservation and joint load reduction plan. Stage I (serious) of the plan was initiated whenever the capacity margin of any utility fell below five percent; Stage II (urgent) would commence when the statewide margin dropped below three percent, and Stage III (rotating outage) would commence when the statewide margin dropped below one and one-half percent.

In 1979 Stage I alerts were called at times when PG&E's and Edison's capacity reserve margins fell below five percent. No Stage II or Stage III situations occurred in 1979.

In addition to the joint load reduction plan, the Commission directed that the regulated utilities initiate an augmented conservation plan. Electric Rule 14.1 was revised to set a minimum air-conditioner (cooling) temperature setting of 78° F.; and an 85° F. minimum setting was required under a Stage I appeal. Stage I also established other limitations on electrical usage during the critical daily peak usage period of noon to 6:00 p.m.

Evaluation of the effect of pre-Stage I public appeals to reduce electric usage during the daily peak period and the effect of conservation programs indicates that substantial voluntary reduction of electric usage during critical periods was achieved during the summer of 1979.

Evidence Adduced in Current Phase of OII 43

Representatives of the major California electric utilities and the staff of this Commission presented data assessing the expected electric capacity and energy supply for the balance of 1980.[2/] Utility

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2/ The report of the Assessments Division of the California Energy Commission in Docket 80-EA-4 entitled "1980 Electric Supply Situation" was placed in the correspondence file in our OII 43.

witnesses also presented evidence with respect to the effectiveness of load reduction and conservation programs adopted for the summer of 1979. The utilities jointly proposed summer load-sharing, load reduction, and expanded conservation plans for the summer of 1980. A similar proposal was made by the staff of this Commission.

Evidence also was presented on behalf of Fafco Incorporated (Fafco) and Swimming Pool Industry Energy, Codes and Legislative Council (SPEC) in support of revised electric Rule 14.1 provisions applicable to swimming pools.

Evaluation of Summer Peak Loads

Exhibit 42, presented on behalf of the electric utilities, contains an analysis of the 1980 power situation for the California Power Pool companies [PG&E (including SMUD), Edison, and SDG&E] and LADWP, without Diablo Canyon Unit 1.[3/] The data were presented on two bases: the first includes Rancho Seco,[4/] which was shut down for maintenance at the March hearings, and the second excludes Rancho Seco (900 MW of capacity). Repairs to Rancho Seco are expected to be completed and the plant in operation in the second week in April.

Table 1 contains data extracted from Exhibit 42 which sets forth estimates of electric capacity margins (after estimated forced outages) for the months of April through December 1980, including Rancho Seco. Exhibit 42 also contains similar estimates of energy supplies. That exhibit concludes energy supplies are adequate for the summer.

3/ PG&E estimates that Nuclear Regulatory Commission (NRC) authority to operate Diablo Canyon Unit 1 will be received in late 1980.

4/ The Rancho Seco Nuclear Power Plant of SMUD.

TABLE 1

Major California Electric Utilities
Summary Capacity Report
Average 1980 Conditions with Rancho Seco

	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Margins After Forced Outage (MW)									
PG&E	1091	481	741	461	844	259	631	259	961
Edison	1733	1594	964	1300	1315	889	1747	2634	2412
LADWP	664	1213	1144	1131	593	898	608	568	659
SDG&E	447	211	402	325	313	156	499	519	424
Total	3935	3499	3251	3217	3065	2202	3485	3980	4456
Percentage of Monthly Peak									
PG&E	9.3	3.6	4.9	2.9	5.3	1.8	5.3	2.1	7.5
Edison	18.2	14.8	7.9	10.4	10.4	6.8	16.3	26.6	24.1
LADWP	22.2	36.3	30.1	28.1	14.2	23.0	17.4	17.8	20.3
SDG&E	26.7	12.7	22.3	16.9	15.8	7.4	28.8	27.8	21.4
Total	15.2	12.0	9.9	9.4	6.9	6.6	12.5	14.5	15.9

The California Power Pool requires each utility to maintain at least a 7 percent spinning reserve and Stage I of the statewide load reduction plan is initiated when reserves of 5 percent or less are forecasted. At such point utilities are expected to share reserves on a continuous basis for the duration of the reserve deficiency until the supplying utility gets down to approximately 1.5 percent spinning reserve (which could jeopardize service to its own customers).

The conclusions reached in Exhibit 42 are as follows:

(1) The reserve margin after planned maintenance, known restrictions, but without consideration for any forced outage is 5834 MW (17.0%) in July, 5716 MW (16.5%) in August, and 5423 MW (16.3%) in September with Rancho Seco, and 4959 MW (14.4%), 4891 MW (14.2%), and 5312 MW (15.9%), respectively, without Rancho Seco.

(2) In July, August, and September using average forced outages experienced in the last 5 years of the individual utility, the combined reserve margin drops to 3217 MW (9.4%), 3065 MW (8.9%), and 2202 MW (6.6%), respectively, with Rancho Seco and to 2342 MW (6.8%), 2240 MW (6.5%), and 2091 MW (6.3%), respectively, without Rancho Seco. The utilities are taking all possible measures to reduce forced outages.

(3) For this report, the utilities have shown only those purchases presently under contract or in final negotiations. Efforts are continuing to secure additional firm resources from out-of-state utilities to the extent transmission capacity exists.

(4) LADWP's hydroelectric resources continue to reflect the unsustainable capability of those units powered from limited water releases (pump-storage). PG&E is negotiating to purchase up to 600 MW of Castaic capacity during summer months with heaviest demand. This arrangement necessitates return of energy within 24 hours on a 1.7 to 1 MWh basis.

(5) The margins indicated assume coincident peak demands for the utilities. As has been demonstrated in the past, near simultaneous peaks can occur during a statewide heat wave. However, an analysis of the last eleven years indicates that the peak demand diversity has ranged from 100 to 1800 MW with an average of 1000 MW. A reduction in coincident peak demand of 1000 MW would result in an approximate three percent increase in margins during the summer months.

(6) It continues to appear that the summer capacity reserves will be substantially below desirable levels, especially if Rancho Seco is not available. Outages in excess of the average, or hotter than normal temperatures statewide, would reduce these levels even further. With Rancho Seco, the probability of Stage I and II days is high. Without Rancho Seco, Stage III forced load curtailment in northern and central California may become necessary.

Similar estimates were presented by the Commission staff in Exhibit 53. That exhibit contains summaries of capacity and energy. The facts and assumptions on which the tables were developed are as follows:

1. Rancho Seco will come back on line by April 1, 1980 after refueling and will continue on for the remainder of the year.

2. Diablo Canyon receives an operating license in late 1980, but then provides only small amounts of test energy.

3. San Onofre Unit No. 1 will be in operation throughout 1980 except for a ten-week refueling and maintenance shutdown ending June 21. (Later information has shortened the shutdown period to seven weeks, from April 9 to June 1.)

4. Table 2 (below) reflects hydrological data available as of February 29, 1980, with average precipitation assumed for the remainder of the year. This is expected to provide a runoff of 20-25 percent above normal in Edison and PG&E areas. The latest snow survey of March 1 shows an additional 1.4 billion of kWh of energy estimated to be available for the year 1980 in the PG&E area alone, equivalent to savings of approximately 2 million barrels of oil. This will not have any effect on capacity.

5. California utilities expect to receive in 1980, starting in April, amounts similar to the 1979 recorded Pacific Northwest non-firm receipts which were below average. The Pacific Northwest-California DC line has been uprated from 1400 to 1556 MW which is expected to provide unused firm line capacity available this summer on the order of 200 MW.

6. Capacity margins as shown in Table 2 were calculated after scheduled maintenance and also after average historical forced outages.

7. Major new generation facilities for PG&E for the year 1980 are as follows: Geysers 13, 135 MW (April); Rollins Powerhouse, 11 MW (June); and Geysers 14, 110 MW (August), a total of 256 MW.

8. Edison's portion of the tables are subject to the following assumptions:

(a) Capacity factors for Long Beach Combined Cycle Units 8 and 9 are limited to 34 percent in accordance with coastal permit restrictions and 5 percent for Long Beach Units 10 and 11, with Unit 11 off-line through July 1980.

(b) Ormond Beach is derated from 750 to 710 MW in the energy calculations because of NO_x emission limitations, and Highgrove production is based on a 35 MW capacity factor.

(c) Peaking unit production is based on a five percent capacity factor.

(d) The only major generation scheduled for Edison for the year 1980 is the Big Creek Hydro Plant, rated 31 MW and expected to be in service in March.

9. SDG&E has no new generation scheduled for the summer of 1980.

TABLE 2

Public Utilities Commission

Staff Estimated
Statewide Summary of Reserve Margins - Year 1980

	Utility	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Peak Demand (MW)	PG&E	13,352	14,995	15,846	15,826	14,298	11,946	12,426	12,753
	Edison	10,775	12,205	12,555	12,585	13,010	10,744	9,894	9,994
	SDG&E	1,658	1,806	1,923	1,981	2,100	1,734	1,866	1,982
	LADWP	3,339	3,797	4,023	4,166	3,901	3,496	3,198	3,247
Total		29,124	32,003	34,347	34,558	33,309	27,920	27,384	27,976
Total Capacity (MW)	PG&E	16,458	16,520	17,385	17,392	16,173	15,330	15,044	15,342
	Edison	14,932	15,220	15,209	15,304	15,301	14,993	14,992	14,994
	SDG&E	2,340	2,557	2,401	2,399	2,408	2,521	2,587	2,591
	LADWP	5,432	5,398	5,447	5,393	5,450	5,052	5,012	5,048
Total		39,162	39,695	40,442	40,488	39,332	37,896	37,635	37,975
Available Cap. After Maint. & Avg. Forced Outages (MW)	PG&E	13,833	15,736	16,307	16,670	14,557	12,577	12,685	13,714
	Edison	12,369	13,169	13,855	13,900	13,899	12,491	12,528	12,406
	SDG&E	1,869	2,208	2,248	2,294	2,256	2,233	2,365	2,406
	LADWP	4,552	4,941	5,154	4,759	4,799	4,104	3,766	3,906
Total		32,623	36,054	37,564	37,623	35,511	31,405	31,364	32,432
Margin After Avg. Forced Outages (%)	PG&E	3.6	4.9	2.9	5.3	1.8	5.3	2.1	7.5
	Edison	14.8	7.9	10.4	10.4	6.8	16.3	26.6	24.1
	SDG&E	12.7	22.3	16.9	15.8	7.4	28.8	27.8	21.4
	LADWP	36.3	30.1	28.1	14.2	23.0	17.4	17.8	20.3
Total		12.0	9.9	9.4	8.9	6.6	12.5	14.5	15.9

The conclusions reached in the staff report are as follows:

Table 2 indicates that PG&E's capacity margins after scheduled maintenance drop below the minimum acceptable of 10 percent during the months of March, July, and August and below 5 percent for the months of May, June, July, September, and November when average historical forced outage data are considered. With the capacity purchases of 250 MW in July and 200 MW in August from Edison (just made available to PG&E and not included in the table) margins for July and August will increase to 11.3 percent and 11.2 percent, respectively. Peak demands for March have been lower than forecasted and there was no problem in meeting them.

In the past, SDG&E has been very limited in ability to share peak capacity north to the PG&E territory due to transmission limitations. However, with the San Onofre-Talega - Escondido 230-kV transmission line just being completed and with the completion of the transmission lines to serve San Onofre 2 and 3 scheduled for next June 1, SDG&E estimates that it will be able to supply between 250 and 500 MW of capacity north at peak periods this summer, subject to the conditions in its own system at that particular time.

Additional purchased power may be available on a short-term basis subject to transmission availability. Staff believes there is a reasonable likelihood that the utilities will get through the summer without significant or frequent alerts, especially Stage III (rotating outages). However, our staff believes that it is possible that unusual combinations of conditions could occur that would trigger all stages including Stage III, such as: an unusually severe statewide heatstorm mid-week with little load diversity; a combination of unusually high humidity and smog; high forced outages at times of high demand; loss of major transmission facilities impairing the sharing of resources; and less voluntary conservation and demand reduction during Stages I and II than expected. The staff points out that the likelihood of a Stage III (rotating outage) occurrence is small.

The staff report indicates that statewide energy margins appear adequate. Energy margins of individual utilities appear adequate, except for PG&E's during the months of October, November, and December. Margin deficiencies during these months should be offset by exchange with other utilities and possibly by shifting PG&E's scheduled maintenance for these months. Fuel supplies and fuel oil inventories are adequate.

Additional Available Capacity

A staff conservation engineer introduced evidence concerning the additional energy supply which could be obtained by June 1, 1980 through new capacity, improved maintenance, reduced air quality limitations, and augmented conservation activities. His estimates are set forth in Table 3, below.

TABLE 3

Summary of Additional Electrical Capacity
Available for Summer of 1980 vs 1979
As of June 1, 1980

	Megawatts of Equivalent Capacity				
	New Capacity	Improved Maintenance	Plants Out of Service or Derating	Augmented Conservation	All Measures
PG&E	190	-	-	87.3	277.3
Edison	251	396	(132)	110.5	625.5
SDG&E	30	-	-	22.3	52.3
LADWP	-	330	(24)	N/A	306
SMUD	-	-	-	20	20
Modesto Irrigation District	49*	-	-	-	49
Total	520	726	(156)	240.1	1330.1

N/A - Not Available
( ) - Negative Number
* - New Combustion Turbine

The foregoing, when compared with his independent analysis of an additional demand of 1200 MW in 1980 over 1979, indicates that additional supply exceeds additional demand by 130 MW. The witness cautioned that only 520 MW of the 1330 MW of additional supply results from new capacity; the balance of the added supply comes from less reliable sources. As an example, the witness indicated that improved maintenance of old generating plants may not assure availability of those plants because the older plants are becoming more and more difficult to maintain under circumstances where all existing plant must be on line during summer peak periods to meet statewide demand.[5/]

Forced Outages

The data set forth in PG&E's Exhibit 51 confirm that PG&E's forced outages have increased substantially as generating plant becomes older. Using, as example, PG&E's three generating facilities of 750 MW (3500 psig), Moss Landing Unit 6 (1967) and Unit 7 (1968) and Pittsburg Unit 7 (1972) the combined ten-year average of forced outage hours is 893; the related forced outage figure for 1978 is 1,121 and for 1979 is 1,989.

5/ A great deal of testimony was received from the utilities concerning the year-to-year increases in forced outages because of the inability to replace aging facilities or to shut such facilities down for long periods for maintenance and repair. During the summer of 1979 more forced outages occurred than in many prior years. The utilities have instituted programs to improve maintenance procedures in order to reduce forced outages. A forced outage on a large generating unit during the peak summer period could result in a Stage III (rotating outage) situation.

The utilities are working with our staff to develop effective preventive maintenance programs. We are aware that the period in which scheduled maintenance can be performed has been limited to the nonsummer months because of the need to have the maximum generating capacity on line during the summer periods to meet peak demand; and because of the age of existing plant and the lack of new plant, the existing plant requires greater and more expensive maintenance to ensure its reliability. In order to continue adequately to meet their supply requirements the utilities must accelerate the development of effective preventive maintenance programs; otherwise increasing forced outages may adversely impact the amount of capacity available in the summer of 1981. We will direct the regulated utilities, particularly PG&E, to file within 120 days after the effective date of this order, preventive maintenance plans designed to substantially reduce forced outages during periods of peak electrical demand.

Recommended Actions

The five major utilities and our staff recommend that the Commission approve a summer electric reserve-sharing and load reduction plan substantially the same as that approved for the summer of 1979 by Decision No. 90427. It was the opinion of the utilities and the staff that such plan is required to meet possible capacity shortages during the 1980 summer peak period.

The utilities and the staff also recommend that augmented conservation programs be instituted and that electric Rule 14.1 be revised to incorporate requirements for load reduction during the summer peak daily usage period of noon to 6:00 p.m.

The counsel for the California Energy Commission is satisfied with the record developed in this phase of OII 43 and that Commission is supportive of the implementation of Rule 14.1 for the summer peak demand period.

Proposed Statewide Peak Reduction Plans

Appendix A to this order contains the statewide peak reduction plan proposed by the five major utilities. Exhibit 42 states that SDG&E, Edison, PG&E, LADWP, and SMUD are in agreement that a capacity deficiency may exist for the months of June through September 1980. The utilities have worked together to assess the capacity situation for the summer of 1980 and within that context have developed a plan that represents their best approach to meeting possible capacity problems. This plan includes conservation and load management efforts aimed at reducing this coming summer's peak demands and a three-stage peak reduction program in the event that reserve margins drop below certain levels. The utilities caution that any plan must recognize and reflect the following important considerations:

1. The public may not be aware of the seriousness of the capacity problem.
2. If false alarms are sounded, the public will become skeptical of future alerts.
3. Public appeals lose effectiveness over extended periods of time if the measure is not reinforced on an ongoing basis.

Additionally, SDG&E, Edison, PG&E, LADWP, and SMUD recommend that the same statewide emergency plans previously submitted during OII 43 continue to be used without change, should there be an emergency in the future affecting electrical capacity reserve margins.

Attachment A to Appendix A shows the load reduction measures that will be accomplished during critical periods. The first steps, which are undertaken before Stage I alert days, include a lower cooling limit temperature setting of 78° F. for air conditioning and the issuance of bulletins to alert customers to the need to conserve so as to prevent Stage I occurrences. Stage I and Stage II measures involve curtailment of nonessential uses by major customers and curtailment

of the use of residential appliances and lighting. Those portions of the plan to be implemented by electric tariff Rule 14.1 are followed by (14.1) on Attachment A.

Attachment B to Appendix A shows the estimated incremental reductions in demand resulting from the load reduction measures set forth in Attachment A. The utilities estimate that prior to Stage I, the load reduction measures will reduce demand by 502 MW, a Stage I alert will reduce demand by an additional 803 MW, and the intensified effects of a Stage II alert will produce an additional reduction in load of 1355 MW.

Attachment C to Appendix A shows the proposed augmented summer conservation and load management program proposed by the utilities. The objectives of this program are to make the customers of the utilities aware of the need to reduce loads during peak periods and to provide specific methods to accomplish the required load reductions.

Similar programs were proposed by the staff of the Conservation Section of our Utilities Division. Staff Exhibit 58 contains a summary of recommended actions to be taken by electric utility customers during Stage I and Stage II conservation appeals in the summer of 1980. Exhibit 59 contains the staff's proposed augmented natural gas and electric energy conservation and electric demand reduction activities for the summer of 1980. The substance of Exhibit 58 is set forth in Appendix B and Exhibit 59 is set forth in Appendix C. Appendix B also contains a recommendation that employers allow employees to dress casually for a period of June 1 through October 31, 1980 to minimize discomfort at higher air conditioning temperatures. The staff witness estimates that Stage I appeals would yield over 1000 MW of peak load reduction on a statewide basis and Stage II would yield another 2000 MW or more of peak load reduction if carefully prepared and thorough media coverage is utilized.

Except for the natural gas conservation programs which affect electric usage (page 1 of Appendix B) the programs proposed by the utilities and the staff are the same in all essential respects.

Proposed Rule 14.1

As previously indicated, certain of the proposed curtailments of electric usage during summer peak periods are to be accomplished pursuant to the requirements of electric tariff Rule 14.1.[6/] The utilities proposed that Rule 14.1 provisions adopted for application during the summer of 1979 be made applicable to the summer of 1980.

Paragraph 6.b. of the Rule 14.1 set forth as Appendix E to Decision No. 90427 provided that a circulating pump not exceeding three-quarter horsepower in size may be used to circulate solar heated water from solar collector panels to any pool or to return pool water to solar collector panels.

6/ Rule 14.1 initially was ordered as an emergency measure pursuant to Decisions Nos. 82305, 82358, and 82881. It was partially relaxed by Decision No. 83225, effective July 30, 1974 after the termination of the Arab Oil Embargo. During the summer of 1979 the Commission, by Decision No. 90427 issued June 19, 1979, reinstated the relaxed provisions and modified the rule further to help shift loads away from the electrical peak which usually occurs between the hours of 12:00 noon and 6:00 p.m. By Decision No. 90712 issued August 28, 1979, the Commission changed the air-conditioning lower temperature limit from 80° F. to 78° F. for all normal periods to conform to the then effective Federal Department of Energy commercial building temperature restrictions. Certain of the provisions established for the summer of 1979 were lifted for the winter of 1979-80 by Decision No. 91184 issued January 8, 1980. Rule 14.1 supersedes and cancels all tariff and contract provisions inconsistent with its terms.

Evidence was presented on behalf of Fafco to show that three-quarter horsepower pumps are insufficient to operate circulation systems on pools over 520 square feet in surface area when such pools have been retrofitted for use with solar collectors.

Based on the evidence adduced by Fafco, the Commission staff witness proposed in Exhibit 57 that the following provisions be substituted for the provisions of Paragraph 6.b. of Rule 14.1 adopted in Decision No. 90427:

"6.b. Notwithstanding the provisions of subsection B.6.a., circulating pumps equal to or less than the horsepower ratings set forth below may be used to circulate solar heated water from solar collector panels to any pool or spa and to return pool or spa water to solar collector panels:

"(1) For pools or spas installed (new) after June 1, 1980;

Surface Area Square Feet	Horsepower
520 or less	3/4
521 to 800	1
801 to 1,200	1.5
Over 1,201 - use no more than 1 horsepower per 800 square feet of pool surface area.	

"(2) For pools or spas constructed prior to June 1, 1980 and retroffited with solar systems after June 1, 1980;

Surface Area Square Feet	Horsepower
400 or less	3/4
401 to 600	1
601 to 900	1.5
Over 901 use no more than 1 horsepower per 600 square feet of pool surface area.	

"(3) Pools equipped with solar systems installed prior to June 1, 1980 are exempted from the horsepower limitations set forth above during the period of June 1, 1980 through May 31, 1981."

A witness appearing for SPEC opposed the above-stated provisions on the basis that residential pools retrofitted for solar collectors cannot adequately function with pumps of the sizes set forth above because (1) the formulas used by Fafco to determine pump sizes were based on optimum filter capability and, therefore, did not consider back pressures that develop as filters become clogged through use, (2) the formulas do not consider the limitations resulting from the size of the existing piping to which the collectors are connected, (3) the formulas do not consider the height and distance that the solar heated water must be pumped, and (4) the formulas are based on the most efficient material used in solar collectors and do not give consideration to additional pumping requirements which may be applicable to other materials.

The SPEC witness also pointed out that California State Department of Public Health regulations in Title 17 of the California Administrative Code governing the operations of commercial pools require that pool filters be operated at all times that such pools are available for use. The witness contends that the health rules conflict with the provisions of Paragraph 6.b. set forth above.

The witness for SPEC proposed that Paragraph 6.b. read as follows:

> 6.b. Notwithstanding the provisions of subsection B.6.a., a circulating pump may be used to circulate solar heated water from solar collector panels to any pool or to return pool water to solar collector panels.

The testimony of the SPEC witness is convincing that limitations on the sizes of pumps used to circulate solar heated water for existing residential pools are impractical and unreasonable for the reasons stated above. However, the evidence of Fafco and SPEC indicates that problems associated with pools retrofitted for solar heating would

not apply to new pools constructed on and after June 1, 1980, as the circulation systems on such pools will be designed to be compatible with solar heating. We will adopt the proposals set out in Paragraph 6.b. of Exhibit 57 to apply to new residential pools constructed after June 1, 1980, and continue the present provisions of Paragraph 6.b. for existing residential solar heated pools. In addition, we will amend Paragraph 6.c. to clarify the application of the rule to public pools, as the provisions of subparagraph 6.a. of the rule might otherwise conflict with State Department of Public Health regulations.

Case No. 9884 - Electric Priorities Proceeding

Interim Decision No. 91548 dated April 15, 1980 in Case No. 9884 established a revised priority system for voluntary and mandatory curtailment of electric service (capacity and energy shortages) and for rotating outages (capacity shortages only); and directed respondent utilities to submit action plans in order to obtain orderly curtailments as fairly as possible and to establish a uniform standard by which all users of electricity can ascertain what is required of them in the event of voluntary or mandatory curtailment or rotating outage. The decision states that the priority systems established therein must be integrated into the peak load reduction plan to be developed in this phase of OII 43 for the summer of 1980. Decision No. 91548 further states that:

> "...specific implementation of utility filed action plans would be within the province of the respective utilities because of differences in their internal operations and customer composition. These plans should be filed and revised annually and shall include (a) an action plan covering various degrees of curtailment, (b) a communication plan for internal and external notification, (c) a compliance audit and enforcement plan and (d) a criteria statement for each phase of the curtailment implementation."

* * *

"All action plans shall consist of four distinct phases:

Phase I Voluntary Curtailment
Phase II Mandatory Curtailment
Phase III Rotating Outages
Phase IV Under-frequency Load Shedding.

Phases I and II should follow the curtailment plans pursuant to Decision No. 90427 of June 19, 1979 in OII No. 43 (or subsequent plans approved in OII No. 43)."

* * *

"Further hearings will be necessary to consider the utility filings ordered herein. In addition, the staff is hereby directed to establish a procedure for monitoring the electrical supply situation and the utility actions in reducing electric use in accordance with the plans ordered herein. The staff also shall recommend for our consideration a procedure to review curtailment plans annually and to issue orders for mandatory curtailments."

The utility action plans directed in Decision No. 91548 are required to be filed on or before July 14, 1980, after which further hearings will be held in Case No. 9884 to consider such action plans.

Phase II Interruptions

As part of the electrical emergency plan submitted by utilities is a statement that interruptible customers will be interrupted as the first step in any Stage II emergency "in accordance with filed tariffs." A dispute arose as to whether Edison's customers on its Schedule TOU-8-I could be interrupted at the beginning of a Stage II alert under the current provisions of that tariff in the event that the capacity shortage exists in a system other than Edison's. Edison's witness testified that it is Edison's intention not to interrupt such customers to preserve the integrity of other utility systems.

The Commission staff disagrees with this result, and asks that Edison be directed to revise its tariff. The staff contends that the overall integrity of electrical service throughout California is as important as the integrity of the Edison system. Edison countered that if its tariff is revised as suggested by the staff, all or a part of its interruptible customers would discontinue service under Tariff TOU-8-I, but has submitted late-filed Exhibit 61 which sets forth data which indicate that the five customers receiving service under that schedule are saving over $1,400,000 per year as contrasted with the firm TOU-8 tariff rates.

The staff further contends that these five customers are receiving preferential rates and, therefore, should be interrupted when necessary to preserve the integrity of any major utility system in California. We agree and direct Edison and our staff to determine what tariff schedule or other changes are necessary to resolve this problem.

Findings of Fact

1. Decision No. 90427 in this proceeding, inter alia, authorized PG&E, Edison, and SDG&E to place into effect a summer reserve load-sharing plan and a statewide load reduction plan to be applied in connection with SMUD and LADWP to meet possible electric capacity shortages during the summer of 1979.

2. Decision No. 91124 in this proceeding found that based on reports and attendant data furnished by the five utilities, the 1979 statewide load reduction plan and reserve load-sharing plan adopted pursuant to Decision No. 90427 operated effectively. That decision also found that consideration should be given to initiation of a similar plan for application during the summer of 1980 in the event that capacity shortages may be expected in the systems of one or more major utilities.

3. Further hearings scheduled in Decision No. 91184 for the receipt of evidence have been held, at which evidence was introduced with respect to (a) the effectiveness of the augmented conservation measures instituted for the summer of 1979, (b) the estimates of electric consumption and related generating capacity available during the period May through December 1980 on the systems of the five major utilities, (c) the estimated reserve margins at the time of each monthly peak demand period, and (d) the need for the institution of measures to meet possible capacity shortages during 1980 summer months.

4. Evaluation of the augmented conservation plans instituted for the summer of 1979 indicates that substantial voluntary conservation was achieved during peak demand periods, and that public awareness of the need to conserve was good.

5. The estimated combined reserve margins for the five utilities after scheduled and forced outages, are as follows for 1980:

May	11.7 percent
June	9.5 percent
July	6.8 percent
August	6.5 percent
September	6.3 percent
October	9.8 percent

6. The lowest reserve margins of the major utilities are for PG&E (including SMUD) which are as follows:

May	3.6 percent
June	4.9 percent
July	2.9 percent
August	5.3 percent
September	1.8 percent
October	5.3 percent

7. Reserve margins below 7.0 percent are below desirable levels for the summer period, inasmuch as forced outages in excess of average or hotter than normal temperatures statewide can further reduce the reserve margins, inducing the probability of Stage I and/or Stage II situations.

8. Based on the estimates furnished in this proceeding, reserve margins for the combined systems and for PG&E will be minimally adequate for the summer months. An emergency program to mitigate the effects of any capacity shortage is required for the summer months of this year.

9. Accelerated preventive maintenance programs can reduce forced outages and improve overall reliability of electric generating plants and improve reserve margins during critical demand periods. Such plans are recommended by our staff and the staff of the Energy Commission.

10. The reserve-sharing plan jointly proposed by the five major utilities is needed to provide capacity to systems which may experience a capacity shortage during peak periods; that plan is reasonable, and it should be approved.

11. The statewide load reduction plan proposed by the utilities (Stage I and II appeals) is needed to mitigate the effects of capacity shortages expected to occur during the summer months of this year and succeeding years. The mandatory portions of that program, including those incorporated in revised tariff Rule 14.1 should commence when summer capacity margins are expected to become critical (June 1 of each year) and should expire when the summer conditions are expected to be over (October 31 of each year).

12. Electric tariff Rule 14.1, amended as indicated in the text of the preceding opinion, will be reasonable and the provisions designed to mitigate possible summer capacity shortages should remain in effect for subsequent summer periods until revised or deleted.

13. Substantial additional conservation and load reduction can be achieved on a permanent basis by voluntary actions of the customers of the five major utilities. Those utilities under our jurisdiction should be ordered to intensify their ongoing conservation plans now in effect.

14. Mr. Barton W. Shackelford, President of PG&E or another person designated by the utilities should act as the California Utility Power Systems Coordinator, whose duties would include coordination of the electric utilities' actions under the statewide peak reduction plan approved herein.

15. The California Utility Power Systems Coordinator should be directed to confirm to the Commission as soon as possible that a three-stage conservation and peak reduction plan is established and ready to implement. Stages I, II, and III should be coordinated with the Chief of this Commission's Conservation Branch and a person designated by the California Energy Commission.

16. Employers should allow employees to dress casually for the period of June 1 through October 31, 1980 whenever possible to eliminate or minimize discomfort at the higher air conditioning temperatures established herein.

Conclusions of Law

1. A summertime statewide reserve-sharing plan should be approved and a three-stage load reduction plan should be ordered, in accordance with the above findings.

2. Utilities under our jurisdiction should be ordered to intensify their ongoing conservation plans now in effect.

3. After the further hearing contemplated in Case No. 9884, we should adopt for Stage III (rotating outages) the electric priority list of customers and action plans for service outages approved for the respondent utilities based on filing made pursuant to Decision No. 91548 dated April 15, 1980 in Case No. 9884.

4. The summertime emergency statewide reserve-sharing plan and three-stage load reduction plan adopted herein should remain in effect for application during succeeding summer periods until a determination is made by this Commission that such plans are no longer necessary.

5. Respondent electric utilities should be directed to file, within 120 days after the date of this order, comprehensive preventive maintenance plans designed to reduce the occurrence of forced outages during peak demand periods.

6. Because the period in which the emergency plan is to apply is rapidly approaching, the order herein should be effective on the date of issuance.

7. OII 43 should be terminated and a new proceeding should be instituted, if required, to assess the capacity situation for the summer of 1981.

THIRD SUPPLEMENTAL ORDER

IT IS ORDERED that:

1. Pacific Gas and Electric Company (PG&E), Southern California Edison Company (Edison), and San Diego Gas & Electric Company (SDG&E) are authorized to place into effect the reserve load-sharing plan and statewide load reduction plan substantially as described in Appendix A hereof, which plan also will apply in connection with the Sacramento Municipal Utility District (SMUD) and the Los Angeles Department of Water and Power (LADWP).

2. PG&E, Edison, and SDG&E are directed to expand their energy conservation programs for 1980. Respondents are directed to file with this Commission, within thirty days after the effective date of this order, an analysis showing the conservation programs that are best suited to their individual systems and a timetable for instituting the augmented programs.

3. Within five days after the effective date of this order, each respondent electric utility shall file a modification to Tariff Rule 14.1 consistent with the modified Rule 14.1 set forth in Appendix D hereto. Such filing shall be effective as of the date of filing.

4. Barton W. Shackelford, President of PG&E, or another responsible person designated by the utilities shall serve as the California Utility Power Systems Coordinator under the plan approved in Ordering Paragraph 1 above.

5. The three-stage conservation and load reduction plan (revised Electrical Emergency Plan) shall be filed with this Commission and the Energy Commission within ten days after the effective date of this order. An original and eight copies shall be filed. Stages I, II, and III of the revised Electrical Emergency Plan should be coordinated with the Chief of this Commission's Energy Conservation Branch and to a person designated by the Energy Commission.

6. For the period of June 1 through October 31 of each year, during and after each Stage I and/or Stage II appeal the California Utility Power Systems Coordinator shall review and evaluate the effects of weather and of the conservation appeals on electrical capacity requirements and compare the results with the previously projected daily requirement for that same day without the staged appeals. The California Utility Power Systems Coordinator will provide copies of these analyses to the Chief of this Commission's Energy Conservation Branch by 9:30 a.m. on the day subsequent to any day on which a Stage I and/or Stage II appeal is made. The report shall include data for PG&E and SMUD on a combined basis and for Edison, SDG&E, and LADWP on a separately stated basis.

7. The California Utility Power Systems Coordinator is directed to furnish to the Chief of this Commission's Energy Conservation Branch and to a person designated by the Energy Commission a daily status report containing the data to be assembled in conformance with Appendix A attached hereto. Such report shall be received by the designated staff person no later than 9:30 a.m.

8. PG&E, Edison, and SDG&E are directed to file with this Commission and the California Energy Commission within one hundred twenty days after the effective date of this order, comprehensive preventive maintenance plans for electric generating facilities designed to mitigate forced outages during peak demand periods.

9. Proceedings in OII 43 are terminated.

The effective date of this order is the date hereof.

Dated MAY 6 1980, at San Francisco, California.

President

Commissioners

UTILITY PROPOSED STATEWIDE PEAK REDUCTION PLAN

California Public Utilities Commission OII 43 and
California Energy Commission Docket No. 80 EA-4

I. (Omitted)

II. Objectives

Overall:

1. Maintain reliable service to all utility customers in the State to the maximum extent possible.
2. Minimize the risk of service interruptions and the need for mandatory controls.

Specific:

1. Increase customer awareness of peak load periods.
2. Increase customer awareness of how their actions impact peak load periods and provide information as to what steps the customer needs to take to avoid service interruptions.
3. Have an orderly statewide plan that will obtain a sustained reduction in electric load during afternoon peak hours by concerted voluntary actions of all electric customers.
4. Have an orderly intensified load reduction plan that will attempt to obtain an additonal, large scale, short-term reduction in electric load during afternoon peak hours on critical days.
5. Request voluntary conservation measures from our customers that will be perceived by them as reasonable in order to maximize their response.

III. Criteria

The statewide plan should:

1. Meet the objectives stated in Section II during the summer of 1980.
2. Be simple, understandable, credible, and, to the extent possible, noncontroversial.
3. Encourage continuing efforts all summer long and prompt special efforts during critical times consistent with need.

4. Minimize consumer apathy from too early and/or too frequent alerts.
5. Coordinate with and complement existing utility conservation and load management programs.
6. Identify major peak load equipment and operations to customers.
7. Address all classes of customers and major peak and uses.
8. Be publicly supported by all utilities and government officials.
9. Be measurable, to the extent possible, as to its overall effects.
10. Be as economical and cost-effective as practicable.

IV. Proposal

The parties to this plan will implement a two-part program to reduce system loads during peak afternoon hours. The first part is a public information program identifying peak hours and measures customers can take to reduce peak loads throughout the duration of this plan. The second part is a three-stage program of extra efforts to be undertaken by Edison, SDG&E, SMUD, LADWP, and PG&E during critical periods to reduce load (see Attachment A). The estimated incremental load reductions from these measures are shown in Attachment B.

V. Specific Elements

1. Implement summer conservation and load management programs which will conserve energy and reduce peak loads throughout the duration of the plan. The utilities are now developing a statewide program (see Attachment C). If it appears probable that these efforts will not be sufficient to reduce demand and a peak day is imminent, the public will be alerted and the three-stage program described below will be followed.
2. The three-stage program to be implemented in a coordinated manner by Edison, SDG&E, LADWP, SMUD, and PG&E when the pre-Stage I program peak load reductions are insufficient is as follows:
   a. PEAK ALERT DAY (Stage I) - will be implemented statewide when any of the participating utilities anticipates a reserve capacity margin of five percent or less.

b. INTENSIFIED LOAD REDUCTION EFFORTS (Stage II) - will be implemented statewide when any of the participating utilities anticipates a reserve capacity margin of three percent or less.

c. SERVICE INTERRUPTIONS (Stage III) - will be implemented as a last resort and only by the participating deficient utilities whose reserves drop to a one and one-half percent capacity margin.

3. Sequence of Plan Implementation:

a. As soon after regulatory and other approvals are obtained, review complete program details applicable to the Sections II.1 and II.2 set forth above.

b. June-September - Continue public education programs identifying peak hours and load reduction measures (e.g., emphasize measures which reduce peak such as higher air conditioner settings, delamping, relaxed dress codes, reduced appliance use).

c. Prior to Peak Alert Day - Under circumstances where it appears a peak alert day may be imminent, all utilities commence Stage I public information bulletins.

d. PEAK ALERT DAY (Stage I) - Bulletins to news media requesting extra effort by all customers to avoid peak use for the next few days until a heat storm breaks or a forced outage is corrected.

e. If relief from Stage I is not sufficient, Stage II will be invoked statewide.

f. If relief from Stage II is not sufficient, and as a last resort, the participating deficient utility will implement Stage III.

4. Public Information Programs. The utilities will:

   a. Conduct advance, coordinated media briefings to explain the plan and seek cooperation from the media.

   b. Notify all customers and request a commitment to the statewide program using ads, appropriate governmental proclamations, news releases, press conferences, displays, etc.

   c. Continue load reduction reminders using print, radio and television ads, bill inserts and office/truck posters, billboards and placards, and displays at fairs and other summertime activities.

   d. When required, release Peak Alert Day bulletins such as public service announcements, preaddressed mailgrams, business wires, news releases, prerecorded messages, and previously prepared releases; also directly contact large users.

   e. Use public information and advertising specifically designed by each utility for its own service area.

5. Effects of the program will be measured by:

   a. Daily electric system load data reports.

   b. Market research, including:

      i. Pretesting program materials,

      ii. Determining customer responsiveness to certain measures, and,

      iii. Post-testing program materials.

OII 43 ALJ/ek

APPENDIX A
Attachment A

SUMMARY TABLE
LOAD REDUCTION MEASURES DURING CRITICAL PERIODS

	Prior to Peak Alert Day	Stage I Peak Alert Day	Stage II Intensified Load Reduction	Stage III Service Interruptions
Margins:		5%	3%	0-1½%
Air-conditioning (All classes)	78/85°**	85°/OFF (If health requirements permit) or 78/85°** (14.1)*	OFF (If health requirements permit) or 78/85°** (14.1)*	
Lighting (All Classes)				
Outside	BULLETINS TO ALERT CUSTOMERS TO INVOKE STAGE I MEASURES	OFF	OFF (14.1)*	NONINTERRUPTED CUSTOMERS CONTINUE STAGE II MEASURES
Inside (Display/new day lighting)		OFF	OFF (14.1)*	
Residential Appliances				
Dryer		OFF	OFF	
Range		OFF	OFF	
Dishwasher		OFF	OFF	
Washer		OFF	OFF	
Pool Pumping		OFF (14.1)*	OFF (14.1)*	
Major Customers (including Agricultural pumping) (Voluntary Load Reduction)		Initial Curtailment of Non-essential Uses	Maximum Curtailment of Non-essential Uses	

OFF = Off during peak hours

*PG&E, Edison, SDG&E only.
Emergency rules or ordinances as appropriate for SMUD and LADWP.

**First figure is air-conditioning temperature setting in occupied spaces, second for unoccupied spaces.

APPENDIX A
Attachment B

LOAD REDUCTION MEASURES

Estimated Incremental Reductions*

	Prior to Peak Alert Day	Stage I Peak Alert Day	Stage II Intensified Efforts
Air-Conditioning	31	178	298
Lighting	119	174	189
Appliances	43	60	82
Pools	48	25	23
Agricultural Pumping	0	18	2
Major Customers	99	348	761
Load Management	159	0	0
Nonresidential LMS	3	0	0
Incremental MW's by Stage:	502	803	1355

*Preliminary estimates for PG&E, Edison, SDG&E, LADWP, and SMUD based on assumed customer response in a time of a widely perceived statewide emergency for short periods of time.

APPENDIX A
Attachment C

PROPOSED AUGMENTED SUMMER CONSERVATION AND LOAD MANAGEMENT PROGRAM

1. Reinforce and augment conservation and peak load reduction measures in utility company facilities.
2. Seek voluntary conservation cooperation of, and provide recognition for, high visibility customers to set a continuing example for others.
3. Augment current, ongoing customer-oriented utility conservation and load management programs that reduce peak load.
4. Implement employee programs to encourage employees to reduce load and to encourage friends and neighbors to do likewise.
5. Instruct all utility customer-contact employees to remind customers to minimize peak use.
6. Enlist support from statewide chain organizations for point of purchase/service conservation and load reduction displays.
7. Identify and encourage reduction of on-peak use of the following equipment by limiting their operation during summer month peak hours and minimizing their operation on Peak Alert Days:
   a. Air-conditioners (thermostat set at 78 degrees in occupied spaces and 85 degrees in unoccupied spaces).
   b. Second refrigerators (DISCONNECT OR SCRAP).
   c. Dryers, ranges, clothes washers,dishwashers (DO NOT USE).
   d. Pool filter pumps (RESET TIME CLOCKS TO OPERATE OFF PEAK).
   e. Water use, especially sprinkler (DO NOT USE).
   f. Lighting in stores, offices, and displays (REDUCE GENERAL LIGHTING, TURN OFF DISPLAY)
   g. Janitorial service (RESCHEDULE).
   h. Agricultural pumping (MINIMIZE).
8. Accelerate programs to encourage summer delamping in daylighted areas and conversion to higher efficiency and/or lower wattage light sources.
9. Implement a voluntary load reduction program for major customers.
10. Continue rapid implementation of Phase II of the Conservation Voltage Reduction Program.
11. Accelerate pool pump load shift load management activities.
12. Enlist the support of customers in discouraging afternoon appliance use.
13. Encourage precooling of residences and commercial buildings.

Staff Proposed Augmented Natural Gas And Electric Energy Conservation and Electric Demand Reduction Activities for the Summer of 1980

NATURAL GAS CONSERVATION PROGRAMS

1. Expand "Gas Furnace Pilot Light Turn-Off and Relight Program" to reach 80% or more of all furnaces in warm climate areas this summer.

2. Discourage the simultaneous use of heating and cooling systems in closed buildings. All boilers and furnaces used for space conditioning in warm climate areas should be turned off for the summer.

3. Discourage the use of natural gas and encourage the use of solar systems, or as a minimum pool covers, to heat pools and spas.

4. Expand Utility Commercial and Industrial Natural Gas Conservation through Commercial--Industrial--Agricultural audit programs.

5. Implement an expanded water heater wrap-up and low-flow showerhead installation program for customers who have insulated their attics since April 20, 1977, as authorized by Decision No. 90308 in Case No. 10032.

6. Accelerate home energy audit programs to maximize retrofit insulation activities.

7. Promote public awareness to reduce waste of natural gas by all sectors of use.

ELECTRIC CONSERVATION PROGRAMS

1. Seek to eliminate the use of as many second refrigerators as possible, especially "Frost-Free" models.

2. Encourage trade-in of older "Frost-Free" refrigerators on purchase of new energy efficient models using 60 kilowatt-hours per month or less. Old "Frost-Free" models should be rendered inoperative and scrapped under participating utility programs.

3. Accelerate street-lighting retrofit programs now underway.

4. Accelerate Phase II studies under the "Conservation Voltage Regulation Program".

5. Accelerate the "Voltage Surveillance Program".

6. Expand Commercial-Industrial-Agricultural energy audits and provide assistance in reducing peak loads through careful energy use budgeting and planning advice.

7. Discourage the simultaneous use of heating and cooling systems in closed buildings. All boilers and furnaces used for space conditioning in warm climate areas should be turned off for the summer.

8. Accelerate home energy audit programs to maximize retrofit insulation and weatherization activities.

9. Complete "Swimming Pool Time Shift Program" to assist with staff-revised tariff Rule No. 14.1 compliance.

10. Make recommendations to all customers for reduction of lighting levels based on task requirements.

11. Provide technical assistance to customers who plan to install solar-assisted domestic water heating systems.

12. Add item 4 from Natural Gas Cons. listing above.

ELECTRIC DEMAND REDUCTION ACTIVITIES

1. Discourage afternoon use of appliances.

2. Discourage daytime use of lighting.

3. a. Encourage maximum use of clotheslines for drying clothes.
   b. Suggest that when dryers are used for clothes drying that use should be completed before 10 a.m. in the morning or begun after 7 p.m. in the evening.

4. Encourage the pre-cooling of homes and commercial buildings using cool late night or early morning outside air.

5. Encourage further pre-cooling of buildings with air conditioning by bringing in outside air between midnight and dawn using economizer cycles.

6. Recommend the installation of economizers in sealed buildings wherever not now installed.

7. Encourage the use of higher afternoon temperature settings for all air conditioned space (raise temperatures to 78°F or higher).

8. Shut off equipment as soon as possible in Commercial or Industrial operations after work is completed and as early as possible reduce building energy use after the day's work is done.

9. Urge employers to allow employees to dress casually for period of June 1 through October 31, 1980 to minimize discomfort at higher air conditioner temperatures.

10. Request that businesses reduce display lighting and eliminate it wherever sunlight can be used in lieu of artificial light from June 1 to October 31, 1980.

11. Encourage the use of attic ventilation, awnings, drapes and other window shading techniques to reduce the buildup of inside temperatures.

12. Encourage sensible cooking techniques which will not add excessive heat to dwellings.

13. Implement construction on all possible cost-effective "Conservation Voltage Regulation" Phase II distribution feeder circuit modifications during calendar year 1980.

14. File improved tariff provisions to encourage development of interruptible electric service to large commercial and industrial customers.

15. Develop incentive rates to encourage midnight until dawn heating of water for use by customers who have installed solar water heating systems.

APPENDIX C

ELECTRIC UTILITY CONSERVATION APPEALS FOR RESIDENTIAL CUSTOMERS

(Actions to be taken between 12 Noon and 6 p.m.)

STAGE I (Serious)

1. Raise air conditioning temperature settings to 85° F. in occupied rooms and turn off air conditioners in vacant rooms.

2. Defer or reduce the use of the following appliances to a minimum.
   - Clothes dryers
   - Dishwashers
   - Washing machines
   - Television sets

3. Reduce use of water to just that necessary for irrigation, cooking and personal hygiene. Saving water saves energy.

STAGE II (Urgent)

1. Turn off the following electrical loads:
   - Air conditioning equipment
   - Hot water heating (electric)
   - Clothes dryers
   - Dishwashers
   - Washing machines
   - Television sets
   - Cooking appliances
   - All indoor and outdoor lighting

2. Reduce water use to the absolute minimum, enough only for critical requirements.

APPENDIX C

ELECTRIC UTILITY CONSERVATION APPEALS FOR COMMERCIAL, INDUSTRIAL AND AGRICULTURAL CUSTOMERS

(Actions to be taken between 12 Noon and 6 p.m.)

STAGE I (Serious)

1. Raise air conditioning temperature settings to 85° F. in occupied rooms and turn off air conditioners in unoccupied rooms.

2. Defer or reduce the use of the following equipment:

   - Lighting in
     Garages
     Hallways and lobbies
     Warehouses
     Office and similar areas
     Production and work areas
   - Dispensing machines
   - Strip heaters
   - Battery chargers
   - Cafeteria equipment
   - Cleaning equipment
   - Circulating pumps
   - Boilers and auxiliaries
   - Water heaters
   - Supply and exhaust fans

3. Turn off advertising and display signs, and fountains.

STAGE II (Urgent)

1. Utility will direct interruption of all interruptible customers.

2. Commercial, industrial and agricultural customers should:

   - Put voluntary electric load curtailment plans into effect.
   - Reduce air conditioning to maximum extent practicable.
   - Reduce water use to the very minimum that will meet critical requirements and health and safety needs.
   - Reduce all lighting to the absolute minimum.

3. Reduce water pumping to minimum requirements.

4. Turn off all unnecessary equipment, motors and appliances.

5. Turn off all unnecessary lighting.

6. Be sure outdoor signs, displays and decorative lighting are off.

Rule No. 14.1

PROHIBITIONS AND CURTAILMENT PROVISIONS

A. General.

1. Application of Rule.

This rule will be in full force and effect until declared ineffective by order of the Commission. This rule supersedes and cancels all tariff and contract provisions inconsistent with its terms. (T)

2. Summer Applications.

This rule applies to all customers of respondent electric utilities. Since the intention of these revisions is to shift electric loads away from peaks during the summer peak periods, the provisions of Paragraphs B.1.b., B.3.a through g., and B.6.a. through c. for the winter on October 31. The summertime provisions of this rule as set forth in Paragraphs B.1.b., B.3.a. through g., and B.6.a. through c. automatically apply each summer commencing June 1 and ending October 31, 1980 and for similar periods in subsequent years unless revised, amended, or terminated by further order of this Commission. (N) Will be suspended. (T) (N)

B. Prohibited Uses.

1. Outdoor Advertising and Decorative Lighting.

a. No customer shall during daylight hours make, cause, or permit any use of electrical energy for lighting of billboards, signs, advertising goods or services, or to identify the providers of goods or services, displays of goods, objects, or designs symbolic of commercial enterprises, trademarks or logo, or motors or devices to rotate or move advertising signs or operate pumps or other devices in fountains which are primarily decorative, building flood-lighting, architectural or decorative lighting, or lights used for landscaping, or any similar form of lighting based upon the use of electrical energy supplied by the company.

b. Notwithstanding the provisions of subsection B.1.a. hereof, each business establishment may operate a time and temperature sign and illuminate two outdoor signs during normal business hours and until one-half (1/2) hour after closing or 10:30 p.m., whichever is later, and each billboard may be illuminated between the hours of dusk and 12:00 midnight, during any time of the year, and for two hours before daylight during the period of October 1 through May 31, local time. (C) (C)

c. Nonilluminated fountains may be operated during normal business hours, but will be turned off upon notification of the existence of an electrical supply shortage condition by the utility as determined by the California Utility Power Systems Coordinator.

2. Functional Outdoor Lighting.

a. No customer shall make, cause, or permit any use of electrical energy for the flood-lighting of outdoor commercial areas, including, but not limited to, service stations, used car lots, new car lots, automobile parking lots, or similar businesses, between the hours of sunrise and sunset.

b. Notwithstanding the provisions of subsection B.2.a. hereof, after sunset, when such activities are open, the use of electrical energy for such purposes shall be reduced to fifty percent (50%) of normal or usual levels. Furthermore, prohibited uses of electrical energy from the company are not applicable to that minimum lighting necessary for public safety, or for security, or that required by law, or required for the lighting of essential buildings utilized for police, fire protection, health, and communication purposes.

3. Comfort Heating and Cooling.

a. During business hours, no customer shall at any time make, cause, or permit any use of electrical energy in any commercial or industrial establishment to provide cooling to reduce the temperature therein below 78° F. except where other temperatures are specifically required by law, by physicians for medical reasons, and for businesses whose principal activity involves the preservation of perishable foods. Where it is not established that a net energy savings can be achieved by operating space conditioning equipment during nonbusiness hours, such equipment shall be turned off.

b. Notwithstanding the provisions of subsection B.3.a. hereof, any commercial or industrial buildings wherein the space heating and cooling control systems provide for a single temperature set point, or where such buildings are equipped with systems which heat and cool simultaneously or depend upon electric lighting as a part of the heating energy, the space conditioning systems shall be operated in a manner which minimizes electric energy use. Any commercial or industrial building may depart from the provisions of subsection B.3.a. when necessary to minimize electric energy use.

c. Electrical energy shall not be used by hotels, motels, similar guest accommodation establishments, or restaurants to heat or cool vacant guest rooms. Occupied rooms shall not be cooled below 78° F.

d. No customer shall make, cause, or permit any use of electrical energy in residences, apartments, or condominiums for cooling below 78° F. except for medical reasons or where other temperatures are required by law.

e. During periods of electrical supply shortages as determined by the California Utility Power Systems Coordinator and upon notification by the utility of the existence of a supply shortage all customers will upon direction of the utility either advance the temperature setting of air-conditioning equipment to 85°F.or turn off the air-conditioning equipment as requested by the utility (except for buildings where this action would close off all ventilation). (N)

f. No customer shall operate air-conditioning equipment in unoccupied buildings or rooms of buildings below 85°F.during normal periods and will turn off such air-conditioning equipment when notified by the utility of the existence of an electrical supply shortage as determined by the California Utility Power Systems Coordinator.

g. Notwithstanding the provisions of B.3.a. through f. above, customers may precool buildings equipped with economizers or outside air-handling equipment to as low a temperature as desired provided that only outside air is used for such cooling purposes and circulating equipment is operated for such purposes after the hour of 6:30 p.m. each night and before the hour of 10:00 a.m. each morning. Portable ventilating fans may be used at anytime regardless of space temperature. (N)

4. Outdoor Public Gatherings.

No customer shall make, cause or permit the use of electrical energy for recreational or cultural activities in excess of eighty-five percent (85%) of the normal or usual amount used by that customer for the same, or similar, activities.

5. Indoor Business Lighting.

a. No customer shall make, cause, or permit the use of electrical energy for lighting the interior of any business establishment during that period of time that said establishment is not carrying on the usual and customary activities of that business.

b. Notwithstanding the provisions of subsection B.5.a. hereof, a business establishment may provide sufficient illumination at all times to provide a minimal level or protection and security to persons and property.

c. Nothing in these subsections shall be construed to prohibit ordinary and customary maintenance and janitorial services at times other than those during which the business establishment is carrying on the usual and customary activities of that business.

d. No customer shall make, cause, or permit the use of electrical energy for window display lighting between the hours of sunrise and sunset. (N) (N)

6. Swimming Pool Pumps and Filtration Equipment.

a. Timers associated with swimming pool pumps and filtration equipment shall not be used to operate such equipment during the peak usage periods of the day from 12:00 noon to 6:00 p.m.

b. Notwithstanding the provisions of subsection B.6.a., circulating pumps equal to or less than the horsepower ratings set forth below may be used to circulate solar heated water from solar collector panels to any pool or spa and to return pool or spa water to solar collector panels: (N) (N)

(1) For pools or spas installed (new) after June 1, 1980. (N)

Surface Area Square Feet	Horsepower
520 or less	3/4
521 to 800	1
801 to 1,200	1.5
Over 1,201 - use no more than 1 horsepower per 800 square feet of pool surface area.	

(2) Pools or spas constructed prior to June 1, 1980 and retrofitted with solar systems after June 1, 1980 are exempted from the horsepower limitations set forth above during the period of June 1, 1980 through May 31, 1981.

(3) Pools equipped with solar systems installed prior to June 1, 1980 are exempted from the horsepower limitations set forth above during the period of June 1, 1980 through May 31, 1981.

(4) Whenever a motor or pump assembly larger than 3/4 horsepower is installed new or as a replacement item to circulate solar heated water to and from a pool or spa it should be of high efficiency design and rated with a 40° C. maximum or less temperature rise above ambient temperature.

(5) Subsection B.6.b.(4) is included above as an advisory provision for the period of June 1, 1980 through May 31, 1981 but may become a mandatory requirement after that date to help reduce peak electrical demand. (N)

c. Notwithstanding the provisions of subsection B.5.a., pumps that activate hydro-massage and therapeutic or any other equipment designed for the comfort of bathers may be set to operate by means of manual switches during any period when the pool is occupied. (T)

In the case of a municipal or other public pool, filtering and other equipment may be operated at any time that the pool is occupied or for filtration as may be required immediately prior to scheduled use. (N)

C. Notification.

The company shall notify the customer when it has learned of a prohibited use as defined in Section B, and, unless the customer will discontinue such use, Section D, shall apply.

D. Noncompliance.

The company shall discontinue service to a customer for noncompliance with this rule, if, after notice of at least five days, the customer has not initiated compliance with such notice. Service will be restored after the customer establishes compliance with the rule.

E. Appeals Procedure.

Requests, by customers of the company, for special relief from the mandatory orders of prohibition or curtailment of certain end uses of electricity by reason of special hardship or impossibility of compliance shall be made to the California Public Utilities Commission in the manner provided for formal complaints under the Commission's Rules of Practice and Procedure. During the period the request is pending before the Commission, the company shall not terminate service for noncompliance.

F. Liability of Company.

The company shall not, by taking action pursuant to this rule, be liable for any loss, damage, or injury, established or alleged, which may result or be claimed to result therefrom.