

Decision No. 90427 JUN 19 1979**ORIGINAL**

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)

(See Appendix A for Appearances)

INTERIM OPINION

Order Instituting Investigation No. 43 (OII-43) was issued for the purpose of assuring safe, reliable and efficient operation and adequate service of electric utilities in the event that adequate generating capacity or adequate fuel supplies become unavailable in the near future. The OII was triggered as a result of the shut down of the Rancho Seco nuclear electric generating facility near Sacramento owned by the Sacramento Municipal Utility District (SMUD). The approximately 900 megawatt Rancho Seco facility is dispatched by Pacific Gas and Electric Company (PG&E) under an integration agreement with SMUD. Consequently, the Rancho Seco facility is a major baseload component of electric generating facilities serving all of northern California. The OII states that if the shutdown were to extend beyond several weeks there could be a significant impact on the ability of California electric utilities to satisfy their customers' electrical energy requirements. The OII further states that in the absence of Rancho Seco the necessary replacement generating capacity would utilize fossil fuels, which could have the effect of straining the ability of present fuel suppliers to meet the additional demands for fuel necessary to operate the purchased electric generating capacity. If adequate generating capacity or adequate fuel supplies cannot be obtained,

electric utilities may be required to reduce service for the duration of the shortage and to mutually assist each other in dealing with shortages pursuant to the provisions of Public Utilities Code Section 2774. The availability of other measures to alleviate the impacts of possible electric generating shortages such as expanded conservation efforts, some of which were implemented in Case 9581 during the oil embargo of 1973/1974, also should be explored and updated in order to implement such measures as it appears desirable.

The investigation ordered in OII-43 included, but was not limited to, consideration of the following matters:

1. Foreseeable electric demand within the State of California for the year 1979;
2. Foreseeable supply of electric generating capacity and energy available to meet the foreseeable demand requirements within the state;
3. The potential effect upon the ability of electric utilities to meet foreseeable demand if the Rancho Seco unit and/or other electrical generating units in the State of California are shut down during the year 1979;
4. The foreseeable supply of electric generating capacity and energy available to replace that which would have been provided by electrical generating facilities that may be shut down;
5. The effect upon reserve margins of regulated electric utilities in the State of California in the event of the shutdown of any generating facility operating within the state;
6. The effect upon the ratepayers of PG&E and other regulated utilities in California resulting from the shutdown of the Rancho Seco facility or any other generating facility operating within the state.

7. Assessment of feasible contingency matters to avoid any potential electrical energy shortages including, but not limited to, the following:

- (a) Voluntary and mandatory energy conservation measures
- (b) Expanded electrical power transfers among the California utilities
- (c) Additional purchases of energy and capacity from the Pacific northwest and neighboring states.

8. Recommendations to the Governor and the Legislature of any administrative and legislative actions deemed necessary to avert an electrical energy supply emergency.

OII-43 ordered that public hearings be coordinated with similar public hearings to be conducted by the State Energy Resources Conservation and Development Commission (SERCDC), where appropriate, in conjunction with our own proceedings, in order to move as expeditiously as possible, to avoid duplication of effort, and to achieve the most effective action with respect to the possible capacity and energy shortages which ultimately will affect not only the people within PG&E and SMUD service areas but also the entire state pursuant to its authority under Section 25704 of the Public Resources Code.

SERCDC ordered in its Docket 79-NL-1 that informational hearings be instituted in conjunction with the California Public Utilities Commission (CPUC) for the following purposes:

- 1) To investigate the effect of potential shutdowns or changes in the design and operation of California's existing nuclear generating facilities on the capability of the state's investor-owned and municipally-owned utilities to adequately and reliably meet service area and statewide electrical energy requirements.
- 2) To assess possible contingency measures to avoid any potential electrical energy shortages, including but not limited to the following:

- a. Voluntary and mandatory energy conservation measures.
 - b. Expanded electrical power transfers among the California utilities.
 - c. Additional purchases of energy and capacity from the Pacific Northwest and neighboring states.
- 3) To coordinate the activities of the SERCDC and the CPUC in determining the need for, and implementing, energy emergency actions.
 - 4) To recommend to the Governor and the Legislature any administrative and legislative actions deemed necessary to avert an electrical energy supply emergency.

Joint hearings on a common record were held before President Bryson and Commissioner Dedrick of the Public Utilities Commission, and Commissioners Reed and Varanini of the SERCDC. Hearings were held in Sacramento on May 18, and San Francisco on May 21, 25 and 30. OII-43 was temporarily removed from the calendar for the purpose of considering this interim order. It is planned that further joint hearings in OII-43 and SERCDC Docket 79-NL-1 will be held for the purpose of determining the need for and the implementation of additional rules.

The evidence of the five major electric utilities (SCE, SDG&E, LADWP, SMUD, and PG&E) was presented through Barton W. Shackelford, Executive Vice President of PG&E. Included in that testimony were demand projections, available resource supplies, a recommended reserve sharing plan, and a recommended statewide load reduction plan.

SERCDC Commissioner Suzanne C. Reed testified with respect to the concerns of the two regulatory commissions which led to the issuance of the investigative orders heard on the joint record, and presented the four basic recommendations of the SERCDC to the

Public Utilities Commission to deal with capacity shortages and to make provision for a balance approach to ameliorate that shortage recognizing health and safety, environmental, and economic concerns. The staff of SERCDC presented testimony through David E. Morse, Manager of the Supply Assessment Office of that Commission, and Donald L. Watson, Chief of the Conservation Division of that Commission. Mr. Morse presented a review of the economic and environmental consequences of the resource plan strategy presented jointly by the five major electric utilities to cope with short supplies of energy and capacity for the remainder of the year with and without the operation of Rancho Seco. Mr. Watson testified in detail with respect to the four recommendations of SERCDC.

The evidence of the staff of this Commission was presented by William R. Stalder, a supervising engineer in the Electric Branch of the Utilities Division, who presented staff comments and recommendations relating to the electric power supplies problems under consideration in OII-43, and George A. Amaroli, the Chief of our Energy Conservation Branch, who presented staff recommendations concerning the need for expanded conservation actions, a recommended reserve sharing plan, and a recommended statewide load reduction plan.

The South Coast Air Quality Management District presented evidence through Eric E. Lemke, its Executive Officer, in support of its request that PG&E supply natural gas to SCE and LADWP to burn as fuel for electric generation in return for the supply of electricity furnished to PG&E by SCE and LADWP under the plan submitted by the five major utilities to share capacity in time of shortage.

Evidence was presented by Ash Agboatwala, a senior mechanical engineer for Safeway Stores, on behalf of the California Retailers Association (Retailers) concerning the effect of reducing air conditioning in supermarkets under the load reducing plans proposed by the utilities and our staff.

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California Manufacturers Association (CMA) made a motion which was joined in by Owens-Corning Fiberglas Corporation (Owens-Corning) that OII-43 be consolidated with Case No. 9884 and related proceedings and that the decision herein reflect the record in this proceeding and in Case 9884.^{1/} In its closing statement, CMA modified its request to seek issuance of a decision in Case No. 9884 concurrently with this interim decision.

ENERGY SUPPLY PROJECTIONS

Exhibit 3 presented jointly by the five major utilities contains the estimates of reserve capacity for the balance of the year for those utilities under two assumptions: Case 1 assumes Rancho Seco continues in full production, and Case 2 assumes that Rancho Seco will remain out of production for the remainder of the year after its shutdown on April 28, 1979. Similar estimates were furnished by our staff in Exhibit 6.

The evidence shows that a mechanical failure of a generator turbine was discovered after the work was completed on Rancho Seco involving safety measures indicated by the recent Three Mile Island Nuclear Power Plant failure in Pennsylvania. SMUD and PG&E are not certain when the turbine work will be completed and approval of the federal Nuclear Regulatory Commission (NRC) will be obtained which will permit the reopening of Rancho Seco.^{2/} ✓

1/ In Decision No. 86081 dated July 7, 1976, in Case No. 9884, et al. we established priorities for the curtailment of electricity applicable during periods of insufficient supply to meet demand, whether the shortfall is caused by inadequate generating capacity or inadequate fuel supply. The priority system was established under the mandate contained in Section 2771 of the Public Utilities Code. Further hearings were held in Case No. 9884 and related proceedings with respect to the means of implementing the priority system adopted in Decision No. 86081.

2/ Exhibit 1 is the order of the NRC dated May 7, 1979, in Docket No. 50-312, which directs SMUD to take several actions with respect to Rancho Seco which include specified short-term and long-term modifications of the plant, and the institution of certain safety procedures. The order provides that the operation of Rancho Seco will not be resumed until the actions ordered are complied with.

Inasmuch as it is reasonably certain that Rancho Seco will not be available during the summer peak period (June through August), the data concerning available capacity discussed hereinafter is limited to the case which assumes that Rancho Seco will not be operative for the balance of the year.

The following table is reproduced from Staff Exhibit 6. It is based on an update of the information set forth in the utilities' Exhibit 3.

TABLE 1
STATEWIDE SUMMARY OF RESERVE MARGINS WITHOUT RANCHO SECO

		:Utility:	June	: July	: August	: Sept.	:October	:November:	December:
1. Peak Demand (MW)	PG&E	14,479	15,379	15,380	13,745	11,473	11,910	12,232	
	SCE	11,289	12,189	12,194	12,434	10,458	10,108	10,178	
	SDG&E	1,813	1,913	1,993	2,013	1,732	1,769	1,863	
	LADWP	3,438	3,879	4,016	3,787	3,327	3,127	3,212	
	Total	31,019	33,360	33,583	31,979	26,990	26,914	27,485	
2. Total Capacity (MW)	PG&E	16,024	17,039	17,017	15,531	14,795	14,490	15,741	
	SCE	14,400	14,441	14,429	14,506	14,210	14,199	14,238	
	SDG&E	2,453	2,445	2,442	2,407	2,316	2,377	2,330	
	LADWP	4,592	4,450	4,526	5,262	4,917	4,651	4,834	
	Total	37,469	38,375	38,414	37,706	36,238	35,717	37,143	
3. Available Capacity After Maintenance (MW)	PG&E	15,967	16,982	16,997	15,531	13,635	14,100	15,404	
	SCE	13,475	14,091	14,254	14,331	13,146	13,222	12,609	
	SDG&E	2,331	2,361	2,358	2,387	2,156	2,136	2,267	
	LADWP	4,186	4,450	4,526	4,852	4,285	3,953	4,237	
	Total	35,959	37,884	38,135	37,101	33,222	33,411	34,517	
4. Margin After Maintenance (%)	PG&E	10.3	10.4	10.5	13.0	18.8	18.4	25.9	
	SCE	19.4	15.6	16.9	15.3	25.7	30.8	23.9	
	SDG&E	28.6	23.4	18.3	18.6	24.5	20.7	21.7	
	LADWP	21.8	14.7	12.7	28.3	28.8	26.4	31.9	
	Total	15.9	13.6	13.6	16.0	23.1	24.1	25.6	

Under the terms of its agreement with SMUD, PG&E must supply ✓
electric capacity to SMUD in the event that Rancho Seco is
inoperative.^{3/} Therefore, in addition to the loss of capacity for
its own use, PG&E must supply capacity to SMUD during the summer
peak demand period. In order to meet the summer peak demands on
its system, PG&E has made tentative agreements to purchase
additional capacity from sources within California and from other
states. The record shows that PG&E has made agreements to purchase
approximately 600 MW of capacity from sources in the Northwest
in the months of June, July and August. PG&E also has acquired,
for each of those three months, 100 MW from SDG&E and 50 MW from
Sierra Pacific Power Company, and it also has obtained 150 MW from
SCE for the months of July and August. According to the PG&E
witness, although there is additional capacity available for
purchase from the Northwest, there is only 593 MW of intertie
capacity now available to California which has not already been
committed to firm transmission service, which limits the ability
of California to receive more capacity than already has been
contracted for by PG&E. The evidence also shows that capacity has
already been reached with respect to transmission lines serving
California from Arizona and states east thereof. Therefore, if
additional capacity was available from sources in Arizona or
adjacent states, there are no available facilities for wheeling
such power. Pacific Power & Light Company has stated its willingness

3/ In the event of an outage of the type under consideration, Section 6
of the contract between SMUD and PG&E provides that PG&E will furnish
to SMUD the amount of energy needed by SMUD to continue to satisfy its
own customer loads. SMUD, in turn, will return such energy to PG&E
upon the return to service of the Rancho Seco unit. It is also necessary
for PG&E to furnish its own replacement energy for that portion of the
output of Rancho Seco that would otherwise have been excess to the
needs of SMUD and therefore purchased by PG&E. The dollar impact on
PG&E's customers will be the difference between the cost of replacement
energy for lost Rancho Seco generation and the cost of Rancho Seco
energy.

to make up to 200 MW of its reserve capacity available to California.^{4/}

The California Power Pool considers 15 percent as a reasonable reserve margin in analyzing load and resource situations. In connection with California Power Pool agreements, the first 7 percent of margin after maintenance is for spinning reserve and is not committable for sale, as that reserve is the floor for protection for service (See Appendix B). Based on his analysis of loss of load probability for PG&E for the entire year, Mr. Morse of SERCDC stated that the greatest risk to the system is the month of July because that month would require the greatest reserves, and that a 10 percent reserve margin for PG&E in July would be reasonable.

The data in Table 1 include the additional purchased capacity described above. Table 1 shows that PG&E's reserve capacity will be 10.3 percent in June, 10.4 percent in July and 10.5 percent in August. Those reserves are substantially better than first estimated because of the additional purchased capacity. The initial reserve margin estimate of less than 7 percent for PG&E is well below a safe margin in the event of either a large

^{4/} Exhibit 12, a letter to this Commission dated May 16, 1979, states as follows:

"Pacific Power & Light Company is willing to make available up to 200 megawatts of its reserve capacity available to California utilities if needed during the June through August 1979 period with the condition that the energy received during the 8 to 10 hour daily heavy load periods would be returned during off-peak periods within one week of the delivery period. We do not have a tariff rate for peaking capacity without energy so that it would be necessary to negotiate such a rate and secure FERC approval if the California utilities determine such capacity is required.

"In the event of a short-time emergency requirement, Pacific Power would do all within its ability to assist utilities in California to the extent possible. Pacific Power presently has a reciprocal emergency agreement with Pacific Gas and Electric Company filed with FERC as Pacific Power & Light Company Rate Schedule FPC No. 83.

"Please advise if you require additional information."

forced outage or high use on extremely hot summer days. A reserve margin of 10.0 percent or higher is the minimum safe margin for that utility. If any large outage occurs on the order of the largest historical combined forced outages, that margin would fall below a safe level.

The data in Table 1 also show that reserve margins for other major utilities (except LADWP) will exceed 15 percent for the months of June through August. Thus, the situation where reserve margins will fall below a safe level is more likely to occur on PG&E's system this summer than with other utilities.

The evidence clearly shows that, assuming usage of electricity will continue in the summer months of this year on the same levels as in prior years, the absence of the Rancho Seco electric generation plant results in the lowering of reserve margins for PG&E to a barely adequate minimum level, and that if extraordinary usage occurs or in the event of a large forced outage, rotating outages may occur on the PG&E system during the months of June, July and August, 1979.

RECOMMENDED ACTIONS

The recommended actions proposed herein by the utilities and the staffs of this Commission and SERCDC are based on the premise that a capacity shortage, which unlikely, may result in rotating outages this summer. The proposals deal with methods which can be instituted promptly to forestall such rotating outages from occurring; or, if such outages occur, to mitigate their effect. The proposals of the utilities and our staff are similar. Both contemplate that the utilities will pool their resources and will take concurrent action to mitigate the effect of a capacity shortage of any participating utility.

UTILITIES' PROPOSAL

The utilities have voluntarily developed a recommended reserve sharing and load deferral plan. Under the reserve sharing proposal, all California utilities would commence to share reserves under direction of a Utility Power Systems Coordinator when the

reserve margin of any utility dropped below approximately 7 percent. The SERCDC and this Commission continuously would be furnished information of the level of margin and any significant outage which would affect the state's energy supplies through the California Utility Power Systems Coordinator. The five utilities agreed that Mr. Shackelford should act as California Utility Power Systems Coordinator.

Under the utilities' plan, no utility would be expected to deplete its reserves beyond the following criteria: ✓

- (a) its largest risk and an amount needed to regulate that system,
- (b) 7 percent of its forecasted peak demand for the particular day, or
- (c) the level set forth in WSCC Minimum Operating Reliability Criteria.

The utilities' load reduction plan would be accomplished in three stages. If a utility's reserves dropped to 5 percent, Stage I of the proposed statewide load reduction plan would be implemented. At such time, a Statewide Peak Day Alert would be declared by the California Utility Power Systems Coordinator. In response, all utilities would request deferral of appliance use until the heat storm ends or until a forced outage was corrected.

If margins were to continue to deteriorate on any system to 3 percent, with prior governmental authorization, the California Utility Power Systems Coordinator would instruct the utilities to implement Stage II intensified load reduction measures including the mandatory measures set forth in proposed Rule 14.1 of the investor utilities' tariffs and in the applicable municipal ordinances governing the municipal utility districts. At the same time, interruptible customers would be curtailed in accordance with filed tariffs. Major commercial and industrial customers would be requested to implement

their voluntary load reduction plans to reduce air conditioning, power and lighting use. Agricultural customers would be requested to curtail water pumping between noon and 6:00 p.m. Residential customers would be requested to shut off appliances with the exception of life support systems and necessary refrigerators and freezers.

If a utility's margin were to reach 1.5 percent or below and the system no longer is able to supply its customer requirements with available resources, Stage III of the statewide peak reduction plan would be initiated by the deficient system. This stage calls for rotating circuit reductions on the system of the deficient utility. Time permitting, customers would be notified through news media as to when their service would be interrupted and for how long. The utilities would not implement Stage III unless Stages I and II fail to reduce demand, or because of the unexpected failure of major pieces of equipment which would make it necessary to proceed directly to Stage III. ✓

A summary table depicting the load reduction measures during critical periods and a more detailed description of the coordination plan and the functions of the California Utility Power Systems Coordinator proposed by the five major utilities are shown in Appendix B.

Appendix C contains a summary of the utilities' proposed augmented summer conservation and load management programs.

The following table shows the estimated reduction in load on systems of the five utilities resulting from the plan proposed in this proceeding:

TABLE 2
LOAD REDUCTION MEASURES
ESTIMATED INCREMENTAL REDUCTIONS*

	Augmented 1979 Load Reduction Programs (See Appendix C)	Peak Alert Day Stage I (Voluntary)	Intensified Efforts Stage II (Voluntary & Mandatory)
Air Conditioning	47	195	332
Lighting	88	286	314
Residential Appliances	1	54	68
Pools	64	32	42
Agricultural Pumping	0	19	5
Major Customers	135	394	667
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INCREMENTAL MW'S BY STAGE:	<u>335</u>	<u>980</u>	<u>1,428</u>
CUMULATIVE MW'S BY STAGE:		<u>1,215</u>	<u>2,643</u>

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

P.U.C. STAFF PROPOSAL

The staff of this Commission proposed a plan that is substantially similar in outline to that of the utilities. The staff embraced the recommendation that the utilities appoint Mr. Barton W. Shackelford as the California Utility Power Systems Coordinator. Staff Witness Amaroli recommended that additional coordination between Mr. Shackelford be accomplished by having the California

Utility Power Systems Coordinator notify him, as head of the Energy Conservation Branch immediately of any Stage I or Stage II appeal for electric energy conservation or demand reduction. In turn, Mr. Amaroli would immediately notify the Executive Director of the California Energy Commission and responsible persons at our Commission of the pending appeals. If it becomes necessary to use a planned rotating service interruption, Mr. Shackelford should notify Mr. Harold T. Sipe, Chief Electrical Engineer, of the planned action. Mr. Sipe will then immediately notify officials at this and other agencies as appropriate.

The following tabulation sets forth the staff recommendations concerning the manner in which Stage I and Stage II alerts should be implemented.

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.

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.

Stage I appeals involve voluntary curtailment by residential and commercial customers following notification by the utilities that an emergency condition exists. Stage II appeals involve a combination of voluntary and mandatory actions. The mandatory requirements will be set forth in Rule 14.1 of the utilities' tariffs or ordinances governing the municipal utilities. Curtailment of interruptible customers would be under applicable tariff provisions.

In addition to the conservation and load shedding actions which take place upon the institution of Stage I and Stage II alerts, the staff proposed augmented natural gas and electric energy conservation and electric demand reduction activities for the summer of 1979, as set forth in Exhibit 11.^{5/} The augmented electric conservation and demand reduction activities recommended by the staff are more comprehensive than those of the utilities.

The staff witness estimated that Stage I appeals would yield over 1,000 MW of peak load reduction on a statewide basis and that Stage II would yield another 2,000 MW or more of peak load reduction. The staff witness stated that with the additional capacity margins obtained through mutual cooperation and from outside California, and with vigorous conservation practices, very few Stage I and II appeals should be required this summer. However, public awareness together with sincerity of media and utility presentations are vital elements to assure that the overall recommended program and cooperative efforts will work well. On the other hand, while the staff has every expectation that rotating interruptions of service (Stage III) will not be necessary, the staff does urge stepped up conservation activities to assure that curtailments won't be necessary; with everyone's understanding and cooperation the state will have enough electricity for all essential needs this summer and blackouts will be avoided throughout California. The staff witness urged that in connection with any Stage I or Stage II appeal, the utilities suggest that employers and commercial enterprises relax normal dress codes and permit employees and patrons to wear clean and discreet casual attire during the period beginning July 1, 1979 and ending October 31, 1979 so that employee discomfort will be minimized.

^{5/} A separate order is being issued with respect to natural gas conservation and load shedding which will embrace the staff recommendations made in Exhibit 11, and such recommendations need not be considered herein.

ENERGY COMMISSION STAFF PROPOSALS

Donald L. Watson, Chief of SERCDC's Conservation Division, presented the proposals of that Commission with respect to the issues involved in this phase of OII-43. The purpose of his testimony was to describe a program of achievable conservation and load management measures which SERCDC believes will assist the utility companies to avoid costs associated with their proposed reserve sharing and load deferral plan. The SERCDC program consists of the following four conservation measures:

1. Voluntary Delamping and Lighting Substitution
2. Voluntary Cycling and Turn-Off of Residential Air Conditioners
3. Mandatory Early Shut-Down of Government Buildings
4. Voluntary Rescheduling of Residential Pool Pump Operation

VOLUNTARY DELAMPING AND LIGHTING SUBSTITUTION

About 40% of the total energy consumed by an average office building is attributable to lighting. The Energy Commission Energy Audit Program has determined that as much as 50% of this lighting is either wasted or unnecessary. The current utility delamping programs are focused in their commercial audit programs and have yet to be implemented on a wide scale. To remedy this, the witness recommended that the utilities contact, through mass mailing, all operators of office buildings, small retail stores, hotels and motels within their respective service areas to request that these customers voluntarily turn-off or delamp artificial lighting in areas where natural lighting is available. In addition, utilities would contact through mass mailings homeowners and apartment

building owners to request that these customers convert incandescent lighting systems to fluorescent lighting systems where possible, or replace burned-out incandescent lamps with lower wattage incandescent lamps.

There is no way to predict the level of voluntary customer participation in this program. The total statewide lighting that is susceptible to the kind of program recommended is as much as 1,000 MW. If the program is instituted now it would not achieve the foregoing estimated reduction in energy usage in the summer peak period of this year, as lamps would be replaced as they burned out.

VOLUNTARY CYCLING AND TURN-OFF OF
RESIDENTIAL AIR CONDITIONING SYSTEMS

The witness estimated that statewide air conditioning load is as much as 5,000 MW and possibly more. This load is the prime contributor to peak demand during summer months. Since the potential shortages this summer are related to peak capacity (rather than energy) no contingency plan makes sense unless it contains some effort to curtail total simultaneous A/C demand. The SERCDC's load management standards call for utility demonstration programs of up to 8% of A/C customers. However, compliance with these standards is not likely to achieve significant savings until at least next year, and probably not until 1981. To deal with this summer, he recommended that utilities contact, through mass mailing, each residential customer with an air conditioning system to request that their air conditioner be turned-off when they are not home, and that their air conditioner thermostat be set at 80° F when they are home.

In addition, the mass mailing for PG&E would include a red card for 1/3 of its customers, blue card for 1/3 of its customers, and white card for 1/3 of its customers. The color of the card represents the time during the three-hour daily peak period when

the utility would request that customer voluntarily turn off his air conditioner for one hour. This portion of the program would be implemented approximately 10-11 days during the summer, i.e., those days associated with the highest peak demand.

The witness developed his plan for the red, blue and white card portion of the program from a similar program implemented by the Modesto Irrigation District over a 4-month period during the drought of 1977. The witness stated that there was some deterioration of the program during the last two months, possibly due to the fact that it was implemented every day of the 4-month period. To overcome this feature, the witness recommended that the red, blue and white card program be implemented only on the high temperature days (excess 100° F). The estimated maximum achievable demand reduction for this program is 372 MW on PG&E's system.

MANDATORY EARLY SHUT-DOWN OF
GOVERNMENT BUILDINGS

State buildings contribute a lot to peak demand. The load attributed to these buildings in the SMUD service area alone is about 50 MW. Most of that load could be taken off peak by a program of early shut-down of HVAC systems, lighting, and process. Under this plan the Governor would mandate by Executive Order that state building operators, with the exception of those at emergency service facilities, shut-off chillers and pumps at 3 p.m. daily, air handling units and lighting systems at 4 p.m. daily. Employees would commence work earlier and work no later than 4 p.m. Janitorial services would be rescheduled during off peak hours. The Governor would request that federal and local government building operators undertake the same program, and that private office building managers follow government's example. The program would end on September 1, 1979.

No implementation of this plan by an order herein is requested, inasmuch as it would be accomplished by a proclamation of the Governor.

VOLUNTARY RESCHEDULING OF
RESIDENTIAL SWIMMING POOL PUMPS

To accelerate this program, SERDC recommends that utilities contact, through mass mailings and other media advertising, all residential customers with swimming pools and all pool maintenance and service companies to request that they only operate their pool filtering and circulation pumps during off-peak hours. For pool pumps with time clocks, this would require that the clocks be reset to operate during off-peak periods. For pools without time clocks, customers would reschedule their operating time to the off-peak period.

The witness estimated that over 600 MW of capacity is presently attributable to swimming pool pumps statewide. Much of this load can be placed off peak by changing the times when the pumps run (usually involves resetting the time clocks). Pool pump rescheduling programs are already being implemented by several of the utilities. The suggested program requests that this current effort be accelerated to realize maximum participation this summer. Based on voluntary participation, the witness estimated that statewide peak load reduction will amount to 188 megawatts in 1979, including the 115 MW impact resulting from the currently implemented programs.

Commissioner Reed requested that a state representative be present when decisions are made by the utilities to implement load reduction plan stages. She testified as follows in support of her request:

Any decision to implement an emergency curtailment plan may have severe disruptive and economic consequences. The appropriate state authorities, including the Governor, will require immediate access to accurate information on the severity and duration of the situation and on the specific actions being taken or planned to deal with it. To assure this vital communication and to preclude needless misunderstandings after key decisions are made, we recommend that the utility emergency plan incorporate a state official, designated by the Governor, to be present (by phone if necessary) during all decisional meetings regarding implementation of the emergency curtailment plan. This individual should have a designated set of state agency contacts who would be notified in the event any stage is initiated. These agencies should be prepared to handle public inquiries.

DISCUSSION

An extreme effort must be made to avoid rolling blackouts.^{6/} While the combination of the acquisition of additional capacity on a temporary basis and the additional voluntary conservation measures directed herein will substantially reduce the likelihood that a rolling blackout will occur, additional mandatory emergency curtailment measures are required, as set forth in revised Rule 14.1 adopted herein.

^{6/} In Decision No. 86081 in Case No. 9581, et al., at mimeo page 24 we said:

"It would appear that the only justification for sequential or rolling blackouts during a shortage is administrative ease of enforcement. It also appears to be the most inequitable and arbitrary method of curtailment since it fails to take into account the tolerance of various classes of customers and their uses and the resultant impact of such total outages on the state's welfare and economy.

"Because of the questionable effectiveness of rolling blackouts as a conservation measure and the severe disruption that would result to the state's productive sector, the measure must be used only as a last resort. We believe, however, the utilities should consider the implementation of sequential interruptions as a method to control peak demand."

It is the policy of this Commission that the regulated utilities should aggressively pursue a strong voluntary conservation program not only to reduce the risk of a summer capacity shortage, but to minimize costly supplemental fuel purchases and ultimately the construction of expensive new generation facilities. If that broad voluntary conservation program is successful it will help greatly to keep utility operating costs from rising, thus keeping utility rates down. Therefore, we will order the utilities under our jurisdiction to implement augmented and accelerated voluntary conservation measures that apply on a continuous basis, and are not limited to Stage I appeals. The measures are a combination of those proposed by the utilities, the staff of SERCDC, and our staff, as set forth in Appendix D.

With encouragement from this Commission and our staff, the utilities have been pursuing conservation efforts for several years. The urgency of this summer's capacity limits and the ever-increasing expense of constructing new capacity necessitate a substantial augmentation of utility conservation programs. It is our intent that all cost effective voluntary conservation measures be placed in effect as soon as possible. We will direct the regulated utilities to file with this Commission, within 20 days after the effective date of this interim order, an analysis showing the new and augmented conservation programs that are best suited to their systems and a detailed timetable for instituting the new and augmented programs. We will examine very critically any claims by the utilities that particular conservation programs cannot be made effective, and we will insist on prompt and vigorous implementation of all suitable programs.

The primary element for any successful curtailment procedure is the cooperation of all end users of the utility service. The effectiveness of voluntary conservation measures prior to and included in a Stage I appeal will determine to a large extent whether more stringent measures involving mandatory curtailments, and the last resort - rolling blackouts - must be instituted. Effective communication

between the utilities and their customers is needed to gain that cooperation. Stage II and III situations will be avoided only if all residential and commercial utility customers perceive the need to engage in extensive voluntary conservation efforts when a Stage I appeal is initiated. The appeal should be presented in such a manner that its serious nature is apparent. The full cooperation of all communications media is requested so that timely response can be made. The California Utility Power System Coordinator will be requested to furnish the program to be followed in reaching the public with an appeal. In order to monitor the effectiveness of any appeal, we will direct the California Utility Power System Coordinator to file with this Commission and SERCDC an analysis of the anticipated and achieved results of each appeal within one day after the appeal is made.

Specific comment is required only with respect to the proposed red, white and blue card program. That program is proposed to apply only to PG&E's system. The area served by PG&E has different service characteristics than the Modesto Irrigation District (Modesto). We take official notice that Modesto is a small homogeneous area, and that the majority of its customers may be expected to have air conditioners because of the usually hot summer weather conditions in the Valley. On the other hand, PG&E's

service area is large, and in its service area a wide range of summer weather conditions are met. Only a relatively small part of PG&E's service area has been carved out for air conditioning lifeline allowances. The peak period on Modesto's system was three hours; PG&E's peak period spreads over six hours. Therefore, the time that each customer must shut down his air conditioner was one hour on Modesto's system, and is two hours on PG&E's system. Shutting off air conditioning for a full two hour period may be resisted, particularly when the base temperature already is set at 80° F. The interim order will not adopt the proposed red, white and blue card system for this summer for PG&E's system, because that load reduction plan does not fit with the statewide plans proposed, and because the conditions encountered on PG&E's system are sufficiently different from those experienced by Modesto to require further study before implementation.

Significant voluntary load reduction was achieved by Modesto under its plan, and PG&E may also achieve significant reductions on a broader scale if the Modesto plan is redesigned to fit PG&E's different circumstances. Desiring to wring out the last possible drop of energy conservation, we direct the Chief of our Conservation Branch to explore the actual practices applied in the Modesto experiment, to develop a plan suitable to PG&E's system with cooperation of the staff of SERCDC and the utility, and to furnish his report in the next series of hearings.

EMERGENCY PLAN

At the outset, we wish to commend the regulated and municipally owned utilities for their coordination efforts, as well as the out-of-state utilities which have agreed to share some of their capacity margins with California. Since the shut down of Rancho Seco we have witnessed a great deal of cooperation between the major electric utilities in setting up emergency procedures to alleviate shortages that may occur as a result of that loss of capacity.^{7/} With the additional capacity margins to be obtained through mutual cooperation and from sources outside of California, and with vigorous conservation practices, very few Stage I or Stage II appeals should be required this summer. We would not expect that Stage III occurrences will occur, if the emergency provisions work as they are expected.

The order which follows adopts the recommended reserve sharing plan as proposed by the utilities and the recommended statewide load reduction plan substantially as proposed by our staff. Those plans are required to be instituted on an emergency basis for application through October 31, 1979 to ensure that all customers of electric utilities in California will have adequate service during the hot summer months of this year.

7/ On June 1, 1979 SCE notified this Commission that San Onofre Nuclear Generating Station, Unit 1, is scheduled to be taken out of service for one week to repair minor leakage in a steam generator and to perform maintenance work. A crack was found in the generator steam system of Unit 1 which subsequently delayed the return to service until June 18, 1979. Unit 1 has a rated capacity of 450 MW.

We will designate Mr. Shackelford as the California Utility Power Systems Coordinator with the duties described in the utilities' proposal. We will also designate a person on the staff of SERCDC and a person on the staff of this Commission who shall be advised by the California Utility Power Systems Coordinator immediately when conditions on any electric system in the state reach a point where a Stage I or Stage II appeal may be imminent. We will not request the Governor to appoint a person to be present and to take an active role in the determination whether a Stage I or Stage II appeal should be invoked, as those appeals should be contingent upon the operating conditions set forth in the plan, and should not be susceptible of being countermanded or delayed whenever the conditions deteriorate to the point that such an appeal becomes necessary.

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT

The South Coast Air Quality Management District (South Coast AQMD), through its Executive Officer, stated that SCE has indicated it potentially would supply to PG&E electric capacity in the range of 100 to 500 MW for the period June through August of this year. The position of South Coast AQMD is that the fuel requirements for additional generation in the SCE and LADWP systems for transfer to PG&E should be met by diverting to southern California natural gas that otherwise would be used for power generation purposes in the PG&E system. Use of this gas in the SCE and LADWP plants assertedly would mitigate part of the nitrogen oxides and virtually all of the sulfur oxides and particulate emissions that would occur if this power were generated by burning fuel oil. The fuel oil needed to meet the demand in the range of 100 to 500 MW is estimated to be about 300,000 to 1,600,000 barrels. The comparison of emissions for this incremental generation using low sulfur fuel oil or natural gas is as follows:

Incremental Emissions from SCE System
Total Tons for 90 Day Period

<u>Pollutant</u>	<u>Fuel Oil</u>		<u>Natural Gas</u>	
	<u>100 MW</u>	<u>500 MW</u>	<u>100 MW</u>	<u>500 MW</u>
Nitrogen Oxides	230	1170	130	630
Sulfur Oxides	250	1240	1	4
Particulates	<u>40</u>	<u>180</u>	<u>2</u>	<u>10</u>
TOTAL	520	2590	133	644

The South Coast AQMD witness testified that about 75 percent of these fuel oil emissions would occur in the South Coast Air Basin. For the 100 MW to 500 MW range, these emissions represent an estimated 2 to 11 percent increase in NO_x (an ozone precursor) and 3 to 16 percent increase in SO_x (a sulfate precursor) from power plants in the Basin. This increase assertedly is extremely undesirable since it would come during the critical season when the South Coast Air Basin experiences many ozone and sulfate episodes.

The witness stated that the 1978 California Gas Report shows a projected 1979 Priority 5 level of gas service of 28 percent for PG&E. The witness stated that this indicates the capability to divert natural gas for power plants from northern to southern California. South Coast AQMD cited as a precedent for such a transfer Case No. 10292, Decision No. 87576 (July 12, 1977), in which PG&E was ordered to sell natural gas to the Southern California Gas Company (SCG) from its El Paso Natural Gas Company purchases. This gas was to generate electricity in southern California to meet a PG&E energy deficiency during the adverse hydroelectric generation conditions caused by the drought in 1976 and 1977.

We recognize the positive environmental impacts that would result from burning natural gas instead of fuel oil for the generation of electricity in the South Coast Air Basin. However, we will not adopt South Coast AQMD's proposal on this record, because we are not certain of PG&E's ability to supply excess natural gas to SCG, nor SCG's ability to take any additional gas supplied by PG&E. We take official notice of tariff filings that provide that PG&E shall supply 75,000 Mcf of gas daily to SCG on a firm basis, and an additional 75,000 Mcf on a "best efforts" basis.^{8/} We cannot be certain that SCG has the facilities to take and effectually use any more additional natural gas from PG&E than already is being supplied to it on a firm basis. Before we issue a directive as requested by South Coast AQMD, we must give SCG and PG&E an opportunity to be heard. SCG is not a party to this proceeding. The proposal of South Coast AQMD will be considered in a separate proceeding because of the necessity that an order be issued promptly herein.

^{8/} On a "best efforts" basis, PG&E must have available excessive gas and SCG must have the ability to use or sell the additional gas, and the pipeline capacity to transport the additional gas must be available.

MOTION TO CONSOLIDATE OII-43
WITH CASE NO. 9884

CMA and General Motors Corporation (General Motors) argue that Case No. 9884 represents the best record available to the Commission on the entire subject of load reductions in shortage situations. General Motors, in its closing statement, states that CPUC Staff Exhibit 203 (in Case No. 9884), though criticized in some respects by General Motors and other participants, is generally well-designed to carry out the key electric curtailment priority principles approved by the Commission in Decision 86081, specifically:

1. To distribute the burden of curtailment equitably and evenly among the various customer classes;
2. To assure that the load first curtailed is that not directly related to maintenance of economic production and jobs; and
3. To assure maximum load reduction in the early curtailment stages so as to avoid rotating outages and their potentially devastating consequences.

General Motors and CMA therefore urge that the Commission issue a decision in Case No. 9884 at the earliest possible date. General Motors states that the decision in Case No. 9884 should also expressly supercede any interim decision in this proceeding as to all stages of curtailment, as recommended by Witness Stalder in the course of cross-examination. General Motors urges that Witness Amaroli's suggested limitation of supersedure to Stage III only should be rejected since it could lead to substantial load reductions during Stages I and II completely out of line with the Commission's Decision 86081 curtailment priority determinations.

Since concurrent action in the two cases no longer appears to be a realistic possibility, we will issue a separate decision

in Case No. 9884. Such action will assure expeditious action in both proceedings. It will also avoid confusion of the curtailment matters at issue in Case No. 9884 with the variety of issues introduced in this phase of OII-43.

We will adopt Witness Amaroletti's recommendation that the forthcoming order in Case No. 9884 should supercede this interim order only with respect to Stage III of the three-stage peak reduction plan adopted herein.

COMMISSION AUTHORITY

SDG&E raised the issue of whether the Legislature has conferred upon this Commission the authority to broadly regulate utilities in the area of capacity shortages to the extent suggested in OII-43. Specifically, SDG&E argues that Section 2774 does not confer upon this Commission authority to order an individual utility to reduce service in its service territory in the event that a capacity shortage is experienced by another utility; nor does that section confer authority upon this Commission to require mutual assistance in the event of a shortage of capacity.^{8/}

We specifically disagree with the arguments presented by SDG&E (which we do not reproduce in full in order to expedite this order). Those arguments have been presented without success in prior proceedings (See decisions in Case No. 9884, et al.). We believe that Section 2774, together with Sections 701 and 761, provide ample jurisdiction for the action taken herein. ✓

8/ 2774. In the event any electrical or gas corporation experiences any shortage of capacity or capability in the generation, production, or transmission of electricity or gas and is unable to obtain electricity or gas from any other source so that the corporation is unable to meet all demands by its customers, the commission shall, to the extent practicable, order that service be temporarily reduced by an amount that reflects the priorities established pursuant to this chapter, for the duration of the shortage. The commission, may, to the extent permitted by federal law or regulation, require electrical or gas corporations to mutually assist each other in dealing with shortages resulting from inadequate fuel supplies, and shall determine the terms, including compensation, under which such assistance shall be provided.

There appears to be no dispute that all five major California electric utilities are able to carry out Stage I of their proposed plan without any further regulatory action. The investor-owned utilities are able to carry out Stage II of the plan with an order from this Commission under existing authority.^{9/} The municipal utilities can also implement the mandatory provisions of Stage II upon authorization from their governing bodies.

There does not appear to be any disagreement that Stage III, service interruptions, can be implemented within the service area of the deficient utility without any further administrative or legislative action. The principal utility witness and his attorney also have concluded that the steps of the plan up to the inauguration of Stage III by a deficient system can be accomplished without Federal Energy Regulatory Commission (FERC) authorization. The utility representatives testified, however, that rotating outages by other than a deficient system in the initiation of Stage III might require authorization from FERC. It is our intent that at Stage III service interruptions should be limited to the utility on which the capacity shortage is being experienced.

LIMITATION OF LIABILITY

Public Utilities Code Section 2775 provides:

"No electrical or gas corporation which reduces or discontinues service in accordance with any order of the Commission issued pursuant to this Chapter shall not be liable for any damages to any person or property resulting from such reduction or discontinuance."

^{9/} Conclusion 3 of Decision No. 87109 dated March 15, 1977 in Case No. 9884, et al., states:

"3. Strict enforcement of Rule 14.1, together with pervasive voluntary cost effective electric conservation programs, voltage reductions by distribution companies and expanded mutual assistance agreements should achieve levels of electric conservation sufficient to avoid implementation of mandatory curtailments under normal conditions." (Underscoring supplied.)

SDG&E argued that, based on its belief that the legislature has not granted or conferred upon this Commission the authority to broadly regulate utilities in the area of capacity shortages, the provisions of Section 2775 would not exonerate jurisdictional electric utilities from liability for damages resulting from compliance with Commission orders issued herein. It is our belief that we do have the authority to regulate electric utilities under related Sections 2774 and 2775 and other pertinent provisions of the Public Utilities Code and that in the exercise of that authority electric utilities subject to our jurisdiction are exonerated from liability for damages incurred as a result of complying with the interim order issued herein.

FINDINGS OF FACT

1. The Rancho Seco nuclear electric generating facility near Sacramento is owned by SMUD. The approximately 900 megawatt Rancho Seco facility is dispatched by PG&E under an integration agreement with SMUD. The Rancho Seco facility is a major baseload component of electric generating facilities serving all of northern California. Rancho Seco was shut down on April 28, 1979 in order to make modifications to the nuclear facility directed by NRC in its order of May 7, 1979.

2. Following the announced shutdown of the Rancho Seco nuclear generating facility by SMUD, PG&E and SCE held press conferences at which those utilities predicted that there is a strong possibility that rolling blackouts may occur this summer because of a capacity shortage resulting from the temporary closure of Rancho Seco and other possible major unscheduled shut downs of electric plant on their systems.

3. Accepting the utilities' statements at their face value, OII-43 was issued by this Commission and the investigation in Docket No. 79-NL-1 was ordered by SERCDC. Joint hearings in those proceedings were held in San Francisco and Sacramento, at which respondents and all interested parties had opportunity to be heard.

4. The initial estimates furnished by the five major utilities in response to OII-43 of available capacity and reserves indicated that the margin of available peak capacity after scheduled maintenance expressed a percent of the monthly peak was 8.9 for June, 3.9 for July and 4.0 for August for PG&E; and 15.9 for June, 12.1 for July, and 12.1 for August for the five major utilities as a group. Those estimates were based upon the assumption that Rancho Seco would be inoperative for the balance of the year.

5. Subsequent to the initial forecast referred to in the prior finding, PG&E acquired approximately 600 MW of additional capacity principally from utilities operating in the Pacific Northwest for the months of June, July and August, 1979.

6. With the addition of the capacity referred to above, the estimated reserved margins for PG&E's system would be 10.3 percent for June, 10.4 percent for July, and 10.5 percent for August, 1979. The corresponding reserve margins for the five utilities as a whole are estimated to be 15.9 percent for June, 13.6 percent for July, and 13.6 percent for August.

7. The California Power Pool Agreement provides, and our staff accepts, a reserve margin of 15.0 percent as reasonable for the operation of the member California electrical utilities as a group. Based on his analysis of loss of load probability for PG&E, an Energy Commission witness stated that a reserve margin of 10.0 percent would be adequate for PG&E for the months of June, July and August. A 10.0 percent reserve margin is barely exceeded in the PG&E estimates set forth in the prior finding. ✓

8. Even with the additional capacity acquired by PG&E, reserve margins on that system will be minimally adequate for the summer months. There is a strong possibility that there will be a major unscheduled outage during the summer months on one of the systems of the five major utilities. If any prolonged major outage occurs, the capacity margins will fall below those estimated. An emergency program to mitigate the effects of any such capacity shortage is required for the summer months of this year. ✓

9. The five major electric utilities (SCE, SDG&E, LADWP, SMUD, and PG&E) have worked together to assess the capacity situation for the summer of 1979 and within that context presented a plan that represents in their judgement their best approach to possible capacity problems. The plan in Exhibit 3 includes sharing of reserve margins through the coordination of the California Utility Power Systems Coordinator, augmented conservation 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.

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), together with modifications proposed by our staff, is needed to mitigate the effects of capacity shortages expected to occur during the summer months of this year. That program should be adopted as an emergency measure and the mandatory portions of that program, including those incorporated in revised tariff Rule 14.1, should expire when the emergency conditions are expected to be over (October 31, 1979). The modification to Rule 14.1 recommended by the witness for the

California Retailers Association is reasonable, also should be put into effect for the period July through October 1979.

12. 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. Where feasible the three voluntary energy conservation measures recommended by the SERCDC staff should be put into effect.

13. Mr. Barton W. Shackelford, Executive Vice President of PG&E should be designated 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.

14. The California Utility Power Systems Coordinator should be directed to confirm to the Commission that contracts for the firm supply of 600 megawatts of additional capacity from the Pacific northwest have been finalized.

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 SERCDC.

CONCLUSIONS OF LAW

1. An emergency 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 and, where feasible, the three voluntary energy measures recommended by SERCDC should be put into effect.

3. We should subsequently adopt for Stage III the electric priority list of customers and usage for service interruptions to be issued by the Commission in the submitted rehearing of Decision No. 86081, Case No. 9581, 80 CPUC 157 (1976).

4. This Commission has authority under Section 2774 and related provisions of Part I of the Public Utilities Code to order electric utilities to reduce service and to share capacity in the event of an electric capacity shortage.

5. Section 2775 and other pertinent provisions of the Public Utilities Code exonerate electric utilities from damages which may result from complying with programs ordered in the interim order herein.

6. We should defer the determination of the issue of whether PG&E should be directed to obtain and supply as much additional supplies of gas as possible for use under utility boilers in Southern California with respect to the additional purchased capacity it has obtained to replace Rancho Seco and particularly with respect to the request of the South Coast Air Quality Management District.

7. In order to completely resolve issues associated with OII-43, the Commission should hold additional hearings when appropriate to resolve the following:

- (a) The adequacy of energy supply and capacity reserve margins projected for the summer of 1980 including actions being taken by California utilities to obtain firm energy supply and adequate capacity reserves.

- (b) It appears in Exhibit No. 3 that PG&E could enter the winter season with depleted fuel supply reserves. Therefore the record should be further developed with respect to action being taken to maintain an adequate fuel supply for the winter season on the PG&E system.
- (c) The economic effects on the PG&E ratepayer should be evaluated when the extraordinary costs for the summer contingency plan are more fully known.
- (d) Intertie enhancement projects appear to be a major consideration in alleviating energy and capacity supply problems. Therefore the record should be further developed as to such projects at the interstate as well as intrastate level. This is necessary in order for California utilities to reach excess capacity available in the western United States as well as to improve intrastate transferability.
- (e) Conversion of existing oil-fired generation plants to gas turbine operation would improve the environment in the large metropolitan areas of this state, and such conversions may reduce electric production costs. The economic and environmental aspects of converting existing plants to gas turbine operation and the construction of new natural gas turbine plants should be fully explored.

8. Because the period in which the emergency plan is to apply has already begun, the order herein should be effective on the date of issuance.

INTERIM 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 Finding 11 in the preceding opinion, 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 1979 filed pursuant to Ordering Paragraph 1 of Decision No. 86501 in accordance with the summary set forth in Appendix D hereto. Respondents are directed to file with this Commission, within twenty 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 E hereto. Such filing shall be made in accordance with General Order No. 96-A and shall be effective as of the date of filing.

4. Barton W. Shackelford, Executive Vice President of PG&E, shall serve as the California Utility Power Systems Coordinator under the plan approved in Ordering Paragraph 1 above.

5. The California Utility Power Systems Coordinator is directed to confirm to this Commission that contracts for the firm supply of 600 megawatts of additional capacity from the Pacific Northwest have been finalized.

6. The California Utility Power Systems Coordinator is directed to confirm to this Commission and the State Energy Commission as soon as possible that a three stage conservation and load reduction plan (revised Electrical Emergency Plan) is established and ready to implement. The 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 Conservation Branch and to a person designated by the Energy Commission.

7. 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 and to a person to be designated by the California Energy Commission 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 be presented on a simplified format developed in cooperation with our Energy Conservation Branch and will include data for PG&E and SMUD on a combined basis and for Edison, SDG&E and LADWP on a separately stated basis.

8. 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 paragraphs 4 and 5 of Appendix B attached hereto. Such report shall be received by the designated staff person no later than 9:30 a.m.

9. Further hearings shall be scheduled in OII No. 43 for the purposes specified in the preceding opinion at a time and place time and place to be determined.

The effective date of this order is the date hereof.

Dated at San Francisco, California, this 19th day of JUNE, 1979.

John E. Byrne
President
Veronica L. Sturgeon
Charles O. Powell
Clair T. Dearing
James W. James
Commissioners

APPENDIX A
APPEARANCES

Respondents

Malcolm H. Furbush, Robert Ohlbach and Dan G. Lubbock,
attorneys at law, for Pacific Gas and Electric Company;

Thomas A. Page, Gordon Pearce and Vincent Master,
attorneys at law, for San Diego Gas & Electric Company;

John R. Bury, David N. Barry, and William E. Marx,
attorneys at law, for Southern California Edison Company;

Interested Parties

David L. Yye, attorney at law, for Los Angeles
Department of Water and Power;

Ken Mellor, William K. Latham, Dean H. Park, and
Phillip Hollick, for the Sacramento Municipal Utility District;

Robert C. Burt, for California Manufacturers Association;

Glen J. Sullivan, attorney at law, for the California
Farm Bureau Federation;

Thomas S. Knox, attorney at law, for the California
Retailers Association;

Eric E. Lemke, for the South Coast Air Quality
Management District;

Susan L. Paulus, attorney at law, for Owens-Corning
Fiberglas Corp.;

Downey, Brand, Seymour & Rohwer, by Phillip A. Stohr,
attorney at law, for General Motors Corporation.

California Energy Commission

John D. Chandley, attorney at law.

California Public Utilities Commission

Rufus G. Thayer, Jr., attorney at law, George Amaroli,
and William Stalder.

SUMMARY TABLE

LOAD REDUCTION MEASURES DURING CRITICAL PERIODS
AS PROPOSED BY RESPONDENT UTILITIES

Measures	Prior to Peak Alert Day	Stage I Peak Alert Day	Stage II Intensified Load Reduction	Stage III Service Interruptions
Margins:		5%	3%	0-14*
AIR CONDITIONING (All classes)		80/85 ^o **	OFF (If health requirements permit) or 80/85 ^o ** (14.1)*	
LIGHTING (All classes) Outside		OFF	OFF (14.1)*	
Inside (display/new day lighting)		OFF	OFF (14.1)*	
RESIDENTIAL APPLIANCES	BULLETINS TO ALERT CUSTOMERS TO INVOKE STAGE I MEASURES	OFF	OFF	NON-INTERRUPTED CUSTOMERS CONTINUE STAGE II MEASURES
Dryer		OFF	OFF	
Range		OFF	OFF	
Washer		OFF	OFF	
Dishwasher		OFF	OFF	
POOL PUMPING		OFF (14.1)*	OFF (14.1)*	
AGRICULTURAL PUMPING		OFF	OFF	
MAJOR CUSTOMERS (Voluntary Load Reduction)		INITIAL CURTAILMENT OF NON- ESSENTIAL USES	MAXIMUM CURTAILMENT OF NON- ESSENTIAL USES	

OFF - Off during peak hours

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

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

Respondent Utilities' Proposed
Operating Coordination
Major California Electric Systems
Summer 1979

1. Broad guidelines for dealing with a capacity emergency in an interconnected system network are contained in NAPSIC Guide 9 as revised September 20, 1978, and WSCC Minimum Operating Reliability Criteria.
2. Beginning June 1 and extending through September 30, California's major electric utilities will intensify the level of coordination in the operation of their electric systems. The objective is to maximize the use of transmission transfer capability and the availability of resources both within and external to California. This is being done to overcome the unacceptably low reserve margin forecasted for the PG&E control area during the 1979 heavy summer demand period.
3. Starting June 1, the PG&E Electric System Dispatcher will ascertain each midnight from the dispatchers of the other major California electric utilities each system's load and resource forecast for the following day. Data shall include: (a) time of the expected peak demand, (b) the forecasted peak demand in MW, (c) the MW and percent spinning reserve, and (d) the MW and percent total reserve. Any control area anticipating unusually high temperatures will so indicate.
4. The data gathered in Item 3 will be shared among the systems daily not later than 0800 hours and it will also be reported to the California Utility Power Systems Coordinator.

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5. Any system experiencing a forced outage of 200 MW or an accumulated curtailment of 200 MW in any given day which will affect that system's margin at the time of the peak on that or successive days will report same to the California Utility Power Systems Coordinator.
6. California electric utilities agree that after a system's reserve margin has dropped to 7% or the level set forth in the WSCC Minimum Operating Reliability Criteria and that system is taking all reasonable measures to improve its margin without success, the other California systems will make available their uncommitted reserves to the deficient system. To the extent that total reserves in the state will allow, no system will be expected to deplete its reserves to support another system beyond one of the following criteria: (a) its largest risk and an amount needed to regulate that system, (b) 7% of its forecasted peak demand for that day, or (c) the level set forth in the WSCC Minimum Operating Reliability Criteria.
7. Subject to Item 6, when the overall reserve in California is below 10% and the system with least margin expects its reserve to drop below 5%, California's Utility Power Systems Coordinator will notify the electric system dispatchers of all of California's electric utilities to initiate augmented conservation activities in accordance with the stages set forth below.
8. When a system's margin is at the 5% level, Stage I of the statewide emergency plan will be initiated. Notification will be given to all parties and the State's regulatory agencies by the California Utility Power Systems Coordinator.

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9. When a system's margin is at the 3% level, Stage II of the statewide emergency plan will be initiated by the California Utility Power Systems Coordinator. Notification will also be given to the State's regulatory agencies.
10. When a system's margin is in the range of zero to 1.5% and it is apparent that the customer demand has not yet peaked for the day and it is also apparent that the system will no longer be able to supply its customer requirements with available resources, State III of the statewide emergency plan will be initiated by the deficient system.
11. The California Utility Power Systems Coordinator will coordinate return to normal status through the electric system dispatchers of the systems.

APPENDIX C

UTILITIES'
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 cooperation of, and provide recognition for, high visibility and/or high use customers to set a continuing example for others.
3. Augment current ongoing 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 state-wise chain organizations for point of purchase/service displays.
7. Identify and encourage reduction of on-peak use of the following equipment by limiting operation during summer month peak hours and minimizing operation on Peak Alert Days -
 - A) Air conditioning (thermostat set at 80° in occupied spaces and 85° in unoccupied spaces),
 - B) Second refrigerators,
 - C) Dryers, ranges, clothes washers, dishwashers,
 - D) Pool filter pumps,
 - E) Water use, especially sprinklers,
 - F) Lighting in stores, offices and displays,
 - G) Reschedule janitorial service,
 - H) Agricultural pumping.
8. Implement summer delamping in day-lighted areas and conversion to higher efficiency and/or lower wattage light source programs.
9. Implement a voluntary load reduction program for major customers.

APPROVED AUGMENTED SUMMER CONSERVATION
AND LOAD MANAGEMENT PROGRAM

1. Reinforce and augment conservation and peak load reduction measures in utility company facilities.
2. Seek voluntary cooperation of, and provide recognition for, high visibility and/or high use customers to set a continuing example for others.
3. Augment current ongoing 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.
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 - F) Lighting in stores, offices and displays,
 - G) Reschedule janitorial service,
 - H) Agricultural pumping.
8. Implement summer delamping in day-lighted areas and conversion to higher efficiency and/or lower wattage light source programs.
9. Implement a voluntary load reduction program for major customers. Expand Commercial-Industrial-Agricultural energy audits and provide assistance in reducing peak loads through careful energy use budgeting and planning advice.

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10. Accelerate street-lighting retrofit programs now underway.
11. Accelerate Phase II studies under the "Conservation Voltage Regulation Program".
12. Accelerate the "Voltage Surveillance Program".
13. Accelerate home energy audit programs to maximize retrofit insulation and weatherization activities.
14. Complete "Swimming Pool Time Shift Program" to assist with revised tariff Rule No. 14.1 compliance.
 - (a) Pool pumps with time clocks should be reset to operate during off-peak periods.
15. Discourage afternoon use of appliances.
 - (a) Residential customers should be requested to turn off air conditioners when not at home.
 - (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, and encourage maximum use of clothes lines for drying clothes.
 - (c) Encourage sensible cooking techniques which will not add excessive heat to dwellings.
16. Discourage daytime use of lighting, including the following measures:
 - (a) Turn-off lights in areas where daylighting is available,
 - (b) Replace incandescents with more efficient lighting systems,
 - (c) Replace burned-out incandescent lamps with lower wattage incandescent lamps,
 - (d) Make recommendations to all customers for reduction of lighting levels based on task requirements.

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17. Encourage the pre-cooling of homes and commercial buildings using cool late night or early morning outside air.
18. Encourage further pre-cooling of buildings with air conditioning by bringing in outside air between midnight and dawn using economizer cycles.
19. 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 days work is done.
20. Urge employers to allow employees to dress casually for period of July 1 through October 31, 1979 to minimize discomfort at higher air conditioner temperatures.
21. Request that businesses reduce display lighting and eliminate it wherever sunlight can be used in lieu of artificial light from July 1 to October 31, 1979. ✓
22. Encourage the use of attic ventilation, awnings, drapes and other window shading techniques to reduce the buildup of inside temperatures.

Rule No. 14.1

PROHIBITIONS AND CURTAILMENT PROVISIONS

A. General.

1. Historical Background.

This rule has been ordered effective by the Commission as an emergency measure pursuant to Decisions Nos. 82305, 82358, and 82881. It 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. Paragraph B.1., herein, was temporarily suspended per Decision No. 83225, effective July 30, 1974. (T)

2. Summer Applications for 1979

If electric capacity shortages occur during the summer of 1979, it will be necessary to shift loads away from the peak which usually occurs between the hours of 12:00 noon and 6:00 p.m. Therefore, the Commission by Decision No. 90427 reinstated Paragraph B.1.b. and added Paragraphs B.3.e., f, g, and h, for all respondent electric utilities and B.6.b. for respondent electric utilities which previously did not include that paragraph in this rule. Since the intention of these revisions is to shift electric loads away from peaks during the summer of 1979 the provisions reinstated will again be suspended and provisions modified by this revision will terminate on October 31, 1979. Paragraph B.6.b. added by this order will remain effective on a permanent basis unless changed, terminated or suspended by further action of the Commission. Decision No. 90427 also revises (N)

the lower temperature limit for air conditioning to 80° F during all normal periods and to 85° F during specific periods of electric capacity shortages as determined by California Utility Power Systems Coordinator. During any such capacity shortages the utility will further require customers to reduce or eliminate the use of non-illuminated fountains, functional outdoor and indoor lighting as provided by Paragraphs B.1.c., and B.5.b. (revised) respectively.

(N)

(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 floodlighting, 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. (C)
- b. Notwithstanding the provisions of subsection B.1.a. hereof, each business establishment may operate its time and temperature, window and display lighting, and illuminate two outdoor signs during normal business hours and until one-half (½) hour after closing or 10:30 p.m., whichever is later, and each billboard may be illuminated between the hours of sunset and 10:30 p.m. local time, and two hours before daylight during the months of October through March.

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c. Non-illuminated 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.

(N)

(N)

2. Functional Outdoor Lighting.

- a. No customer shall make, cause, or permit any use of electrical energy for the floodlighting 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 communications purposes.

(C)

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 heat to raise the temperature therein above 68° F, nor to provide cooling to reduce the temperature therein below 80° F, except where

(C)

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other temperatures are specifically required by law. 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)
- c. Electrical energy shall not be used by hotels, motels, similar guest accommodation establishments, or restaurants to heat or cool vacant guest rooms. The 68° F temperatures in occupied rooms shall be reduced to 55° F during sleeping hours, except where other temperatures are required by law. Occupied rooms shall not be cooled below 80° F. (C)
- d. No customer shall make, cause, or permit any use of electrical energy for the heating of residences, apartments, or condominiums above 68° F during the active hours of the day and 55° F during the sleeping hours of the day or for cooling them below 80° F except for medical reasons or where other temperatures are required by law. (C)

- 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 B.3.(a) through (f) above, customers may pre-cool 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 10:00 p.m. each night and before the hour of 10:00 a.m. each morning. (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. No customer shall make, cause or permit the use of electrical energy for window display lighting between the hours of sunrise and sunset.
- c. Notwithstanding the provisions of subsection B.5.a hereof, a business establishment may provide sufficient illumination at all times to provide a minimal level of protection and security to persons and property.
- d. 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.

(N)

(N)

6. Swimming Pool Timers.

- 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., a circulating pump not exceeding three quarters 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.

(N)

(N)

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- c. Notwithstanding the provisions of subsection B.6.b., pumps that activate hydro-massage and therapeutic or 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. (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. (N)
- D. Noncompliance. The Company shall discontinue service to a customer for noncompliance with this rule, if, after notice of at least 5 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.