

Decision No. 91548 APR 15 1980**ORIGINAL**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's own motion into the establishing of priorities among the types or categories of customers of every electrical corporation and every gas corporation in the State of California and among the uses of electricity or gas by such customers.

Case No. 9884  
 (Filed March 11, 1975)

(For appearances see Decisions Nos. 86081 and 87510.)

INTERIM OPINION

Background

After 22 days of hearing, this Commission in Decision No. 86081 dated July 7, 1976, (80 CPUC 157) created five classifications of electric priorities<sup>1/</sup> for the curtailment of electricity during periods of insufficient supply to meet demand, whether the shortfall was caused by inadequate generating capacity or inadequate fuel supply.<sup>2/</sup> In that decision we ordered respondent electric utilities to file updated emergency plans for implementing sequential interruptions of service within 180 days from the effective date of the order and ordered that further hearings be held to implement the priorities adopted.

Owens-Corning Fiberglass Corporation (Owens-Corning), California Manufacturers Association (CMA), Southern California Gas Company (SoCal), the Swimming Pool Industry Energy Codes

1/ Existing priorities, which appear in Appendix A, are modified by the decision herein.

2/ The California Legislature enacted Chapter 4.5 Electric and Gas Corporations in 1976 containing Sections 2771-2775 of the Public Utilities Code. Those sections required the Commission to establish priorities (1) among the categories of customers of every electrical corporation and (2) among the uses of electricity by such customers.

and Legislative Council (SPEC), Teledyne Laars (Laars), and the University of California (University) (petitioners) each filed petitions for reconsideration or modification of Decision No. 86081.

Owens-Corning and CMA petitioned that Priority I be modified to include service to industrial safety machinery during periods of capacity shortages so that operational personnel would be protected from possible injury where there is curtailment to industrial operations and notice of curtailment was insufficient to shut down operations safely. On the other hand, these parties argued that curtailment resulting from fuel shortages could be foreseen, thus allowing an orderly reduction in electrical usage without sudden danger to operating personnel and equipment.

CMA also petitioned for modification of Priority 2 (b) and Priority 2 (c) relating to agricultural, commercial, and industrial uses so that the potential loss of crops and irreparable damage to manufacturing equipment would be lessened.

SoCal requests Priority I classification to operate control devices and intermittent ignition devices on gas appliances, arguing that since residential natural gas use is given that priority in Decision No. 85189,<sup>3/</sup> to have electrically operated ignition devices in a lower electric priority could cause serious problems throughout the residential community.

SPEC and Laars petitioned for further hearings to introduce evidence of alleged potential danger to the public health and safety if electric service to swimming pool filter equipment, currently assigned Priority 4, is not assigned a higher priority.

On March 15, 1977, in Decision No. 87109 we determined that the petitions for modification referred to above should be included for further record development during the March 28, 1977 hearing which had been set to develop plans to implement the electric priorities. We also determined that each petitioner should have the

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<sup>3/</sup> Decision No. 85189 established priorities for the curtailment of natural gas based on end-use.

burden of proving the feasibility of implementing the proposed electrical use during a period of mandatory curtailment.

The implementation phase of hearing included testimony and exhibits from Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), SoCal, Southern California Edison Company (Edison), California Electric Sign Association (CESA), SPEC, CMA, Owens-Corning, University, California Hotel & Motel Association (Hotel), California Ammonia Producers, and the Commission staff. Early in the implementation phase, the staff concluded that, in their present form, Decision No. 86081 priorities were incapable of implementation.

Accordingly, the staff on August 27, 1977 filed a petition for modification and clarification of Decision No. 86081. In its petition the staff stated:

"It has become increasingly apparent in the hearings on implementation of the priority system adopted in Decision No. 86081 that there are technical and practical problems in effectuating the adopted priority system. In addition, the testimony and exhibits introduced by parties in the implementation phase of the hearings indicate various and inconsistent interpretations of the priority system."

With the staff acknowledging that the priorities established in Decision No. 86081 were incapable of implementation and the introduction of its proposed revision of priorities, the impetus of the hearing shifted from the various proposals for implementing the present priorities to the staff's proposed revision. This current phase of Case No. 9884 was submitted on March 15, 1978.

The staff proposal was introduced by Senior Utilities Engineer William Stalder as Exhibit 203. The staff proposed two priority systems, one for a mandatory curtailment plan (MC) and the other for rotating outages (RO). He emphasized that the two systems were distinguishable in that the customer has positive control during the MC program while the utility has positive control during an RO outage.

Under the staff proposal, a capacity shortage and an energy shortage would be treated similarly in the initial stages, calling initially for Voluntary Curtailment (VC) and then MC. Beyond MC, the situation would be treated differently, with RO being initiated for a capacity shortage, while a penalty excess use tariff would be used in the energy shortage situation.<sup>4/</sup>

The specifics of the staff proposal as contained in Exhibit 203, are shown in Appendix B.

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PROPOSED EXCESS USE PENALTY TARIFF

(1) Surcharge Tariff Table

Given a target consumption,  $C_T$ , the penalty surcharge would be computed as follows and added to the charge normally incurred through the tariff schedule governing the customer's service. Let  $C =$  consumption.

$0.0 < C/C_T \leq 1.0$	No surcharge
$1.0 < C/C_T \leq 1.2$	Add 30% for incremental excess consumption in this interval
$1.2 < C/C_T \leq 1.4$	Add 60% for incremental excess consumption in this interval
$1.4 < C/C_T \leq 1.6$	Add 90% for incremental excess consumption in this interval
$1.6 < C/C_T \leq 1.8$	Add 120% for incremental excess consumption in this interval
$1.8 < C/C_T \leq 2.0$	Add 150% for incremental excess consumption in this interval
$2.0 < C/C_T$	Add 200% for incremental excess consumption in this interval

These graduated rates would apply to that portion of excess consumption falling into each interval. The maximum incremental penalty would be 200 percent, with that last kWh costing three times its normal price. By experience if it became obvious that the surcharge were too small or too large, it could then be altered as needed.

(Continued on next page)

The staff proposes that every utility file within the general framework of the foregoing its curtailment plan encompassing capacity shortage and energy shortage situations. Under this proposal, the specific implementation would be left to the individual utility since the power systems, the customer mix, the distribution system, and internal operations differ from utility to utility. It is suggested that the curtailment plan be updated annually and include (1) an action plan covering various degrees of curtailment, (2) a communication plan for internal and external notification, (3) a compliance audit and an enforcement plan, and (4) a criteria statement for each stage of the curtailment implementation. Suggested contents of the curtailment plan are:

1. Action Plan

All action plans would consist of four distinct stages representing: Stage I - Voluntary Curtailment (VC); Stage II - Mandatory Curtailment (MC); Stage III - Rotating Outages (RO); Stage IV - Automatic Under-frequency Load Shedding. The utility could prepare either separate or consolidated plans for capacity and energy shortages.

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4/ (Continued)

(2) Service Reconnection Penalty Tariff

This would be implemented after the second billing period of consumption in excess of 30 percent over the target consumption. The customer would be notified with the first bill in excess of 30 percent that disconnection would result if subsequent period's consumption exceeded the 30 percent excess level. The reconnection charge would be the same as the then existing reconnection charge for the first offense during an energy crisis.

Disconnections after the first would carry a reconnection fee of twice the then existing charge.

As in section a. above, actual circumstances could indicate that a different charge would be appropriate, which would then be revised to suit.

Under VC a Commission order would not be necessary. For the voluntary stage, curtailment is only recommended for comfort and convenience uses (Appendix B) during an energy shortage. Curtailment through the business uses would be considered in a capacity shortage if necessary.

Under MC a Commission order would be required. In case of a capacity or energy shortage, a request for curtailment or elimination of electricity through business uses would be submitted to the Commission.

Each utility would file an RO plan which conforms to the established RO system of priorities to the extent practicable. ROs would be contemplated primarily for use during a capacity shortage. Each utility would submit to the Commission its criteria to determine when the RO plan would be implemented. Whereas a Commission order would be required for implementation of ROs during an energy shortage, such authority would not be needed during a capacity shortage if operationally required.

2. Communication Plan

While the form of the communication plan would be left to the utility, it is recommended that it indicate the method of public notification and the lines of responsibility within the utility for disseminating information on curtailment.

3. Compliance Audit and Enforcement Plan

With a capacity shortage, audit of a request for load reduction would be difficult. Audit and enforcement are technically and economically feasible only for an energy shortage extending over one complete billing period. A Commission order authorizing use of penalty tariffs would be issued. Enforcement through assessment of surcharges and service disconnection would not be contemplated in MC until it became apparent that the required reduction in energy consumption was not being achieved.

Money collected from excess use tariffs would be kept in a separate balancing account to be disposed of by order of the Commission.

4. Criteria Statement

The utility would define the criteria for determining when the various stages of implementation of curtailment would be activated as follows:

Stages I, II, III during capacity shortages:

Include minimum reserve margin in megawatts or percent of system load as a limit below which the next stage would be activated.

Stages I, II during energy shortage:

Include minimum fuel shortage related to incoming fuel supply and fuel consumption.

5. Customer Curtailment Plan

Business and industrial concerns would be encouraged to prepare electric curtailment plans for their own internal guidance. In a capacity shortage situation, the customer could utilize:

- (a) Condition A curtailment - that load which could be dropped or reduced without seriously affecting plant or building operation.
- (b) Condition B Curtailment - that load which could be dropped or reduced while keeping the plant in a protected standby condition.

Edison

Edison supports some of the staff recommendations but feels that because of its system (and concomitant administrative problem), it would have difficulty implementing any curtailment plan to achieve a percentage reduction in use of electricity based on an end-use concept whether related to a capacity shortage or a fuel shortage. Further, in order to achieve an effective mandatory percentage reduction, Edison states it would require a minimum of two to three months to effectively alert its customers.

Edison requests that its Bulletin No. 20<sup>5/</sup> be adopted as the RO plan for Edison's system, alleging that Bulletin No. 20 complies with the "essential customer" category as proposed by the staff in Exhibit 203. Edison further contends that such bulletin comports with the intent of the staff to protect essential customers during any RO condition, while providing a more favorable, equitable, and meaningful RO plan than does the staff's plan.

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<sup>5/</sup> See Appendix C.



PG&E

PG&E states that it supports the staff's approach to the development of electric curtailment plans whereby the Commission establishes a general framework and guidelines, but feels that specific details for implementation should be left to the judgment of the utilities because of design differences, the customer mix and distribution, and the internal organization of each utility.

PG&E states that the staff's proposal for an MC stage, with a three-level priority system based on electric end-use, is compatible with PG&E's existing curtailment plan; that PG&E cannot achieve sufficient load reduction under the staff's proposal for implementation of ROs; that from the record it is not possible for PG&E to allocate 80 percent of its load outside the essential customer category and achieve useful levels of load reduction; that Sections 2771-2775 of the Public Utilities Code do not require priority classes be included in a RO plan; and in any plan adopted ROs not be limited to one hour as proposed by the California Retailers' Association.

Finally, PG&E alleges that the integrity of its electric power supply system is at stake during a capacity or energy shortage, and that the record clearly establishes that utilities cannot implement either the present priority scheme or that proposed by the staff during an RO and still achieve a meaningful load reduction. Therefore, it argues that this part of the staff proposal should be rejected.

Interested Parties

SPEC

To support its position that swimming pools and allied equipment should be accorded the highest possible electric priority because of the potential dangers to the public health and safety if the circulation and filtration systems are not operated, SPEC presented a professor of infectious and tropical diseases, an engineer, a registered sanitarian, a swimming pool maintenance contractor, an environmental health and safety technologist, and SPEC's executive vice president.

In addition to the alleged health hazards, these witnesses each stated that swimming pools required only a small amount of electricity and that filtration can be done in offpeak hours.

With the introduction of Exhibit 203 and the staff's recommended elevation of residential usage to "Essential Use" for MC only, SPEC endorsed the staff proposal.

General Motors (GM)

GM states that the staff proposal is a well thought out and commendable effort designed to grapple with the challenge of future electric curtailments. Notwithstanding its praise for the staff plan, GM takes exception to the elevating of certain residential uses to the "Essential Use" level, combining existing P-4 and P-5 priorities into a single comfort and convenience priority, the lack of provision for a stand-by generating capacity requirement, and the failure to take into account the varying degrees of energy conservation already achieved by certain customer classes.

With respect to existing utility curtailment plans, GM states that there has been a long-standing disproportionate reliance on the industrial class to achieve necessary load reduction, that the administrative convenience cited as the reason for this practice is no longer valid, and that any administrative difficulties can be overcome with the revamping of the utilities' traditional procedures.

CMA

CMA urges that the revised staff plan be adopted stating that with modifications, it provides a workable curtailment scheme that can be fully implemented by the utilities. CMA further states that the revised staff plan addresses the concerns raised in its petition for reconsideration and provides, in general, a reasonable solution to those concerns.

CMA suggests, however, that the staff plan be modified to provide for mandatory curtailment of specific comfort and convenience end-uses as a means of avoiding RO's and that RO should be applied to predominantly comfort and convenience circuits.

Finally, CMA objects to Paragraph C of Priority 2<sup>6/</sup> arguing that all commercial and industrial usage relating to jobs and the economy should receive equal treatment, i.e., all uses should be curtailed on an equal percentage basis which would permit the application of uniform reductions and thereby achieve the necessary energy savings.

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6/ That paragraph provides:

"(c) Commercial/industrial customer for those other than in Priority 1 to the extent that their efficient usage of electricity is essential in the production or marketing of items of widespread use and that a substantial reduction in electrical usage would cause an unemployment crisis in the locality in which the electrical service is rendered; or that a prolonged shutdown of their equipment using electricity would cause major irreparable damage to that equipment or its product." ✓

California State Outdoor Advertising Association (CSOAA)

CSOAA did not actively participate in this phase of the proceeding but filed a brief stating its position. It advocates that the Commission recognize that the record made in this phase of Case No. 9884 does not justify adoption of a definitive electric end-use priorities plan; that it adopt the staff's revised curtailment plan, but that it be made clear it is adopted in principle and subject to implementation through the utilities' specific curtailment plans; that the adoption be accomplished with due notice to affected consumers and a full opportunity to establish the facts and circumstances of the consumers' usage which will govern its priority status; and that the staff appeal procedure be established to provide a normal and expedited alternative for consumers adversely affected by the curtailment plan of any utility.

Owens-Corning

In supporting the staff recommendation, Owens-Corning reiterated its position relative to the need for electricity to protect operating personnel and equipment from possible injury during periods of curtailment without sufficient notice. It urges that continuous process users of electricity be afforded the priority deemed necessary to protect public health and safety while minimizing any possible adverse impact on California industry and employment between capacity-related and energy-related shortages. It argues that such a distinction is needed because the standby facilities requirement cannot achieve the 100 percent reliability necessary to assure protection of equipment and personnel.

University

University urges that the Commission continue to oppose RO as arbitrary and inequitable and that they be instituted only in the most extreme circumstances after all less erroneous methods have failed. It is also urged that the staff plan be adopted as it pertains to an RO plan allowing single circuit customers to self-regulate percentage reductions but that it should be modified: (1) in MC; "Business Use" should include the general business of institutions to eliminate any possible ambiguity; (2) in RO; the "Economic Damage" criteria should be expanded beyond individual economic impact to include damage to the general public needs and benefits; and (3) in "Essential Uses" in MC and "Essential Customers" in RO, a provision should be included setting forth the minimum necessary electrical energy required to sustain all life forms, where the life form so supported directly contributes to the needs of the general public welfare, health, or safety.

On June 6, 1977, the Regents of University petitioned for clarification and modification of Decision No. 86081 as it pertains to institutional and governmental service organizations and the method of curtailment to be employed by the electrical utilities. It seeks equal treatment with commercial activities for all campus activities, arguing that its operations are analogous to any other business entity but that its products are intangible, i.e., education and research.

University supports the staff's recommendation in Exhibit 203 as it pertains to Essential Category J for RO which allows single circuit customers to self-regulate percentage reductions. It also recommends the inclusion of institutional use under the staff's MC plans and expansion of the individual economic criteria of the RO plan to include impacts upon public needs and benefits in the medical, agricultural, and technical fields.

### Discussion

The petitions for rehearing illustrate the inconsistent competing requirements for electricity at priority levels below Priority 1. The SoCal petition illustrates the great difficulty in balancing priorities between gas and electric residential service when no reasonable alternative to gas or electric energy is available for residential customers. Similarly, no alternative to electrical energy is reasonably available for many end uses of electricity for agricultural, commercial, and industrial customers. ✓

Electrical priority considerations are unique as compared to those for gas priorities. It is important in understanding the nature of electric priorities to appreciate these differences. Generally in the lower gas priorities, there is a readily available alternate fuel to natural gas, most often in the form of fuel oil. For example, P3, P4, and P5 gas customers are required to have fuel oil standby facilities so that gas may be curtailed to that end-use on short notice. In instances where the alternate of fuel oil is not practical, as in boiler igniter fuel and in some food processing, those end-uses are given a higher priority (P2a) than would otherwise be afforded. By contrast, most electric end-uses have no practical alternate. Refrigeration, lighting, most appliances, and motors have none. Thus, the effect on the electric user must be fully considered when a particular end-use is to be curtailed, since that end-use must cease operation.

A natural gas deficiency is usually known for a period of time ahead of the curtailment, which enables the customer to plan accordingly. Sudden gas shortages do not generally occur

since gas is stored both underground and in supply lines (line-pack) to help meet seasonal peaks. With electricity, however, the shortage can come suddenly and unexpectedly due to a variety of causes, including mechanical failures, natural disasters, accidents, unseasonal weather conditions, and sabotage. Consequently, a curtailment plan must be available for immediate implementation. However, such sudden and unexpected electricity shortages may cause the system to go directly to Phase IV - Automatic Under-frequency Load Shedding, due to lack of time for implementing Phases I through III.

An electrical capacity shortage is generally a short-term occurrence caused by a lack of sufficient generating capacity to meet the demand during a short period of time. These shortages occur mostly during peak periods of electric uses such as summer afternoons during a heat wave. An energy shortage results from a fuel shortage, or in the case of drought-related conditions, lack of sufficient duration of hydroelectric generation (also a fuel shortage if water is considered the fuel).

A further significant difference between gas and electricity is in the numbers of end-uses. Gas has comparatively few end-uses, while electricity has a multitude, albeit many which have very low demand and consumption. As an example, most residential customers employ gas for only a few end-uses such as space heating, water heating, clothes drying, and cooking, while those same customers may have electrical end-uses including essential and decorative lighting, refrigeration, air conditioning, clothes washing and drying, dishwashing, garbage disposal, a multitude of small electric appliances, shop tools, and life support devices. As a result electric priorities and implementation tend to be more complicated than those of gas. Residential customers are only P1 for gas, but may occupy several priorities for electricity based on end-use, due to the essential or comfort-and-convenience nature of the use.

It appears that interrupting electrical ignition devices and electric controls associated with gas appliances will not be hazardous to the public or to the appliances since interruptions now occur, such as weather caused outages and mechanical failures. Accordingly, it is not necessary or appropriate at this time to raise to the highest priority the use of electrical ignition devices or electric controls associated with gas appliances, as requested by SoCal.

California electric utilities have system protection in the form of automatic load shedding actuated by a specific under-frequency, which acts to prevent total system collapse at a time of capacity shortage. This load shedding can reduce load as much as 50 percent, which could be expected to handle most capacity problems. Beyond that range of reduction, however, the utility's system would shut down and would have to be manually reactivated by means of a cumbersome procedure of adding load in small increments in accordance with system capability. The load shedding generally excludes circuits that contain numerous Priority 1 customers, as well as other circuits which should not be interrupted due to system difficulty in restoring service, such as networks.

No separate automatic plan is required for an energy shortage since the need is not as immediate. Time is available to solicit voluntary reductions in electrical consumption and to monitor the results.

In recognizing that RO should be avoided, in Decision No. 86081 we stated:

"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."

Implementation of the voluntary and mandatory curtailment plan adopted in OII 43 (hereinafter discussed) should diminish the probability of curtailments by rotating outages. However, if voluntary and mandatory curtailments are not sufficient to reduce demand to a level that can be supplied safely and reliably by available generating capacity, then controlled sequential interruption is preferable to automatic under shedding because the utility will have control over the duration and extent of the interruption and, therefore, disruption of the public well-being will be minimized.



Proceedings in OII 43

Since the submission of this phase of Case No. 9884, this Commission issued Decision No. 90427 dated June 19, 1979 in OII No. 43. That decision authorized respondent public utilities to place into effect an electrical reserve sharing plan and a statewide load reduction plan in conjunction with Sacramento Municipal Utility District (SMUD) and the Los Angeles Department of Water and Power (LADWP). The load reduction plan and reserve sharing plan were adopted as emergency measures designed to mitigate an anticipated capacity shortage during the summer months of 1979 and expired on October 31, 1979.

The major components of the load reduction plan consisted of three stages. Prior to the implementation of the first stage, bulletins in the form of television spot announcements and newspaper advertisements were issued alerting electric customers that on days of extreme heat the first stage of the load reduction plan would be initiated. Stage I of the plan was triggered when the reserve margin of any utility was anticipated to be five percent or less. Major customers were urged to implement curtailment of nonessential uses; agricultural and pool pumping was requested to cease during the peak daily usage period; and residential customers were urged to maintain air conditioners at a setting of 80° or higher and to avoid usage of electric washers, dryers, and stoves during the daily peak period. Stage II was triggered by a reduction in the anticipated reserve margin to three percent or less after maximum curtailments of unessential usage required of major customers and mandatory curtailments of lighting, advertising, and appliance usage required of other customers were implemented. Stage III involved mandatory curtailments and RO.

Decision No. 90427 also required the regulated utilities to initiate an augmented summer conservation and load management program as specifically set forth in Appendix D to that order.

Under the reserve sharing plan approved in Decision No. 90427, PG&E, Edison, SDG&E, SMUD, and LADWP agreed to furnish to any participant in the agreement whose reserve margin fell below three percent sufficient energy to maintain at least a three percent margin.

Decision No. 91184 dated January 8, 1980 in OII No. 43 evaluated and assessed the effectiveness of the programs ordered or approved in Decision No. 90427. Decision No. 91184 found that the 1979 statewide load reduction plan and reserve sharing plan adopted pursuant to Decision No. 90427 operated effectively. Sufficient data were not available to evaluate the effectiveness of conservation plans and related load reductions achieved during the summer of 1979. Further hearing was scheduled in OII No. 43 for the purpose of receiving additional data on results of the 1979 augmented conservation program and load reductions, and to determine 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.

The record in Decision No. 91184 established that the respondent utilities incurred no extraordinary expenses in implementing the programs directed in Decision No. 90427, and that customers incurred no extraordinary expenses associated with actions initiated by the utilities in compliance with that order.

#### Curtailement Plan Adopted Herein

The following is a brief description of the curtailment program adopted in this phase of Case No. 9884. The adopted plan relies, in part, on our experience with respect to the emergency programs adopted for the summer of 1979 in OII No. 43, and contemplates that in the initial stages of a capacity shortage and in an energy shortage, reductions in electric usage will be achieved largely by voluntary curtailments and enforced conservation measures.

#### Criteria for 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, either in a time of mandatory curtailment or rotating outages, it is necessary for this

Commission to establish a general set of rules for such events pursuant to its constitutional and legislative mandates. The staff proposal embodied in Exhibit 203 appears to have been accepted, in varying degrees, by the participants in these proceedings. Although modifications are suggested by the various parties no participant takes the position that the plan is totally unacceptable. Understandably, the electric utilities would prefer to implement their own plans according to their own requirements. Accordingly, we will adopt the plan proposed by the staff in Exhibit 203 in accordance with the following discussion.

The priority systems established herein necessarily must be integrated into the peak load reduction plan to be developed in OII No. 43 by which a uniform statewide capacity sharing and load deferral plan will be put into effect for the summer of 1980. In establishing electrical curtailment priority systems herein both for MC and for RO, the ultimate criterion for acceptance of the plan to be adopted, and the action plans to be filed by each utility, is the assurance of the greatest protection possible for the physical safety of individuals as well as the prevention of economic harm. By ordering each utility to file an action plan in accordance with the general framework proposed by the staff, we emphasize that as much discretion as possible is intended to be left with the individual customer as to how that customer will respond to the requirements of MC or RO.

Similarly, 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 should 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.

The priority plan contained in staff Exhibit 203 is a practical approach to establishing priorities in order to prepare for possible capacity and energy shortages. Additionally, each utility should encourage its business and industrial customers to prepare curtailment plans for their own internal guidance in the event of energy or capacity shortages.

Action Plan

All action plans shall consist of four distinct stages:

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

Stages 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). Stage II should include binding mandatory curtailment plans for all utility customers meeting the criteria set forth in Appendix A attached hereto. It is important that, as circumstances permit, individual warning of RO plans will be given to large customers having a demand of 300 kW or more, and to other customers upon a demonstrated showing prior to an emergency of either major economic damage or clear and imminent danger of personal health or safety. This is necessary in order for these customers to implement their individual binding mandatory curtailment plans and thus avoid to the fullest extent possible economic harm or physical harm to personnel. Customers filing binding curtailment plans shall agree to curtail electric use on their entire circuit by the amount being achieved via rotating outages. Several customers on a single circuit within an outage block may file a joint binding plan. It must be emphasized, however, that complete protection to such customers cannot be guaranteed because daily circuit switching may temporarily change a customer's outage block and priority classification. Furthermore, circumstances creating a capacity shortage may occur so rapidly that insufficient time is available to implement one or more of Phase I through Phase III, and the system will go directly to Phase IV.

Automatic under-frequency load shedding (AULS) senses the frequency as a measure of electric supply system overload. As the demand exceeds the available supply, the frequency drops and AULS begins shedding load to protect system facilities and to preserve the interties, as well as to avoid total system blackouts. To the extent that the details of load shedding plans are on file with the Commission, reference to such plans will suffice for compliance with the order herein.

Communication Plan

The form of the communication plan would be left to the utility. It should indicate the method of public notification and the lines of responsibility within the utility for disseminating information on curtailment.

Compliance Audit and Enforcement Plan

The record clearly demonstrates that audit and enforcement are technically and economically feasible only for an energy shortage extending over one complete billing period. Therefore, enforcement through assessment of surcharges and service disconnection would not be contemplated in a mandatory curtailment situation until it became apparent that energy consumption was exceeding required levels. Accordingly, we hereby authorize the filing of penalty tariffs based upon the recommendation appearing in Exhibit 203, but such tariffs should be held in abeyance pending further consideration of what circumstances would warrant their implementation.

The money collected from excess use tariffs should be kept in a separate account to be disposed of by Commission order.

Criteria Statement

A criteria statement should also be filed in accordance with the general framework of Appendix A attached hereto.

Staff Functions

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 procedure for customer appeals is established in Tariff Rule 14.1.

Findings of Fact

1. Decision No. 86081 created five classifications of electric priorities for the curtailment of electricity during periods of insufficient supply to meet demand whether the shortfall be caused by inadequate generating capacity or inadequate fuel supply.

2. Shortages in the supply of electric energy pose a serious threat to the economic and social well-being of the state and appropriate curtailment procedures must be devised to deal with such shortages should they materialize.

3. The nature and duration of electric energy shortages may differ as a result of the variable factors causing the shortage.

4. A capacity-related shortage may be caused by one or more of the following factors:

- a. Unavailability of power from interconnected electric networks;
- b. Short-term shortages of generating capacity caused by temporary equipment failure, unanticipated excessive peak day demands, or weather occurrences;
- c. Long-term outages or reductions in actual operating levels of generating capacity caused by equipment failure; or
- d. Long-term excessive peak demand caused by extended weather excesses.

5. Fuel-related shortages are caused by a shortage or interruption of the fuel supply for electric generation.

6. Implementation of a statewide electrical curtailment plan based on end-use as adopted in Decision No. 86081 creates technical and practical problems with the various respondent electric utilities because of the differences in their systems and internal operations.

7. Continuous process users of electricity should be accorded a high priority in order to protect the public health and safety while minimizing any possible adverse impact on the State's economy.

8. The "Essential Use" category should be modified so as to expressly include service to industrial safety machinery for the purpose of assuring continued service of electricity to such machinery during times of fuel or capacity-related shortages in order to protect operating personnel who would otherwise be exposed to injury.

9. The interruption of electrical ignition devices and electric controls associated with gas appliances because of a mandatory curtailment will be no more hazardous than similar interruptions caused by mechanical failures or temporary forced outages. Therefore, assignment of the priority to such ignition and control devices is not necessary.

10. Substantial and pervasive voluntary conservation procedures are still necessary to achieve curtailments of electrical use without the economic dislocations and inevitable inequities resulting from reliance entirely upon a mandatory system of curtailments based solely upon priorities of use.

11. Curtailment procedures should not operate as a counter incentive to electric utility customers who have voluntarily instituted conservation practices.

12. The assessment of the load reduction plan, voluntary conservation plan, and electric reserve sharing plan adopted in OII 43 for the summer of 1979 indicates that these plans worked well for that period.

13. Implementation of a voluntary and mandatory curtailment plan similar to that adopted in OII 43 should diminish the probability of curtailments by rotating outages.

14. Controlled sequential interruptions are preferable to automatic under-frequency load shedding because sequential interruptions are under

the control of the utility for the extent and duration of the interruption, which minimizes the adverse effect of the interruptions on the utility's customers.

15. Amendment of the present priority system as recommended by the staff will be a step toward eliminating the risk of an electric curtailment and the accompanying adverse economic impacts.

16. Modification of the electric priorities established in Decision No. 86081 as proposed by the staff in Exhibit 203 will better allow the practical implementation of curtailments on existing utility distribution systems.

17. Implementation of the priority and curtailment plans adopted herein should reduce financial and other hardships on electric customers resulting from the plans adopted in Decision No. 86081 and place no additional financial burden on respondents.

#### Conclusions of Law

1. The revised priority plan found reasonable herein is in conformance with the provisions of Sections 2771 and 2772 of the Public Utilities Code.

2. The staff proposals in Exhibit 203 should be adopted as set forth in the order which follows.

3. Further hearings should be held for the purpose of considering the implementation of this order by respondents.

#### INTERIM ORDER

IT IS ORDERED that:

1. Decision No. 86081 is modified in accordance with Ordering Paragraphs 2 through 7 of this order.

2. The staff-proposed priority system for mandatory curtailment (Appendix B) is hereby adopted replacing the existing priorities ordered in Decision No. 86081 for mandatory curtailment (Appendix A).

3. The staff-proposed priority system for rotating outages (Appendix B) is hereby adopted replacing the electric priorities ordered in Decision No. 86081.

4. Respondent utilities are hereby ordered to file action plans within sixty days of the effective date of this order, in compliance with the action plan recommended in Exhibit 203 and discussed in the body of this opinion.



5. With respect to action plan Stage III - rotating outages, respondent utilities each shall submit a plan to interrupt customers sequentially to achieve load reductions in five percent increments up to 50 percent of system loads for one hour duration while protecting essential uses to the maximum extent practical. The plan must also set forth the procedure to be used by water and sewage treatment facilities to have service promptly restored in the event of an emergency such as a fire or sewage overflow or treatment crisis during an interruption.

6. Respondent utilities are hereby ordered to send a notification and application form within sixty days from the effective date hereof to the commercial and industrial customers who are reasonably able to comply with the Optional Binding Mandatory Curtailment Plan. Such notification and application form must be approved by the Executive Director after consulting with the staff, prior to transmittal to utility customers.

7. Respondent utilities are hereby ordered to file proposed excess use penalty tariffs in compliance with the table in Footnote 4 of the preceding opinion within sixty days from the effective date hereof. Such tariffs shall be held in abeyance until made effective by further order.

8. Further hearings shall be held to consider the action plans filed in response to this order.

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

Dated APR 15 1980, at San Francisco, California.

\_\_\_\_\_  
President  
*Wesley L. Stinson*  
\_\_\_\_\_  
*Richard W. Howell*  
\_\_\_\_\_  
*Clair T. ...*  
\_\_\_\_\_  
*John E. Bryson*  
Commissioners

Commissioner John E. Bryson,  
being necessarily absent, did  
not participate.

APPENDIX A  
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Electric End-Use Curtailment

1. The following shall constitute the Commission's electric priority list of customers and uses in descending order of priority.

2. The criteria for categorizing the uses of electricity of the customers of record as of the effective date of this decision are as follows:

Priority 1 - Essential or protected customers or uses

- a. Governmental agencies to provide essential service to fire, police, prison facilities and to provide essential lighting for streets, highways, and other public areas.
- b. Governmental agencies in their activities essentially and directly related to national defense (Federal, National Guard, and Civil Defense).
- c. Hospitals and convalescent homes for their critical facilities such as operating room, emergency room, life-support machines, diagnostic machines, refrigeration for medicines, communications, and minimal lighting.
- d. Private and public utilities' system use in providing electric, gas, water, communication, and sewage disposal services to the extent that those services could not be reduced without seriously affecting public health and safety.
- e. Public transportation and associated customers (rail, air, bus, and trucking) in their use in operation of the conveyances; in providing guidance control, communication, and navigation services; and maintaining essential lighting at passenger or freight gathering and dispersing areas.

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- f. Customers directly engaged in the production, refining, and transmission of fossil fuel, or steam to the extent that those activities contribute primarily to the generation of electricity for general use.
- g. Radio and television broadcasting stations to the extent that their services are utilized for the transmittal of emergency messages and public information broadcasts related to these procedures.
- h. Residential customers for the use of life-support equipment such as an iron lung or kidney machine.

Priority 2 - Customers and their usage other than in Priority 1, susceptible to exceptional or irreparable loss in the event of curtailment or interruption of electric supply

- a. Customers listed under Priority 1 from a. through g. to the extent that their usages conform to those described for the customers listed below in Priority 2.
- b. Agricultural customers to the extent that their efficient usage of electricity is directly necessary for the production, storage, or processing of food products, or that a substantial reduction of usage would result in crop failure.
- c. Commercial/industrial customers for those uses other than in Priority 1 to the extent that their efficient usage of electricity is essential in the production or marketing of items of widespread use and that a substantial reduction in electrical usage would cause an unemployment crisis in the locality in which the electrical service is rendered; or that a prolonged shutdown of their equipment using electricity would cause major irreparable damage to that equipment or its product.

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Priority 3 - Residential customers

Residential customers to the extent that their usage is confined to minimal essential lighting and heating in occupied portions of the residence; to minimal water heating at thermostat settings no greater than to provide hot water at the minimum needed temperature; for provident use of electric appliances such as to exclude partial use of washing machines, dryers, etc.; and for provident use of cooking facilities.

Priority 4 - Customers and their usage of a customary nature not qualifying under Priority 1, 2, or 3 and not excluded under Priority 5, and all customers at their general level of usage in the year preceding the subject energy crisis.

Priority 5 - Customers and usage to be curtailed first in the event of a generating capacity or fuel shortage crisis

- a. Residential customers in any luxurious or wasteful usage. This would include heating or circulating water in a swimming pool unless prescribed by a physician for therapy. It would also include heating or cooling of unused space, the use of grossly inefficient appliances, or the space conditioning of poorly insulated rooms.
- b. Any customer in its use for ornamental lighting or display when such use does not contribute to otherwise essential use.

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Page 1 of 6

Staff Proposal (Exhibit 203)

DEFINITIONS

Capacity Shortage:

Generally a short-term occurrence caused by lack of sufficient generating capacity to meet demand. It is most likely to occur at peak periods such as mid-summer afternoon with high temperature.

Energy Shortage:

Results from a fuel shortage, or in drought-related conditions from a lack of hydroelectric generation.

Essential End-Uses:

Those directly necessary for health, safety, and security. This includes personal minimum needs.

Business Use Priority:

- A. This includes end-uses directly necessary for protection of the means of production or the product. It also covers agricultural production essential for protecting the means of production or the crops or to prevent failure or loss of a crop.
- B. End-uses directly necessary for production, processing, storage, or transportation of food and other goods and services.

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MANDATORY CURTAILMENT

Essential Use: Minimum Essential Health, Safety, and Security Uses

- A. Governmental and private agencies' uses necessary to provide minimum essential service to fire, police, prison facilities and to provide minimum essential lighting for streets, highways, and other public areas.
- B. Governmental agencies' uses necessary in their activities essentially and directly related to national defense. (Federal, National Guard, and Civil Defense).
- C. Hospitals' and convalescent homes' uses necessary for their critical facilities such as operating room, emergency room, intensive care, life-support machines, diagnostic machines, refrigeration for medicines, communications, and minimal lighting for health and safety.
- D. Private and public utilities' system use in providing minimum electric, gas, water, communication, and sewage disposal services to the extent that their services could not be reduced without seriously affecting public health and safety, including essential new electric facility construction.
- E. Public transportation and associated customer (rail, air, bus, and trucking) in their use in operation of the conveyances; in providing guidance control, communication, and navigation services; and maintaining minimum essential lighting at passenger or freight gathering and dispersing areas.
- F. Customers directly engaged in the production, refining, or transmission of fossil fuel, or steam to the extent that those activities contribute primarily to the generation of electricity for general use, including essential new fuel receiving, processing, storage, and transportation facilities.

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- G. Radio and television broadcasting stations to the extent that their services are utilized for the transmittal of emergency messages and public information broadcasts related to these procedures.
- H. Residential and other customers' use of critical life-support equipment such as an iron lung or a kidney machine.
- I. Residential domestic use confined to minimum essential lighting and heating (65°F) in occupied portions of the residence; to a maximum 120°F water heating temperature; to no space cooling; and to minimum essential use of cooking and refrigeration facilities, and of essential electric appliances. Such appliances would include clothes washing machines and maximum 8-hour a day use of swimming pool filter pumps limited to off-peak hours (8 p.m. to 10 a.m.).
- J. Other minimum essential use where health, safety, or security are clearly and imminently endangered.

Business Use:

- A. Business Protection. Commercial, industrial service, government, and other business uses essential for protecting the means of production or the product itself, and agricultural uses essential for protecting the means of production or the crops or to prevent failure or loss of crop.
- B. Business Production. Commercial, industrial service, government, agricultural, and other business uses essential to the manufacture, production, processing, storage, or transportation of food and other goods and services.



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Comfort and Convenience Use:

Degrees of use not covered by other priorities, and which either are not essential for the protection or production of goods and services as the means of production, or are not essential for minimum daily living needs, or whose terminated use does not clearly and imminently endanger health, safety, or security. Elimination of such uses or degree of use may cause considerable but bearable inconvenience or discomfort, or may require significant change in personal habit or business practice.

Specific significant end-uses to be included are listed in Appendix B according to whether they are most typical of residential-domestic use, business use, or both.

PRIORITY SYSTEM FOR ROTATING OUTAGES

Essential Customers - Normally exempt from Rotating Outages

- A. Government and other agencies providing essential fire, police, and prison services.
- B. Government agencies essential to the national defense.
- C. Hospitals with 100 beds or more.
- D. Communication utilities, as they relate to public health, welfare, and security, including telephone utilities.
- E. Navigation, communication, traffic control, and landing and departure facilities for commercial air and sea operations.
- F. Electric utility facilities and supporting fuel and fuel transportation services critical to continuity of electric power system operation.
- G. Radio and television broadcasting stations used for broadcasting emergency messages, instructions, and other public information related to the electric curtailment emergency.

- H. Water and sewage treatment utilities may request partial or complete RO exemption from electric utilities in times of emergency identified as requiring their service, such as fire fighting.
- I. Areas served by networks, at utilities' discretion.
- J. Binding Mandatory Curtailment Plan:

Any customer meeting both the criteria for Economic Damage and those following.

The customer would be required to file with the utility an acceptable binding energy and load curtailment plan. The customer would agree to curtail electric use on his entire circuit by the amount being achieved via rotating outages. The customer's plan would show how reduction on the entire circuit could be achieved in 5 percent increments to the 50 percent level, and show how compliance can be monitored and enforced. Since the required curtailment level would have been requested prior to the rotating outage stage, the customer would have to maintain the required reduction during all rotating outages periods. Several customers on a circuit could file a joint binding plan to guarantee the required curtailment from the entire circuit.

Note: Protection cannot be guaranteed because daily circuit switching may temporarily change a customer's outage block and priority classification.

#### Economic Damage Customers

As circumstances permit, individual warning of RO plans would be given to large customers having a demand of 300 kW or more, and to other customers upon their showing or need to show major economic damage or clear and imminent danger to personal health or safety, in order to qualify for this category.

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Individual timely warning could not be guaranteed either because of time, manpower, or communication limits, or because of daily circuit switching which could temporarily change a customer's outage block number.

All Other Customers

Customers not qualifying for higher priority. Warning and other relevant information would be informed by mass media, and no special treatment or individual notification would generally be given.

SOUTHERN CALIFORNIA EDISON CO.

DISPATCHER'S BULLETIN

No. 20

Revised: June 3, 1974

EFFECTIVE UPON NOTIFICATION BY THE SYSTEM DISPATCHER

EMERGENCY OPERATION  
MAINTENANCE OF MINIMUM REGULATION MARGIN

PURPOSE

The procedure in this Bulletin is to be used to maintain a regulating margin of approximately 100 MW. Only under extreme circumstances, when all available sources of energy have been used, will this procedure be utilized.

GENERAL

The manual load dropping, outlined in this Bulletin, will be done in blocks of approximately 100 MW. The blocks will be shed on orders from the System Dispatcher, as outlined in this Bulletin under "Procedure". These blocks will be de-energized for periods of approximately one hour. After one hour, the System Dispatcher will order the next one or more blocks of load dropped and the first one or more blocks of load picked up; this will be done until the emergency condition has been concluded.

Orders to drop load or to restore service will originate with the System Dispatcher and will be transmitted to the designated Transmission and/or Subtransmission Switching Centers. In some cases, it will be necessary for these Switching Centers to relay the order to the appropriate controlling stations in the area. Details are provided in the attached notification plan.

The load blocks will be of two types. Circuits served from normally attended or supervisory controlled substations (S/M) will be grouped together in the 100 series blocks numbered 101 through 199. Circuits out of substations with automatic features (automatic) will form the 200 series blocks, numbered 201 through 299. The current number of blocks in each series will be 30; expanding with future system growth. The line loadings were determined from non-coincident peak times. Customer Service will review the block loadings periodically and changes will be made as needed.

UPDATING PLAN

When a non-critical circuit, presently in this Bulletin, becomes a critical circuit, the Customer Service District Manager will notify the Distribution Switching Center immediately. The Switching Center will log this information, line out, initial and date the circuit in the Bulletin 20 Load Shed Schedule, then notify the System Dispatcher. Customer Service District Manager will follow the verbal notification with a memorandum to the Switching Center and a copy to the Superintendent of System Dispatching and the Chief Engineer, Customer Service Engineering.

The specific circuits and other details of this procedure will, from time to time, be modified by the Company as system load and other conditions change, and its implementation is subject to adjustment by the System Dispatcher whenever, in his judgment, such adjustment needs to be made in accordance with good utility operating practice so as to apportion the

## APPENDIX C

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supply in the manner which appears most equitable under the conditions then prevailing.

PROCEDURE

1.0 The System Dispatcher will implement the Bulletin by issuing the following notifications on the "quick call" telephone system.

1.1 ATTENDED STATIONS - "At \_\_\_\_\_ time, in accordance with Dispatcher's Bulletin No. 20, dispatch station attendants for load block/s 2XX."

This notification is the authority for the Distribution Switching Centers to dispatch personnel to the automatic stations and do the necessary preparatory switching (reclosers and alarms et. al.). Time available is one hour.

1.2 LOAD SHED - "At \_\_\_\_\_ time, in accordance with Dispatcher's Bulletin No. 20, drop XXX block/s of load."

This notification is the authority to drop or order load dropped.

1.3 LOAD RESTORED - "At \_\_\_\_\_ time, in accordance with Dispatcher's Bulletin No. 20, pick up XXX block/s of load."

This notification is the authority to pick up or order pickup of load dropped.

1.4 STATION UNATTENDED - "At \_\_\_\_\_ time, in accordance with Dispatcher's Bulletin No. 20, release station attendants for load block/s 2XX."

This notification is the authority for the Distribution Switching Centers to release personnel from the automatic stations.

After each notification, the Switching Center shall take the action required and immediately thereafter, notify the District Manager or his representative.

2.0 Do not release station attendants until notified; additional load shedding may be required.

3.0 Do not restore load until notified except:

Exception: If the Switching Center receives notification that some critical load has been dropped, refer each case

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to the District Manager and return the questionable line to service on the District's recommendation. Dispatcher notification can be made at a later time.

- 4.0 Power Supply and Customer Service Department personnel shall be dispatched and directed by the Switching Center to coordinate operations.
- 5.0 On approximately a one-hour basis, the System Dispatcher will order other load shed and an equal amount of load will be picked up. A balance of outage time will be maintained between the 100 and 200 series and between individual load blocks.
- 6.0 Normally attended and supervisory controlling stations are authorized to shed and restore load upon notification without further orders from the Distribution Switching Center.
- 7.0 Switching Centers should not report back to the System Dispatcher, completion times, etc., until requested.