

(Decision No. C82-1271)

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF COLORADO

\*\*\*

IN THE MATTER OF THE PROPOSED	)	INVESTIGATION AND SUSPENSION
INCREASED RATES AND CHARGES	)	DOCKET NO. 1525
CONTAINED IN TARIFF REVISIONS	)	
FILED BY PUBLIC SERVICE COMPANY	)	DECISION AND ORDER
OF COLORADO, 550 15TH STREET,	)	OF THE COMMISSION
DENVER, COLORADO, UNDER ADVICE	)	PHASE II
LETTER NO. 826 - ELECTRIC, ADVICE	)	
LETTER NO. 324 - GAS, AND ADVICE	)	
LETTER NO. 27 - STEAM.	)	

- - - - -  
August 17, 1982  
- - - - -

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The Commission.

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BY THE COMMISSION:

I.

HISTORY OF THE PROCEEDINGS

On May 18, 1981, Public Service Company of Colorado (hereinafter "Public Service," or "Company," or "Respondent") filed with the Commission three advice letters, one pertaining to electric rates, one pertaining to gas rates, and one pertaining to steam rates. The three advice letters are as follows:

1. Advice Letter No. 826 - Electric, which is accompanied by 2 tariff sheets pertaining to Colorado, P.U.C. No. 5 - Electric;
2. Advice Letter No. 324 - Gas, which is accompanied by 2 tariff sheets, pertaining to Colorado P.U.C. No. 4 - Gas;
3. Advice Letter No. 27 - Steam, which is accompanied by 2 tariff sheets pertaining to Colorado P.U.C. No. 1 - Steam.

With respect to the filing made pursuant to Advice Letters No. 826-Electric, No. 324-Gas, and No. 27-Steam, Public Service requested the Commission immediately to suspend the same and establish procedural and hearing dates in order that rates resulting from these respective filings become effective at as early a date as possible.

The increases initially requested by Public Service in this docket for electric, gas and steam rates are as follows:

<u>Operations</u>	<u>(\$)</u> Increase	<u>(%)</u> Increase
Electric	\$162,813,000	27.26%
Gas	28,584,000	6.70%
Steam	330,000	4.69%
Total	<u>\$191,727,000*</u>	<u>18.60%*</u>

\* By letter of June 26, 1981, Public Service identified certain errors in its original filing, which reduced its electric, gas and steam rate increase request to the following:

<u>Operations</u>	<u>(\$)</u> Increase	<u>(%)</u> Increase
Electric	\$160,207,000	26.82%
Gas	28,084,000	6.58%
Steam	316,000	4.49%
Total	<u>\$188,607,000</u>	<u>18.29%</u>

As in the past, Public Service requested that the revenue requirements and rate design phases of hearings be divided into two separate phases and the revenue increases resulting from an order in Phase I be allowed to become effective immediately upon the completion of Phase I. Public Service additionally requested that such increase be in the form of uniform percentage riders applicable to all classes of service pending resolution of any rate design issues.

On May 19, 1981, the Commission entered Decision No. C81-890 wherein it set the tariff revisions filed by Public Service with respect to its Advice Letters No. 826-Electric, No. 324-Gas, and No. 27-Steam for hearing to commence on July 8, 1981.

Pursuant to the provisions of CRS 1973, 40-6-111(1), the effective date of the tariffs filed by the above-mentioned Company with the above-mentioned advice letters were suspended until January 18, 1982, or until further order of the Commission.

Also by Decision No. C81-890, the Commission determined that the proceedings would be conducted in two phases: Phase I would consider the revenue requirements of the Company and Phase II would cover the appropriate spread of the rates issues.

The hearings in Phase I (the "revenue requirement phase") were conducted during the fall of 1981.

On December 1, 1981, the Commission entered its Decision and Order in Phase I, i.e., No. C81-1999. On January 19, 1982, the Commission entered its decision denying applications for reargument, reconsideration or rehearing of Decision No. C81-1999, that decision being C82-97.

The Phase II hearing commenced on March 3, 1982, with the Company's direct testimony. On March 4, 1982, the hearing was continued to May 12, 1982, for Staff and Intervenor testimony. Hearings were held on March 3, and 4, 1982, and on May 12, 13, and 14, 1982.

Public Service presented as its direct witnesses in Phase II: M. E. Giddings, J. H. Moore, R. A. Keyser and J. D. Heckendorn.

The Staff of the Commission (Staff) presented as its witnesses: Bruce S. Mitchell, Warren L. Wendling and Donald W. Orendorff.

Intervenors Blackburn, Shearer, and Marquez presented as their witness: George J. Sterzinger.

Intervenor Executive Agencies of the USA (USEA) presented as its witness: Max E. Kiburz, II.

On rebuttal, Public Service presented as its witness:

R. H. Keyser

All prefiled written direct testimonies were marked as exhibits using letters of the alphabet. All exhibits filed with and in support of written testimony were marked using arabic numerals. Both the letters and numerals were preceded by Roman Numeral II. The list of exhibits is appended to this Decision as Appendix A.

Initial statements of position with regard to Phase II were filed by:

	<u>DATES</u>
Public Service	6-7-82
AMAX	6-7-82
Staff of the Commission	6-7-82
Executive Agencies of the U.S.	
Government (USEA)	6-7-82
Blackburn, Shearer, and Marquez	6-8-82
CF&I Steel Corp.	6-8-82

Reply statements of position were filed by the following:

Public Service	6-25-82
AMAX	6-25-82
Staff of the Commission	6-25-82
Executive Agencies of the U.S.	
Government (USEA)	6-25-82
Blackburn, Shearer and Marquez	6-28-82
CF&I Steel Corp.	6-25-82



## PHASE II - Final Decision and Order

The Commission on December 1, 1981, authorized Public Service to place into effect new rates based upon its then current rate structure and the revenue requirement as found in Phase I. The Commission considered those rates as final rates for administrative and judicial review purposes. Rates which we shall hereinafter order, as a result of the Phase II hearings herein, shall reflect the overall revenue requirement initially found in Phase I. These rates shall also be considered final for the purposes of the procedural provisions of C.R.S. 1973, 40-6-114 and 40-6-115.

## Submission

The herein instant matter has been submitted to the Commission for decision. Pursuant to the provisions of the Colorado Sunshine Act of 1972, C.R.S. 1973, 24-6-401, et seq., and Rule 32 of the Commission's Rules of Practice and Procedure, the subject matter of this proceeding has been placed on the agenda for an open meeting of the Commission. At an open meeting the herein Decision was entered by the Commission.

## II.

### PRELIMINARY REMARKS

Public Service's electric, gas and steam customers presently are subject to base rates established in Investigation and Suspension Docket No. 1425 plus an add-on rider authorized in Investigation and Suspension Docket No. 1525, Phase I, by Decision No. C81-1999, dated December 1, 1981. By this Decision the Commission authorized riders in the amount of 16.76 percent for electric, 4.67 percent for gas, and 1.93 percent for steam rate schedules, respectively.

The purpose of Phase II in Investigation and Suspension Docket No. 1525 is to translate the revenue requirement previously found in Phase I of this Docket, namely, \$120,156,000, into appropriate spread-of-the-rates among Public Service's various classes of customers for its various commodities (electricity, gas, and steam).

With regard to steam, Public Service proposes to eliminate blocking and to state the rates in a more simplified form. The general rate for steam service has evolved over many years into the present rate form which has a minimum usage block, four declining usage blocks, and a tail-usage block. Public Service's proposed rates contain only a service and facility charge and a usage charge. The proposed change in steam rate form is consistent with Public Service's past practice of eliminating unnecessary blocking wherever possible in gas and electric rates. No objections were raised concerning Public Service's steam rate proposals, and we find that the tariffs set forth in Exhibit II-20 are just and reasonable and should be adopted by the Commission.

In Public Service's last general rate case, Investigation and Suspension Docket No. 1425 (I & S 1425), there were no controverted issues with respect to the Gas Department. In the present docket, Investigation and Suspension Docket No. 1525 (I & S 1525), there is a controverted issue as to whether or not Public Service should change from the so-called United Methodology (wherein fixed costs are allocated 75 percent to the commodity rate and 25 percent to the demand rate) to the so-called Seaboard Methodology (wherein fixed costs are allocated 50 percent to the commodity rate and 50 percent to the demand rate).

As in I & S 1425, most of the controverted issues in I & S 1525, Phase II, involve Public Service's electric rate proposals. Public Service did implement Commission policy with regard to a number of its electric rate proposals, and these did not engender any controversy among the parties. Accordingly, except as hereinafter indicated in this Decision and Order, the Commission finds that the electric rate proposals filed by Public Service are just and reasonable and should be adopted by the Commission.

In succeeding portions of the Decision herein, the Commission will discuss some of the controverted issues which require resolution in Phase II of this Docket.

### III.

#### COST OF SERVICE - ELECTRIC

##### A. Average and Excess Demand Modification

1. Use of group peak, on peak and shoulder hours for time-of-use customers.

In I & S Docket 1425, a number of separate demand allocation methodologies were presented during Phase II. In that Docket, the Commission continued the average and excess demand (AED) method with non-coincident peak, which method had been proposed by Public Service with the exception that the Commission did not find it appropriate, as proposed by Public Service, to allocate excess demands only during Public Service's defined peak hours of 8:00 a.m. to 11:00 p.m. In I & S 1525, Phase II, all parties, in the final analysis, used the AED demand allocation methodology proposed by the Company as a point of departure. The principal controversy concerning the AED methodology in this Docket was whether the group or individual maximum demands used to allocate costs should be, for some or all customer groups, determined on the basis of demands occurring during the peak and shoulder periods, or on the basis of demands occurring during any time of the day. In I & S 1425, Public Service had proposed that the maximum demands used to allocate costs for all customer groups be those occurring during on-peak hours. (In its initial filing in I & S 1425, Public Service did not propose a shoulder period; three rating periods, including the shoulder period, were ultimately adopted by the Commission.) Several participants in I & S 1425 questioned Public Service's proposals, and the Commission in I & S 1425 decided that group maximum demands should be determined as they had been previously; that is, by the largest demand regardless of when it occurred.

In Decision No. C79-1111, in Case No. 5693 (hereinafter, the "Generic Decision"), the Commission determined that time-of-use rates for industrial and large commercial electric utility customers would be beneficial in Colorado (Id. at 130-131). While the Commission endorsed a cautious implementation of time-of-use rates, it stated that among the primary regulatory goals of time-of-use rates were the conservation of capital and energy. The Commission noted that if these primary goals are to be realized, then the design of time-of-use rates must:

1) provide an incentive to minimize use at the peak and to conserve energy and 2) take into account time periods and cost variations between those periods. The Generic Decision was administratively final on July 7, 1981. (See Decision No. C81-1198.)

In Decision No. C81-1282 in Phase II of I&S 1425, the Commission ordered the implementation of time-of-day (TOD) rates for Public Service Company's 32 largest customers whose annual usage exceeds 4 megawatts. The Commission emphasized that the TOD rates adopted therein were consistent with the "phased" approach which it believes to be the proper way to implement TOD rates in Colorado (Id. at 26-27).

In the instant case, the Staff proposes the next logical "phase" in the cautious implementation of TOD rates. Staff witness Mitchell proposes modifications to the existing methods of allocating demand and energy costs so as to provide sensitivity to TOD rates while minimizing the impact of the implementation of TOD rates on the other customer classes.

The AED methodology used by Public Service Company to determine demand cost responsibility in Exhibit II-12 uses group maximum demand occurring during all hours of the year. Mr. Mitchell testified that the Company's AED method is insensitive to TOD rates because a maximum group demand occurring during off-peak hours could be used to determine the demand cost responsibility of a TOD customer.

Hence, under the Company's AED method any potential benefits to the TOD customer for shifting load from peak to off-peak periods is negated. (Exhibit II-F, pp. 6-7).

Mr. Mitchell proposes that demand costs be assigned on a modified AED methodology which uses the maximum group demand during the peak and shoulder rating periods for the various TOD rate classes, while the maximum group demand during all hours is used to assign demand costs for the other rate classes. He also proposes that energy expenses be assigned directly to TOD rate classes by use of the energy cost differentials for each rating period and of the adjusted energy consumption in each period for the TOD rate classes. The remaining expenses should then be assigned to the other rate classes by adjusted annual energy consumption. (Exhibit II-F, p. 9). Of course, if actual energy expenses were known for each rating period, the actual expenses should be assigned directly to the TOD rate classes, rather than using the energy differentials.

Mr. Mitchell testified that these modifications to the AED method would permit a more appropriate assignment of costs to the TOD rates and would provide some incentive for TOD customers to shift load to the off-peak period, both of which cannot be accomplished with the present AED allocation method. He further testified that his proposals would also maintain the concepts of the existing AED allocation method for the other rate classes, which ignores time of use as a determinant of costs for those classes. Mr. Mitchell believes, and we agree, that his proposals constitute a cautious implementation of TOD rates, while minimizing the impact of this change on the other rate classes. (Id.) For example, a comparison of columns 1 and 4 of page 1 of Exhibit II-56 shows little difference of percentage increases in revenues for the test year between the Company's AED method and Mr. Mitchell's AED method. Page 2 of the same exhibit shows a shift in energy expenses, under the staff proposal, of \$627,236 from TOD customers to the other

rate classes. This shift results in a minimal 0.37 percent increase in energy costs for classes other than TOD rate classes, but only about a 0.1 percent increase in total revenue requirements for these other classes. (Exhibit II-F, p. 8).

The Company's objections to Mr. Mitchell's AED modifications, as stated in the rebuttal testimony of Public Service witness Keyser, are that: 1) the demand allocation methodology must be consistent among all rate classes; and 2) if the energy cost allocation recognizes time differentiation for TOD classes, it should recognize time differentiation for all classes. In other words, the Company apparently feels that it is discriminatory to treat one rate class differently than another in allocating costs.

The Commission's adoption of Mr. Mitchell's modified AED method would not result in unlawful discriminatory or preferential rates. The question is not whether Mr. Mitchell's AED method treats the allocation of costs to the various rate classes differently, but whether such different treatment results in unlawfully discriminatory rates. C.R.S. 1973, 40-3-102 requires the Commission to prevent unjust discriminatory rates. C.R.S. 1973, 40-3-106(1) inter alia prohibits public utilities from granting preferential rates to any class of service, but allows the establishment of a graduated scale of charges. In order for rates resulting from Mr. Mitchell's AED method to be unlawfully discriminatory or preferential, the rates would have to be unrelated to the cost of service. Mountain States Legal Foundation v. Public Utilities Commission, 197 Colo. 56, 590 P.2d 495 (1979). Mr. Mitchell's AED method would not result in unlawful rates because his AED method recognizes differences in demand and energy costs by time period for TOD customers. Indeed, his AED method would be cost tracking. Moreover, TOD customers already have different rates than other customers (tr. 5/12/82, p. 288).

In spreading the increased revenues among the various rate classes, non-cost factors may be considered by a regulatory commission, and unequal increases in rates for various classes of service may be granted to accomplish legitimate regulatory objectives. Secretary of Defense v. Chesapeake and Potomac Telephone Company, \_\_\_\_ Va. \_\_\_\_, 225 S.E.2d 414 (1976). This Commission's goals of conservation of demand and energy and tracking costs through TOD rates, as articulated in the Generic Decision, are legitimate regulatory objectives. Hence, there is nothing unlawful or unreasonable in treating TOD rate classes differently than other rate classes in allocating costs since their costs are not the same. Mr. Mitchell's AED method will provide an incentive to TOD customers to shift load. Moreover, such load shifting will benefit residential customers through lower future capital requirements for plant expansion. Accordingly, we find that in order to implement TOD rates pursuant to the Generic Decision there must be rate design and allocation methodologies that are time sensitive. Since Staff Witness Mitchell's AED method will help accomplish these TOD rate objectives, it should be adopted.

## 2. Implementation of the AED Modification.

The Staff maintains that the proper time to implement the Staff methodology is in the next rate case when a full year of data from TOD rates will be available for a test year. Various parties have suggested that the Staff TOD cost allocation methodology be adopted in this case. AMAX, for example, submits that a delay in the implementation of the Staff's proposed cost allocation methodology which would measure excess demand of time-of-use customers during the peak and shoulder periods, would contradict this Commission's previously announced position that TOD rates are not being implemented on an experimental basis. We agree with AMAX that a careful reading of the Commission's Decision in I & S 1425 - Phase II does indicate that

the "cautious" implementation of the TOD principle concerned the size of the initial TOD rate group, not the TOD rate design principles or cost allocation methodology. We also recognize the possible effects of TOD customers on Public Service's system load profile.

The test year in this Docket ended on September 30, 1981. TOD rates went into effect on September 23, 1981, and, accordingly were not in effect for all of or even most of that test year, but, on the contrary, were only in effect for one week of that test year. The Commission is faced with the choice of using a test year when TOD rates, for all practical purposes were not in effect, or a test year which is not in the record. Since the 1981 test year data is the only evidence of record in this Docket, the Commission cannot lawfully order Public Service to implement refinements to the AED methodology based upon a test year which is not part of the record in this Docket. Although we are sympathetic to the desire of AMAX and others to implement the AED refinement at as early a date as possible, it would be unfair to order Public Service to do so based upon a test year which, necessarily, is not subject to cross examination by the parties in this Docket. Accordingly, we agree with the Staff that implementation of the AED methodology refinement, as proposed by Staff Witness Mitchell, should be implemented in Public Service's next general rate case rather than at the present time.

B. Allocation of Energy Expense for Time of Use Classes

Staff Witness Mitchell proposes that in the cost-of-service study the direct assignment of energy expenses to the TOD classes would be a logical step in refining TOD rates in order to produce a more cost-tracking rate. We agree. We find that providing a signal to TOD customers to shift energy to off-peak in the rate design but then taking away all customer savings in the next cost-of-service study, as the Public Service proposal does by allocating



energy expenses to all classes on an average basis and not on a time-sensitive basis, will not provide the proper price signal over time to TOD customers to shift energy usage to the off-peak. In fact, we believe that conflicting price signals would most likely be given to those customers by a cost-of-service study which allocates energy costs on an average, rather than a time-of-use basis. Accordingly, we shall hereinafter direct that Public Service assign energy expenses directly to TOD classes by use of the energy cost differentials for each rating period and the adjusted energy consumption in each period for the various TOD classes. The remaining expenses should then be assigned to the other rate classes by adjusted annual energy consumption.

In making a direct assignment of energy expenses to TOD customers in the cost-of-service study, Staff Witness Mitchell essentially followed through on the energy rate refinements recommended by Staff Witness Wendling, discussed below, acknowledging that such an approach would ". . . more properly assign on a cost-tracking basis the actual energy expenses of time-of-day customers . . ."

Public Service states that it does not at the moment have the information which would be required to allocate energy costs to all customer groups on a time-differentiated basis; i.e., the cost of energy by time period and the customer groups' energy consumption by time period. However, Public Service currently has available to it, information on the consumption of energy by time periods. This information coupled with the monthly average energy costs by time-of-day period, separated between fuel and other production O&M expense as requested by GSA Witness Kiburz and ordered herein to be provided in Public Service's next rate design filing will allow Public Service to determine the energy cost by time period for its time-of-use customers as closely as it is possible to realistically determine. Therefore, the methodology recommended by Staff Witness Mitchell, which used the time-of-use rate in conjunction with consumption by time period is not necessary at this time.

C. Allocation of Other Production Expenses - Operations  
and Maintenance

Public Service classifies fuel expense as energy related, while purchased power and wheeling expense are allocated between demands and energy on an as-billed basis. The remaining O&M expense, other production O&M, are classified by Public Service as all energy related.

GSA Witness Kiburz testified that other production O&M includes certain plant and plant operating expenses which should be classified as demand related. He argues that those aspects of other production O&M which are fixed and do not vary with plant output should be demand-related expenses. Thus, steam plant operating expense (excluding fuel) which is a fixed expense, he contends should be classified as demand related. Similarly, Mr. Kiburz argues that portions of expense related to the maintenance of steam plant structures which would be classified in FERC Account No. 511 (Maintenance of Structures) is also demand related.

In addition, Mr. Kiburz believes that allocation to demand should also be given to operating expense by hydro-generating plants and internal-combustion plants, except fuel. He noted on cross-examination the classification of hydro generating plant as demand related is particularly appropriate where the hydro plant has dependable capacity such as Public Service's Cabin Creek Unit which is a pumped storage unit. Mr. Kiburz contends that even where a hydro plant is considered to be run of the river, it is appropriate to treat some or all of the operating expense of that plant as demand related when there is a reservoir located there allowing for storage and some ability to control the use of the hydro resource.

The impact of classifying these fixed other production O&M expenses as demand related, rather than energy related, was calculated and set forth by Mr. Kiburz in Exhibit II-67, page 8. Mr. Kiburz allocates 60 percent of other production O&M to demand as recommended in the National Association of Regulatory Utility Commissioners (NARUC) allocation manual. The 60 percent factor for attributing other production O&M to demand is a general standard recommended by NARUC on the basis of operations of utilities nationwide. GSA argues that Public Service has not provided data which would show that some other percent allocation would be more appropriate for its operations and that there is nothing in the record which contradicts Mr. Kiburz's testimony regarding the proper allocation of other production O&M expense nor of his assignment of 60 percent of that expense to demand.

The allocation of other production O&M, whether the allocation is all to energy, as proposed by Public Service, or is split between demand and energy on a 60-40 percent basis, is arbitrary inasmuch as neither method is precise. On balance, we find that it is not appropriate to change the allocation of other production O&M expenses from the method presently used by Public Service which allocates these expenses to energy. However, the Commission does believe it would be appropriate for Public Service, in its next rate case, to allocate other production O&M expenses on an energy only basis and on a demand and energy basis which reflects allocations which may be appropriate for its system for those production O&M expenses which are fixed and do not vary with plant output.

#### D. Allocation of Customer Service and Sales Expense

Public Service allocates customer service and sales expense on the basis of energy sales as adjusted. The Commission approved this allocation in I&S 1425.

GSA contends that customer service and sales expense should be assigned on the basis of customer ratios rather than on the presently used basis of energy sales. Public Service appears to agree with GSA in this regard. GSA would weigh a large customer at a 100 to 1 ratio vis-a-vis a residential customer. GSA did not propose any ratios between the 100 to 1 (large industrial customer vis-a-vis residential customer) ratio and the 1 to 1 (residential vis-a-vis residential) ratio. In other words, the GSA proposed 100 to 1 ratio did not take into account customers whose size is smaller than the large industrial customer but larger than the residential customer. In any event, the GSA proposed 100 to 1 ratio is no less arbitrary an allocation than the energy sales allocation already utilized by Public Service.

Accordingly, in this Docket, the Commission will continue to use the energy sales basis of allocating customer service and sales expense. In the event any of the parties are able to come forward with a less arbitrary allocation methodology with respect to customer service and sales expense in the next general rate case, the Commission, of course, will consider it.

#### E. Allocation of Customer Advances

Historically Public Service has allocated accumulated monies in its Customer Advances Account (electric) on the basis of "total net plant" allocations. Total net plant is comprised of four categories of rate base cost: net production investment, net transmission investment, net distribution investment and net common and general investment. Individually, each of the totals for these four categories is allocated to customer classes on a different or varying proportional basis. For example, 40 percent of net distribution is allocated to the residential (total) class and only 30 percent of net production. This latter category makes up more than half of the total net plant and skews the allocation of individual items made on such a basis.

Witness George J. Sterzinger, who appeared for Intervenor Blackburn, Shearer and Marquez, testified that the present method of allocation of customer advances is not appropriate. In the view of Witness Sterzinger, customer classes' responsibility for total net plant has no relationship to the derivation of customer advances, and as such lacks any cost-causal connection. Public Service admits that no monies included in its Customer Advances Account have been contributed for production plant and that the majority of such dollars has been derived for distribution plant investment. Mr. Sterzinger testified that to allocate customer advances fairly, amounts should be directly assigned to contributing classes. In the event of insufficient accounting detail to perform direct assignments, allocation on the basis of net distribution system would provide a more accurate proxy of causal class cost responsibility for customer advances than would total net plant, including net production plant.

Mr. Sterzinger stated, and we agree, that allocation on a net distribution plant basis would be more consistent with the Commission's policy of making direct allocations of certain transmission or distribution system specifically dedicated to the use of single large customers. Accordingly, we shall hereinafter order that Public Service allocate its customer advances for the Electric Department on the basis of specific class assignment where the detailed data exists or is reasonably available and on the basis of "net distribution plant" allocations in its cost-of-service study where such detail is unavailable.

F. Allocation of Excess Demand for Curtailable Rate Customers

Mr. Sterzinger, testifying on behalf of Intervenor Blackburn, Shearer and Marquez, suggested a modification of the Public Service proposed AED cost methodology with respect to CF&I Steel Corporation's

curtailable load. This rate presently reflects no excess demand for cost allocation purposes in recognition of the benefits to Public Service and its customers resulting from the curtailability of the load for up to 15 hours per week, not to exceed 600 hours annually. Mr. Sterzinger testified that the exemption of CF&I from an excess demand allocation results in CF&I being granted a considerable rate discount. Mr. Sterzinger recommends that the benefit to Public Service and its customers resulting from the curtailability of CF&I Steel Corporation's controlled load be recognized in some way other than a forgiveness of CF&I Steel Corporation from an excess demand allocation. However, Mr. Sterzinger did not recommend a specific mechanism for reflecting the benefit of CF&I's curtailability. In the absence of a specific alternative recommendation, and in view of the fact there was no evidence to show that CF&I Steel had not, in fact, been curtailed, the Commission finds that Public Service's present AED cost allocation methodology for CF&I Steel Corporation and other interruptible customers should not be changed in this Docket.

We would also note that even though it is alleged that Public Service does not have much of an incentive to interrupt CF&I Steel Corporation or other interruptible customers in view of its ability to purchase power coupled with its rapid recovery of such costs through the Electric Cost Adjustment (ECA) tariff, there was no proof offered that in fact this was the case during the test period.

#### G. Street Lighting Settlement Agreement

Public Service and the Cities of Lakewood, Arvada, and Westminster, Colorado, entered into an Amended Settlement Agreement with respect to matters involving street lighting. The Amended Settlement Agreement was served upon the Commission and the other parties in this Docket and all parties were given the opportunity

to comment upon the proposed Amended Settlement Agreement which Public Service and the Cities requested that the Commission approve. No comments were filed by any of the other parties. The Commission has examined the Amended Settlement Agreement between Public Service and the Cities as it relates to capital costs for street lighting poles, overhead lights and underground lights, the customer-contributed rate, the rate options between the SL-1 and SL-2 rate schedules which will be available to the Cities, and the matters involving current and proposed rate treatment of street lights on state highways, charges for parts for street light repair, etc. The Commission states and finds that the Settlement Agreement, which is attached to this Decision in full as Appendix C, sets forth a reasonable resolution of the issues between Public Service and the Cities and should be approved.

The Commission commends Public Service and the Cities for their initiative in entering into the Amended Settlement Agreement which had the effect of reducing the hearing time otherwise necessary in this Docket and reducing the number of issues that otherwise would have had to have been decided by the Commission.

The Joint Motion for Approval of the Amended Settlement Agreement is attached to this Decision as Appendix B and the Amended Settlement Agreement is attached to this Decision as Appendix C.

#### IV.

##### RATE DESIGN - ELECTRIC

###### A. Demand and Energy Differentials

In I & S 1425, the Commission instituted TOD rates in Colorado for large customers with the anticipation that such rates would result in load shifting from potential on-peak to off-peak, and also curtail future load growth. The Commission selected three rating periods consisting of shoulder, peak and off-peak periods, respectively. The

Commission also selected two seasonal rating periods per year which, coupled with the three daily time periods, represents a balancing of both the cost characteristics of Public Service's load curve and reasonable simplicity and understanding. For purposes of review the seasonal periods, and the daily rating periods are as follows:

<u>SUMMER</u>	(April 15 through October 14)
<u>Peak Hours:</u>	11 a.m. - 6 p.m. weekdays
<u>Shoulder Peak Hours:</u>	8 a.m. - 11 a.m. and 6 p.m. - 10 p.m. weekdays
<u>Off-Peak Hours:</u>	10 p.m. - 8 a.m. weekdays and all hours on weekends and holidays
<u>WINTER</u>	(October 15 through April 14)
<u>Peak Hours:</u>	4 p.m. - 10 p.m. weekdays
<u>Shoulder Peak Hours:</u>	8 a.m. - 4 p.m. weekdays
<u>Off-Peak Hours:</u>	10 p.m. - 8 a.m. weekdays and all hours on weekends and holidays

In I&S 1425, the Commission used the Base-Intermediate-Peak (BIP) method in order to determine the peak/off-peak demand differential. In that Docket the Commission adopted the Staff BIP formula with the resultant demand differential as follows:

Peak/Off-Peak	=	1.26
Shoulder/Off-Peak	=	1.08
Peak/Shoulder	=	1.17

The Commission also adopted the Staff proposed energy cost differential based upon the following formula:

Energy Cost Differential Shoulder/Off-Peak	=	$\frac{(1/3 \text{ base} + 1/2 \text{ intermediate})}{1/3 \text{ base}}$
Energy Cost Differential Peak/Off-Peak	=	$\frac{(1/3 \text{ base} + 1/2 \text{ intermediate} + \text{peaking})}{1/3 \text{ base}}$



The Staff formula and the financial figures supplied by Public Service in I & S 1425 yielded the peak/off peak energy cost differential of 1.84 and a shoulder/energy cost differential of 1.33.

In this proceeding Staff recommends that certain refinements be made to the BIP method for designing the Company's TOD rates. In particular, it is recommended that the demand costs of firm purchased power should be included in the calculation of the demand differentials, and the energy costs of firm and non-firm purchases should be included in the calculation of the energy differentials. The GSA and AMAX agree with these recommendations.

Mr. Wendling testified that his review of the firm purchased power contracts of Public Service and of the operating logs of the Company indicate that these firm purchases should not "in total" be classified as base generation. Instead, firm purchased power is "firm" only in that the supplier is obligated to make available the specified capacity and energy, and Public Service is obligated to pay for said capacity and energy. Public Service, however, has, in most cases, certain freedom as to the schedule of the deliveries. It is the exercise of this freedom that makes it inappropriate to place all firm purchased power in the base generating classification, since the intent of the BIP methodology is to assign capacity to the period in which it is used (Exhibit II-B, p. 4). He also testified that the current formula improperly includes firm purchased energy costs in the demand differential formula. Mr. Wendling's refined differential formulae properly assigned demand and energy-related costs. They also appropriately classify the firm and non-firm power purchases as to type of purchase: base, intermediate and peak.

The demand and energy differentials developed by Mr. Kiburz assign all of the firm purchased demand costs to the base classification. He assigns all firm purchased energy costs to the base period, and all non-firm purchased energy costs to the intermediate period. Mr. Kiburz testified that these assignments were based upon "some gross assumptions" and that these assignments were not based upon review of the Company's logs, nor any statistical sampling. Mr. Kiburz did, however, agree that if he had available the data generated from Mr. Wendling's sampling procedure, it "would definitely be considered" in the assignment of firm purchased demand and energy costs, and non-firm purchased energy costs.

Based upon Mr. Wendling's analysis, the Staff proposes the following demand differentials:

On-peak/Off-Peak	=	1.5088
Shoulder/Off-Peak	=	1.1703

The Staff also proposes the following energy differentials:

Peak/Off-Peak	=	1.7313
Shoulder/Off-Peak	=	1.4251

In order to facilitate accurate demand and energy charge differential calculations, the Staff recommends that Public Service be ordered to maintain the following data: 1) to derive and use the "Net Public Service Company System Hourly Loads" and not Control Area Loads, and 2) to keep accounts by hour of the firm and non-firm purchases by KWH, and costs (demand and energy) by source. The Staff recommends that this data be made available on computer data files so that accurate summation by time-of-day period may be accomplished.

The Company time-differentiated the test-year customer service expense of \$3,185,586. The Staff submits that this cost is not a function of generation mix, but is an overhead expense.

Hence, the Staff recommends that customer service expense should be spread uniformly.

Also, the Company's time-differentiated energy costs were derived by use of annual sales to TOD customers only. The Staff contends that this technique fails to share appropriately the benefits of shifts of energy usage by TOD customers. The Staff recommends that time-differentiated energy costs should be derived using the Public Service total system load by rating period. We agree. Mr. Wendling testified that this recommendation would insure that these TOD energy rates would track costs and correctly assign benefits from energy usage shifts (Exhibit II-E, p. 8). The Staff's determination of energy costs for TOD rates appears in Exhibit II-53.

Finally, Mr. Wendling testified that the Company's calculation of demand and energy differentials for the residential and secondary commercial and industrial thermal storage rate classes ignored the BIP methodology. He recommends a modified BIP methodology reflecting a two season, two rating period rate design (Exhibit II-E, pp. 8-9). Using the same methodology he used in Exhibit II-52, Mr. Wendling calculates the following differentials for these rate classes:

Demand Differential	
Peak/Off-Peak	= 1.4527
Energy Differential	
Peak/Off-Peak	= 1.7709 ( <u>Id.</u> )

In summary, the Staff submits that its refinements to the BIP methodology for determining the demand and energy differentials for TOD rates and its energy cost determination be adopted in this case. It is contended that these refinements to TOD rate design will improve the cost tracking of TOD rates, will assist in implementing the Commission's regulatory objectives for TOD rates

and are but another "phase" in the cautious implementation of TOD rates in Colorado. The Staff submits that these differentials, which are higher than those found in I & S 1425, will provide the appropriate price signals to TOD customers and an incentive for shifting load off-peak, with the resulting potential for conservation of capital and benefits to all customers of the Company.

The Commission states and finds that the Staff proposed refinements to the BIP method for designing TOD rates are appropriate and should be adopted.

B. Demand Ratchet

In I&S 1425 Public Service proposed a 75 percent demand ratchet applicable to on-peak demand for the Climax and Henderson classes. Prior to that time the tariff for Climax and Henderson provided for a 25,000 KW monthly minimum demand billing provision with the further provision that if off-peak demand exceeded on-peak demand by 150 percent, all demand in excess of 150 percent would be added to the maximum demand for billing demand determination. The Commission in I&S 1425 indicated that there was no clear indication, either way, whether the demand ratchet is conducive to, neutral to, or counterproductive to conservation. However, in that docket we stated that on the basis of the limited data which was then presently available we would permit the demand ratchet as proposed by Public Service for the GLP, LLP, and contract customers to become effective. At the same time, the Commission stated it desired that Public Service closely monitor the operation of the 75 percent demand ratchet with respect to those customers, in order to obtain the data from which it could be ascertained whether the 75 percent demand ratchet was operating in favor of, or against conservation. We stated that the resulting data should be presented by Public Service in its next general rate case, the present Docket.

Public Service Witness Keyser sponsored Exhibit II-19 which indicates that for the SG, PG and TG groups, ratcheted demands exceeded measured demands by only 1.73 percent. Based on these data, Mr. Keyser concludes that the ratchet is having the conservation effect of generally inducing customers to keep their maximum demands relatively leveled. Staff Witness Mitchell finds the evidence inconclusive, however, and suggests that, if the Commission is still interested in the conservation implications of the demand ratchet, a more detailed study should be undertaken. Mr. Mitchell believes a demand ratchet, however, can perform a revenue maintenance function.

Public Service continues to believe that the historical application of the demand ratchet has been one of the essential ingredients in achieving the favorable load characteristics which the Company system enjoys. However, Public Service does acknowledge that at the present time there is little empirical evidence to prove this belief (just as there is none to disprove it). Public Service believes that further studies to determine the conservation effects of the demand ratchet could not easily be effectuated. Public Service states that most of its customers have been on ratchets for many years and that it would be difficult, if not impossible, to determine their consumption patterns without a ratchet.

However, we recognize that the historical relationship is not applicable to customers to whom the ratchet newly was applied in I & S 1425. Public Service believes that the attempt to determine the effect on Public Service's customers by comparing the "similarly situated" customers of other utilities with and without demand ratchets would be futile. Although Public Service believes that the effect of the 75 percent demand ratchet upon conservation is inconclusive, and that further studies also would prove to be inconclusive, nevertheless

it does believe that the demand ratchet performs a valuable revenue maintenance function. It is true that Public Service has built capacity and arranged for firm purchased power on the basis of its customers' requirements. Were a large customer suddenly to reduce its demand considerably, Public Service would, without a ratchet, lose the fixed cost coverage provided by that customer's demand charge until other loads developed to fill in the gap. It is equally true that were the situation serious enough, the Company might be impelled to file for rate relief earlier than would have been necessary had the ratchet not been deleted. Inasmuch as the demand ratchet applies only to Public Service's larger customers and it is these customers whose significantly decreased consumption would adversely affect revenue stability, the demand ratchet as thus applied is tailored to carry out the revenue maintenance function. Given the fact that a customer's ratchet is recomputed on the basis of an eleven-month period, and given the fact that ratcheted demand is only 75 percent of the highest measured demand over the last eleven months, Public Service does not agree with the suggestion that the ratchet guarantees rather than maintains revenues.

AMAX believes that the various analyses set forth by witnesses in this Docket were totally insufficient to assist the Commission in reaching an informed judgment on the question of the conservation effects of the demand ratchet. AMAX believes that in the event the Commission were to conclude that the demand conservation study which it ordered in I&S 1425 is either impossible or nearly impossible to conduct, then the 75 percent demand ratchet should be rescinded and that revenue maintenance, if meeting a sufficiently significant goal, should be achieved with the minimum billing demand provisions of the tariffs which were in existence prior to the approval of the 75 percent demand ratchet in I & S 1425. AMAX contends, however, that if the Commission were to withhold final judgment on the ratchet until a

comprehensive analysis is performed, then the Commission should require Public Service to submit a proposed study plan and permit interested customers and the Staff to comment on the proposed plan prior to its approval.

Frankly, the Commission is no better informed at the conclusion of the hearings in this Docket than it was at the conclusion of I & S 1425 as to the conservation effects, if any, of the 75 percent demand ratchet. We are not convinced that Public Service made a bona fide attempt to comply with our request in I&S 1425 that it study the conservation effects of the 75 percent demand ratchet and report the data to the Commission in the next rate case. We are not convinced that the expertise which is available to Public Service is incapable of designing a study plan which will enable this Commission, the Company, and Public Service customers to ascertain what the conservation effects of the 75 percent demand ratchet have been. We do believe that it is premature to drop the 75 percent demand ratchet at this time inasmuch as it has been in effect for less than one year. We agree with AMAX that Public Service should be required to submit a proposed study plan in regard to the conservation effects of the 75 percent demand ratchet. We shall hereinafter order that Public Service do so within ninety (90) days of the effective date of the order herein and that the plan be submitted also to the Staff, the parties herein, and other interested customers for comment prior to its approval.

If, on the other hand, the purpose or the primary purpose of the demand ratchet is not, as previously stated, conservation but, rather revenue maintenance, it should be so stated by Public Service and should be demonstrated that this means, rather than minimum billing or some other means, is best designed to accomplish this end.

### C. Thermal Storage Rates

Staff Witness Wendling testified that the Company's calculation of demand and energy differentials for the residential and secondary commercial and industrial thermal storage rate classes ignored the BIP methodology. He recommends a modified BIP methodology reflecting a two season, two rating period rate design (Exhibit II-E, pp. 8-9). Using the same methodology he used in Exhibit II-52, Mr. Wendling calculates the following differentials for these rate classes:

Demand Differential  
Peak/Off-Peak = 1.4527

Energy Differential  
Peak/Off-Peak = 1.7709 (Id.)

Public Service does not take issue with the Staff suggestion that the BIP methodology used for other time-of-day rate classes should be used for these classes also, modified to reflect two rather than three time periods. Public Service believes, however, that its application of the BIP methodology, rather than those advanced by the Staff and others is the appropriate one to use. Public Service also believes it would be desirable to designate the same off-peak hours for all TOD customers. We find that the time-of-use classifications and the differentials calculated by Staff Witness Wendling, which are set forth above, are reasonable and should be adopted for the residential, and secondary commercial and industrial thermal storage rate classes.

### D. Irrigation rates

#### 1. Level of increase.

Public Service's cost-of-service study indicated a rate to increase the revenues collected from the Irrigation Pumping (IP) class by 52.88 percent in order to bring it to a uniform rate of return of 10.84 percent. In past proceedings, when large increases have been indicated, Public Service, in the interest of rate continuity,



has proposed a less-than-total implementation of such an increase. However, Public Service proposed the full increase for the IP class in this Docket believing that this would be in accord with Commission policy.

Staff Witness Mitchell testified that it was his opinion that a 52.88 percent increase to the IP class was too much at one time, and he proposed that the increase, in this Docket, be limited to 28.5 percent with the remaining increase recovered in the next two rate cases.

In rebuttal, Public Service agrees that the revenue increase to the IP class should be 28.5 percent in this Docket. Public Service Witness Keyser, however, opposes any determination in this Docket regarding future IP percentage increases. It is true that the cost-of-service studies in future dockets may change the IP revenue requirement. We agree with the Staff that the rate of return for the IP class should be brought up to the Company's overall rate of return by the conclusion of its next two general rate cases so as to avoid prolonged interclass cost subsidization. The precise magnitude of the increases, however, will not be determined in this Docket. Inasmuch as Public Service does not object to the suggestion made by the Staff that the IP increase be limited in this Docket to 28.5 percent, so long as the Company is able to collect the dollar difference from the balance of its customers as reflected on Exhibit II-69, the Commission will approve the limitation of 28.5 percent herein as proposed by the Staff.

## 2. Elimination of 25 horsepower minimum.

Under Public Service's present and proposed tariffs, only those IP customers having connected loads in excess of 25 horsepower are eligible for the interruptible rate. Staff Witness Mitchell proposes that either the 25 horsepower minimum requirement be eliminated, or that the IP rates be redesigned. Company Witness Keyser testified

that Public Service believes the elimination of the 25 horsepower requirement is the more acceptable alternative and that Public Service is agreeable to making the interruptible IP rate available to all IP customers regardless of connected load. The Commission states and finds that the Staff proposal, agreed to by the Company, that the 25 horsepower minimum requirement be eliminated and that the interruptible IP rate be made available to all IP customers regardless of connected load should be adopted.

E. Weather Normalization of Kilowatt Sales

Staff Witness Wendling proposes that Public Service normalize its adjustment of space heating kilowatt hour sales, which concept is essentially identical to the process that the Company now performs for natural gas. Certain electric sales to the Company's customers are used for space heating. When the weather is colder, more kilowatt hours are consumed. Conversely, during warmer weather fewer kilowatt hours are consumed. Over a year's period this total consumption may vary significantly from a cold year to a warm year.

The capital investment to serve a customer is made only once and does not vary annually with the kilowatt hour consumption pattern. Similarly, the revenue requirement for capital recovery remains unchanged. The apparent problem arises when there are too few or too many kilowatt hour sales over which to spread the revenue requirement. This variation causes over or under recovery of revenues by Public Service while giving false price signals to the consumers.

In order to resolve the weather normalization adjustment issue with respect to the next general rate case of Public Service, Staff and Public Service entered into a Stipulation which was entered into the record as Exhibit II-54. The terms of the Stipulation, extracted from that Exhibit are as follows:

"1. PSCo agrees that conceptually electric space-heating kilowatt hour sales, revenues, and power costs should be weather normalized in its electric cost of service study.

2. The Staff and PSCo agree that in its decision in this Phase II, the Commission should not order a particular methodology for performing weather normalization adjustment for electric space-heating.

3. PSCo agrees that in the next general rate case, PSCo will include weather normalization adjustment for electric space-heating for RH and RD rate classes in its cost of service study.

4. PSCo agrees that before preparing an electric cost of service study with weather normalization adjustments for electric space-heating for the RH and RD rate classes, it will perform a study to determine the appropriate weather normalization adjustment methodology. PSCo agrees that in performing this study on weather normalization methodology, it will seek the full cooperation and participation of the Commission Staff in such study.

5. If PSCo and the Staff are unable to agree upon the appropriate weather normalization adjustment methodology for use in the next general rate case, each reserves the right to present its own weather normalization adjustment methodology in that case.

6. The Staff and PSCo request that the Commission include the terms of this Stipulation, if approved, into its Phase II order in this case."

The Commission states and finds that the above Stipulation between Public Service and the Staff represents a reasonable resolution of the weather normalization adjustment issue for this Docket and that it should be approved.

However, the Commission believes that Public Service should apprise the Commission, the Staff, and the parties herein as to the detailed weather normalization which it intends to use in its next general rate case. Notification of this methodology should be given on or before April 1, 1983.

COST OF SERVICE - GASA. United vs. Seaboard

Beginning with I & S Docket No. 1330, the Commission ordered Public Service to utilize the so-called United methodology for allocating fixed costs. That methodology allocates 25 percent of the fixed costs based on demand and 75 percent of the fixed costs based on commodity. In this Docket, Public Service proposes to change to the so-called Seaboard methodology. This methodology allocates 50 percent of the fixed costs based on demand and 50 percent of the fixed costs based on commodity. The Seaboard methodology was adopted by the Federal Power Commission in Re Atlantic Seaboard Corporation et. al., 94 PUR NS 235 (1952). The United methodology was adopted by the Federal Power Commission in Re United Gas Pipe Line Company, 3 PUR 4th 491 (1973).

Public Service Witness Moore testified in support of the Company's proposal to use the Seaboard methodology. He quoted the Commission's reasons for utilizing the United methodology in I & S Docket No. 1330, including the following: "the demand factor declines in importance where deliveries are limited by the amount of natural gas supplies available instead of the capacity." Mr. Moore argues that since gas supplies have improved since then, a change to the Seaboard methodology is warranted. However, while the logic in the quote above applies where gas supplies are limited, it does not follow that the converse is true. Neither system capacity nor supply is a limiting factor in deliveries at present. Moreover, it is well recognized that the price of natural gas is an administered, rather than a market, price, set administratively under the Natural Gas Policy Act of 1978, of which the Commission takes official notice. The underlying justification for the current level of prices is an

assumed scarcity. The price has been set so as to give consumers a price signal concerning gas in order to influence their usage. It is important that a consistency in the signal sent to consumers be maintained. If it is appropriate to set the level of prices based upon an assumed scarcity, then it also is appropriate that the cost allocation methodology adopted also reflect that principle. The level of rates and their design should be sending similar price signals to the consumer. The consumer should not be confronted with inconsistent signals, one with respect to the level of prices and another with respect to cost allocation. The utilization of the United cost allocation methodology should therefore be continued.

Moreover, interruptible customers have not been interrupted during or since the 1978-80 heating season. Therefore, they have had the benefits of firm service. A change to an allocation method that reduces their cost responsibility is unwarranted.

Mr. Moore also notes that because of the increased supply there is a "trend away from the United formula. . .at the Federal regulatory level" (Exhibit II-8, p. 7). Mr. Moore testified on cross-examination that he was aware of three cases at the federal level where the Seaboard methodology was recently approved. First, it is an exaggeration to state that three cases constitute a "trend." Second, Mr. Moore believes that these decisions are not yet administratively final. Most important, there is no evidence that the system characteristics and other operating circumstances of the companies involved in the federal cases are similar to those of Public Service.

Mr. Moore also contends that because the Seaboard methodology was recently approved for Western Slope Gas Company in Decision No. R81-1835, it is also appropriate for Public Service. All of Public Service's gas supplies are provided directly by two pipeline companies, Colorado Interstate Gas (CIG) and Western Slope Gas Company (Western

Slope). CIG also supplies Western Slope with gas, and directly or indirectly supplies Public Service with approximately 90 percent of its natural gas requirements. CIG currently uses the United methodology for its gas cost allocation. However, Staff Witness Orendorff testified that Public Service's allocation methodology is unaffected by the allocation method used by its supplier, since Public Service allocates its cost of purchased gas exclusively on a commodity basis (Exhibit II-G, pp. 4-5).

Mr. Orendorff recommends that the Company retain the United methodology for allocating fixed costs since it produces more equitable results. The United methodology results in a more uniform rate of return among all the customer classes. Under the Seaboard methodology, the rate of return for the interruptible class is almost double that of the other classes, and the interruptible class will receive no rate increase in this Docket.

The rates of return in Exhibit II-8 for the interruptible class under the Seaboard methodology range from 10.55 to 14.06 percent. If those rates of return remained approximately the same in the next rate case, and the authorized rate of return were increased, for example, to 12 percent, then Mr. Moore agreed that interruptible customers in rate areas 1, 2 and 4 would again receive no rate increase.

During I & S No. 1330, the Company expressed some concern that the United methodology could result in industrial customers leaving the system which would increase the overall cost of service to the remaining customers. Mr. Moore testified that since 1976, the number of interruptible customers declined by 15 percent. However, he could not demonstrate that the loss of customers was due to the United methodology. He testified that some of the interruptible customers converted to firm service, and that general economic conditions could also cause some interruptible customers to leave the system. Moreover,

Mr. Orendorff demonstrated with Exhibit II-60, that the Company has forecasted an increase in sales to interruptible customers during 1982, 1983 and 1984.

Mr. Orendorff also testified that the prices of the most used alternative fuels in the Denver area are still significantly higher than the price of natural gas under the United methodology for interruptible customers. The price per MMBTU for #2 fuel oil is \$6.68, and for propane \$8.00, compared to \$4.72 for natural gas. Based upon these prices it is unlikely that interruptible customers would switch to alternate fuels.

The Staff position in favor of continued use of the United methodology is supported by Intervenor Blackburn, et. al., whereas AMAX supports Public Service's position in favor of the Seaboard methodology. AMAX argues that the Staff's "end result" approach in determining the appropriate gas cost allocation methodology is conceptually flawed and not supported by the record. However, it is axiomatic that it is the result reached, not the method employed which determines a just and reasonable rate. Federal Power Commission v. Hope Natural Gas, 320 U.S. 591 (1944). Moreover, we find that the record in this Docket, and in particular Exhibits II-8 and II-10, amply demonstrates the inequities that would result from a change to the Seaboard methodology. Accordingly, we are not persuaded that the Seaboard methodology should be adopted in allocating fixed gas costs.

## VI.

### RATE DESIGN - GAS AND MISCELLANEOUS MATTERS

Public Service proposes to combine rate areas 4 and 5, with respect to its gas customers, and to change certain rate forms from an MMBTU format to an MCF format. Public Service states that these proposals are being made so it can track rate changes implemented by Western Slope Gas Company as a result of Investigation and Suspension Docket No. 1529. Public Service also proposes that

the SS-1 and C-1 rates be combined since both of these rates are for similar service with similar curtailment criteria. No parties opposed these proposals by Public Service, and the Commission states and finds that the same are reasonable and should be adopted.

## VII.

### OTHER MATTERS

#### A. Steam Rates

Public Service Witness Heckendorn presented Exhibit No. II-20, which was a two-page exhibit comprising the rates for steam heating services proposed by Public Service to produce the increased steam revenues allowed in Phase I of these proceedings. These are the rates which the Company seeks to have adopted for steam service in Phase II of this Docket. Public Service proposes to eliminate blocking and to state the rates in a more simplified form. The general rate for steam service has evolved over many years into the present rate form which has a minimum usage block, four declining usage blocks and a tail usage block. Public Service's proposed steam rates contain only a service and facility charge and a usage charge. This proposed change in rate form is consistent with Public Service's past practice of eliminating unnecessary blocking wherever possible in gas and electric rates. The Commission also has encouraged, and in some cases required, that rates be stated in this form.

Since service and facility costs have previously been included in the minimum usage in the first block, the individual customer effect of separately stating these costs is relatively small. Large steam users will be increased somewhat more than the average and small users will have smaller than average increases, or in some cases decreases. The largest individual increase to any customer on a pro forma basis will be 8.37 percent compared to the overall increase of 1.93 percent.



The Commission states and finds that the proposed steam rates submitted by Public Service, and unopposed by any party in this proceeding, are reasonable and should be approved.

B. Data Requests

1. Staff data requests.

The Staff proposes, in order to facilitate accurate demand and energy charge differential calculations, that Public Service be required to maintain the following data:

a. To derive and use the "net Public Service system hourly loads," and not control area loads.

b. To keep accounts by hour of the firm and non-firm purchases by KWH and costs (demand and energy) by source.

This data should be made available on computer data files so that accurate summation by time-of-day period may be accomplished.

(See Exhibit No. II-E, p. 7).

Public Service does not object to complying with the first data request of the Staff on a scheduled (as opposed to actual) basis and it cautions that the results in part will include FERC as well as PUC jurisdictional loads. The Commission has been informally advised by the Staff that it is agreeable to accede to Public Service's format in complying with its first data request.

With respect to the second data request of Staff, Public Service urges the Commission not to require Public Service to comply with it. On balance, the Commission finds that although Public Service currently may have no need for this information, in the form requested by the Staff, that it is appropriate that the information be made available to the Staff in the form requested by it. Accordingly, we shall hereinafter order Public Service to furnish to the Staff of the Commission a report of its accounts by hour of the firm and non-firm purchases by KWH and costs (demand and energy) by source. This data shall be made available on

computer data files so that accurate summation by time of day period may be accomplished.

The Commission agrees that the Staff of the Commission should be provided with the data requested by it, and we shall hereinafter order that Public Service submit the requested data, on a periodic basis, to the Commission and its staff.

## 2. Federal Agencies data requests.

GSA Witness Kiburz recommends that the cost allocation methodology be modified by assigning energy expenses to TOD classes based on adjusted energy consumption in each time period. In order to do a proper analysis reflecting the impact on TOD customers, Mr. Kiburz stated that more system information from Public Service is necessary. He testified that a proper analysis would require, at a minimum: (1) monthly marginal energy costs by time-of-day period, separated between fuel and other production O&M expense; (2) monthly average energy costs by time-of-day period, separated between fuel and other production O&M expense; and (3) system energy production and purchases by time-of-day period. Mr. Kiburz stated that in order to permit the proper future allocation of energy cost, the Commission should require Public Service to provide this information as part of its net rate design filing. The Commission is unclear as to what GSA means by (1) above; however, we do believe that GSA's data requests (2) and (3) are appropriate and the same should be implemented by Public Service in its next rate case.

## VIII.

### CONCLUSION

We stated in I&S 1425 that the Phase II hearings in that docket had been the most comprehensive Company-specific hearings to have been held in this State with respect to rate design and cost of

service issues. The Phase II hearings in this Docket, by way of contrast, were in the nature of refinements, rather than the setting of broad new rate design policies.

It reasonably can be expected that cost of service and rate design issues will evolve over time, and that the resolution of these same issues also will evolve from year to year as more data is obtained by the Company and others.

To the extent that specific issues have been raised by the parties which are not addressed specifically in this decision, the Commission states and finds that the particular treatment advanced with respect thereto by one or more of the parties does not merit adoption by the Commission in this docket.

#### O R D E R

##### THE COMMISSION ORDERS THAT:

1. Public Service Company of Colorado shall file appropriate tariff sheets to reflect and implement the cost of service and rate design principles set forth in this decision at the revenue level found in Phase I of this Docket for the Gas, Electric, and Steam Departments, respectively. Said tariffs shall be filed with the Commission on or before October 1, 1982, and shall set forth an effective date therein no earlier than thirty (30) days subsequent to the filing thereof. Said tariffs shall make reference to the decision number herein. Any one or more of said tariff sheets shall be subject to the further order of the Commission.

2. The tariff riders filed by Public Service Company of Colorado pursuant to ordering paragraphs 4, 5 and 6 of Decision No. C81-1999, dated December 1, 1981, shall be continued in effect until the effective date of the tariffs filed pursuant to ordering paragraph 1 herein, subject, however, to further order of the Commission.

3. Public Service Company of Colorado, within ninety (90) days of the effective date of the order herein, shall submit to the Commission in six copies, a comprehensive plan which is designed to enable this Commission, Public Service Company of Colorado, and customers of Public Service Company of Colorado to ascertain what the conservation effects of the 75 percent demand ratchet have been, or will likely continue to be. Copies of the plan shall be submitted to each party in this Docket and each customer of Public Service Company of Colorado who are presently subject to the 75 percent demand ratchet. Any of the foregoing parties or customers may submit comments to the Commission on the plan as proposed by Public Service Company of Colorado within thirty (30) days after said plan has been submitted to the Commission. The Commission thereafter will approve the plan as submitted, or make modifications thereto.

4. Public Service Company of Colorado shall maintain the following records: (1) its total system loads on an hourly basis as scheduled; and (2) accounts by hour of firm and non-firm purchases by KWH and costs (demand and energy) by source. This data shall be made available on computer data files so that accurate summation by time-of-day period may be accomplished, and shall be made available to the Staff of the Commission upon request thereof.

Public Service Company of Colorado shall furnish to the General Services Administration, and to Staff of the Commission, as part of its rate design filing in its next general rate case the following: (1) monthly average energy costs by time-of-day period separated between fuel and other production operational and maintenance expense; and (2) system energy production and purchases by time-of-day period.

5. The decision and order herein shall be considered to be a final decision subject to the procedural provisions of 40-6-114 and 40-6-115, C.R.S. 1973, as amended.

6. Motions, if any, relating to attorneys' fees and expert witness fees shall be filed with complete time and charges documentation and justifications therefor, on or before October 1, 1982. Said motions will be subject to such disposition as the Commission subsequently may order.

7. This Order shall be effective on September 9, 1982, unless stayed by applicable law.

DONE IN OPEN MEETING the 17th day of August, 1982.

(S E A L)



ATTEST: A TRUE COPY

*Harry A. Galligan, Jr.*  
Harry A. Galligan, Jr.  
Executive Secretary

THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF COLORADO

EDYTHE S. MILLER

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DANIEL E. MUSE

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L. DUANE WOODARD

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Commissioners

APPENDIX A  
Decision No. C82-1271  
August 17, 1982

I & S 1525  
PHASE II

E X H I B I T S

<u>Exhibit</u>	<u>Title and Description</u>
II - A	Direct testimony of PSCo Witness M. E. Giddings
II - B	Direct Testimony of PSCo Witness J. H. Moore
II - C	Direct Testimony of PSCo Witness R. A. Keyser
II - D	Direct Testimony of PSCo Witness J. D. Heckendorn
II - E	Direct Testimony of Staff Witness Warren L. Wendling
II - F	Direct Testimony of Staff Witness Bruce S. Mitchell
II - G	Direct Testimony of Staff Witness Donald W. Orendorff
II - H	Direct Testimony of George J. Sterzinger Witness for Intervenors Blackburn, Marquez and Shearer
II - I	Direct Testimony of Max E. Kiburz, II Witness for Executive Agencies of the USA

APPENDIX A  
DECISION NO. C82-1271  
August 17, 1982

I & S 1525  
PHASE II

<u>Exhibit No.</u>	<u>Description</u>
II - 1	Load Research - Survey Progress Report
II - 2	Load Research Charts
II - 3	Electric Department - Demand Information
II - 4	Gas Tariff
II - 5	Gas Department Cost Allocation Study
II - 6	Gas Cost of Service Narrative
II - 7	Gas Department Rate Design Criteria
II - 8	Gas Department Cost Allocation Study Proposed Increases and Rates of Return
II - 9	Gas Department Spread Sheets
II - 10	Gas Department Comparison of Proposed Increases Under the Seaboard and United Allocation Methods
II - 11	Electric Tariffs
II - 12	Electric Department Cost Allocation Study
II - 13	Electric Cost of Service Narrative
II - 14	Electric Department Cost Allocation Study - Proposed Increases & Rates of Return
II - 15	Electric Department Summary of Cost Allocation Results
II - 16	Electric Department Rate Design Criteria
II - 17	Electric Department Spread Sheets
II - 18	Determination of Demand Charge Differentials
II - 19	Summary of Demand Ratchet Billing Data
II - 20	Steam Tariffs
II - 21	Street and Area Lighting Rates, Rules and Regulations
II - 22	Street Light Rate Design - Revenue and Rate Design, Specific Cost Monthly Rate
II - 23	Sample Rate Calculations and Summary of Cost Factors for Street Light Rate Design
II - 24	Individual Rate Increase Analysis

<u>Exhibit No.</u>	<u>Description</u>
II - 25	Analysis of Net Rate Change Impact on Cities
II - 26	Load Research - Load Factor/Coincidence Factor - 3rd AMAX, Attach. 2, 1 page only
II - 27	Non-coincident Peak Demands - 12 months ended 12/78 - <u>Gas</u> ; Attach 18 to Legal Aid Data Request
II - 28	PSCo Group Maximum Demand Survey, 12 months ending 9/30/81
II - 29	Gas Cost of Service Study Based on "United" Methodology (Compare to II-5)
II - 30	Gas Department - Proposed Increases and Rates of Return Based on "United" Method (Compare to II-8)
II - 31	Total Heating Degree Days Used - 12 months Ending 9/30/81 - Gas Department
II - 32	Normalization Adjustment - Test Period; Gas Department
II - 33	PSCo Letter to PUC, 8/5/81, Responses to Legal Aid Data Request, Includes Attachment 22 thereto, in Phase I of 1525
II - 34	Projected CIG Gas Costs 1980 - 1985
II - 35	PSCo Gas Department Interruptible Consumption During System Peaks
II - 36	Gas Systems Control - Annual Volumes Curtailed by Rate Group
II - 37	FERC Docket RP75-19 (Remand) Texas Gas Transmission Corp. Initial Decision of Administrative Law Judge (30 pages)
II - 38	FERC Docket RP74-4 (Remand) Cities Service Gas Company Initial Decision of Administrative Law Judge
II - 39	FERC Docket 74-41 (Remand) Texas Eastern Transmission Corp. Decision Administrative Law Judge
II - 40	Gas Department Forecast 1981-1985; Residential Class
II - 41	Attachment 6 to First AMAX Data Request, three pages
II - 42	Attachment 3 to Second AMAX Data Request
II - 43	Attachment 26 to Staff Data Request, 2 pages; Calculation of TOD Energy Rates



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I & S 1525  
PHASE II

<u>Exhibit No.</u>	<u>Description</u>
II - 44	Cost of Service Study - Demand Based on Peak and Shoulder Hours
II - 45	Cost of Service Study - Demand Based on Peak Hours Only
II - 46	Distribution Plant Summary 9/30/81 Work Papers
II - 47	Distribution Operation and Maintenance Summary 9/30/81 Work Papers
II - 48	PSCo - Electric - PUC Allocation Factors AED - Test Year - Work Papers
II - 49	Exhibit II - 14 in I & S 1425 Phase II (Proposed Increases and Rates of Return)
II - 50	PSCo Letter Dated 1/21/82 to Lakewood RE: Street Lighting
II - 51	PSCo Summary of Changes to Rating Period of Differentials
II - 52	PSCo Determination of Demand Charge Differentials
II - 53	PSCo Energy Cost Determination
II - 54	Stipulation as to Weather Normalization Adjustment Issue
II - 55	Plot of Maximum Monthly Peak Demands
II - 56	Electric Dept. - Summary of Cost Allocation Results
II - 57	Comparison of Present and Prior Maximum Proposed Percentage Revenue Increases
II - 58	Workpaper - Peak Demands 3 Special Contracts (used in developing page 2 of Exh. 55)
II - 59	Gas Dept. Cost Allocation Study Based on 25/75 Allocation
II - 60	Total PSCo Customers and Sales Report
II - 61	Fixed and Commodity Costs of PSCo Gas
II - 62	Recalculation of AED Allocation Factors
II - 63	P. 4505, Federal Register, Vol. 47, No. 21, Feb. 1, 1982, Rules and Regulations
II - 64	Contracts for Gas at \$8.00/MCF
II - 65	Curtailment of Power Deliveries to CF&I Steel Corporation
II - 66	PSCo Summary of Transmission Time-Of-Day Study Results

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DECISION NO. C82-1271  
August 17, 1982

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PHASE II

<u>Exhibit No.</u>	<u>Description</u>
II - 67	USEA Proposed Cost Allocation Study
II - 68	USEA TT Differentials and Rates
II - 69	PSCo. Electric Dept. Cost Allocation Study

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF COLORADO

IN THE MATTER OF THE PROPOSED	)	
INCREASED RATES AND CHARGES	)	
CONTAINED IN TARIFF REVISIONS	)	INVESTIGATION & SUSPENSION
FILED BY PUBLIC SERVICE COMPANY	)	
OF COLORADO, 550 - 15th STREET,	)	DOCKET NO. 1525
DENVER, COLORADO, UNDER ADVICE	)	
LETTER NO. 826 - ELECTRIC,	)	PHASE II
ADVICE LETTER NO. 324 - GAS, AND	)	
ADVICE LETTER NO. 27 - STEAM.	)	

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JOINT MOTION FOR APPROVAL OF AMENDED SETTLEMENT AGREEMENT

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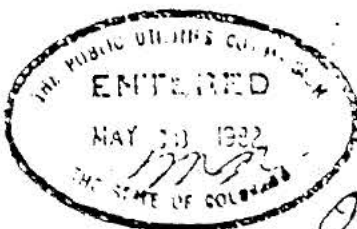
Intervenors the Cities of Lakewood, Arvada and Westminster (the "Cities") and Respondent Public Service Company of Colorado ("PSC or the Company") jointly move that the Commission consider and approve the Amended Settlement Agreement attached hereto as Exhibit A and incorporated herein by reference, and as grounds therefore state as follows:

1. The Cities and PSC have arrived at an Amended Settlement Agreement which resolves all outstanding issues between them and will eliminate the need for presentation of testimony or statements of position on these issues by either the Cities or PSC in this proceeding;

2. The Amended Settlement Agreement provides a workable and equitable restructuring of street lighting rates and will greatly limit and simplify the issues to be litigated by the Commission in Phase II of this proceeding; and

3. The provisions of the Amended Settlement Agreement in no way adversely effect other customers or customer classes.

WHEREFORE, the Cities and PSC respectfully request that the Commission immediately enter an order to be served on all parties of record requesting comments or objections to said Amended



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Settlement Agreement within ten days of said order. Further, the Cities and PSC respectfully request that, upon the expiration of said time period for comments, the Commission issue an order approving this Amended Settlement Agreement and grant such other and further relief as the Commission deems just and proper.

DATED: May 19, 1982.

IRELAND, STAPLETON & PRYOR, P.C.  
Tucker K. Trautman  
John H. Evans

By John H. Evans  
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KELLY, STANSFIELD & O'DONNELL  
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By James R. McCotter  
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of Colorado  
550 15th Street, Suite 900  
Denver, Colorado 80202  
Telephone: 825-3534

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF COLORADO

IN THE MATTER OF THE PROPOSED	)	
INCREASED RATES AND CHARGES	)	
CONTAINED IN TARIFF REVISIONS	)	INVESTIGATION & SUSPENSION
FILED BY PUBLIC SERVICE COMPANY	)	
OF COLORADO, 550 - 15th STREET,	)	DOCKET NO. 1525
DENVER, COLORADO, UNDER ADVICE	)	
LETTER NO. 326 - ELECTRIC,	)	PHASE II
ADVICE LETTER NO. 324 - GAS, AND	)	
ADVICE LETTER NO. 27 - STEAM.	)	

## AMENDED SETTLEMENT AGREEMENT

Intervenors the Cities of Lakewood, Arvada, and Westminster (the "Cities") and Respondent Public Service Company of Colorado ("PSC or the Company") hereby enter into the following Amended Settlement Agreement:

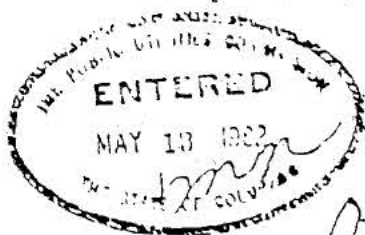
WHEREAS, the Cities are impacted by the proposed restructuring of street lighting services;

WHEREAS, certain issues have been raised in this proceeding as to the equity of the restructuring upon the Cities and others in the street lighting rate class who have made greater contributions of capital upon installation in exchange for lower rates in the future;

WHEREAS, both parties agree that a consolidation and restructuring of the street lighting rates would be in the public interest if done in an equitable manner;

WHEREAS, the parties believe that this Agreement provides a workable mechanism for assuring the equity of the restructuring without any increase in rates to any other rate class or any other customer within the street lighting rate class over what was originally proposed by the Company.

NOW, THEREFORE, in consideration for the mutual covenants of the parties, the Cities and PSC agree as follows:



1. Prior to February, 1980, the Company had offered and allowed street lighting customers the option of receiving the lower wood pole, overhead street lighting rate upon installation of an ornamental, underground street light if the customer paid the additional capital contribution calculated as the difference in capital costs between a wood pole, overhead light and an ornamental, underground light. The Cities and other street lighting customers have made substantial contributions in order to "buy-down" to the lower wood pole, overhead rate. While the proposed tariffs filed in this case do not explicitly address how such lights would be treated, the Company had intended and hereby confirms that said customers who had paid the greater capital contribution will continue to be charged the lower wood pole, overhead rate in recognition of that capital contribution. The Company agrees to this rate treatment without increasing in this proceeding the rates for any other of the lights or customers in the street lighting class or any other class of customers.

2. In addition, on February, 1980, the Company formalized the option described in No. 1 above in what came to be known as a Customer Contributed rate (CC rate). Thus, from February, 1980, until the present, the Cities were offered this lower CC rate if they made a higher capital contribution which approximated the differential between the capital cost of installing a wood pole, overhead light and an ornamental underground light as described in No. 1 above. The Company hereby agrees to modify its proposed rate restructuring to continue to charge these customers who are on a CC rate the proposed wood pole, overhead rate in recognition of the higher capital contribution. The Company agrees to make this modification without increasing in this proceeding the rates for any other of the lights or customers in the street lighting class or any other class of customer.

3. Over the years, PSC has established, in addition to those described in Nos. 1 and 2 above, rate options for the Cities and other customers in the street lighting class which, in

part, reflect a higher contribution of capital upon installation of the light. These rate classifications have been known as non-company owned (NCO) rates. These NCO rates have been proposed by the Company to be eliminated in this proceeding and consolidated into either the SL1 or SL2 rate classifications as indicated in Exhibit II-24 to this proceeding. The Company may make its proposal effective and agrees to fully analyze the impact of the elimination of these NCO rates upon the Cities' and other street lighting customers prior to the next rate case. If inequities are discovered, PSC agrees to restructure the street lighting rates in that proceeding to provide an appropriate reduction in the rates for lights formerly on NCO rates to reflect the capital contributions historically made by the customers in those classes, it being recognized that this may result in increases to other street lighting rates so that PSC may recover its total cost of service to that class.

4. The Cities have expressed concerns over their ability to evaluate whether to select SL1 or SL2 rate schedules on their various lights within the Cities. If SL2 rates are selected under which maintenance will be charged separately as required, the Cities have also raised concerns over their ability to control maintenance charges being made by the Company to the Cities on such lights. In order to resolve these issues, the Cities and PSC agree to the following modifications of the tariffs filed herein:

A. The street lighting customers will be able to make an initial election between SL1 and SL2 within twelve months of the effective date of the Commission's Phase II decision. Thereafter, said customers may move from SL1 to SL2 or from SL2 to SL1 effective January 1, 1984, and may make only one such move every third anniversary thereafter. Said street lighting customers may elect, on a reasonable basis, to have a portion of their lights on SL1 and a portion on SL2.

B. When a customer elects a change in rate schedules within the time periods set forth in 4A above, the Company agrees that such changes between SL1 and SL2 and vice versa will not result in the loss of so-called "buy-down" rates or result in any other penalty to the customer.

C. Within thirty days from the effective date of the Commission's Phase II decision in this docket, the Company will file tariffs setting forth on a unit cost basis, the charges to SL2 street lighting customers for maintenance as may be required on their lights. The Company shall not be required to file a schedule of parts which may be required to repair such lights; provided however, the Company shall charge the customer no more than its costs of obtaining such parts plus a mark-up to cover overhead on such parts.

5. The Cities have raised concerns relating to the current and proposed rate treatment of street lights on state highways. In order to resolve these controversies, the Cities and PSC agree that at any time from December, 1981 forward when an existing street light of the type proposed to be billed on the SHL rate becomes within municipal boundaries by annexation or otherwise or an existing state highway light within a municipality is replaced by the State Highway Department at no charge to PSC, a payment of the current free construction allowance for street lighting will be made to the Cities and other street lighting customers for such lights. After such payment, said customers will be charged the appropriate SL1 or SL2 rate, at their discretion, within the parameters set forth in 4A above.

6. The parties agree that the Company will not be required to make and will not make any retroactive adjustment in rates not provided for herein or retroactive adjustment of billings for street lighting services.

APPENDIX C  
DECISION NO. C82-1271



7. The Cities and the Company agree that no testimony or argument need be or will be presented with respect to any of the issues covered by this Agreement during the remainder of Phase II, except as may be necessary to respond to comments of other parties or effectuate Commission approval of this Agreement.

8. The Cities and PSC agree that this Amended Settlement Agreement should be immediately served upon all parties of record who should be given an opportunity to comment or object on said Agreement within ten days. The Cities and PSC further agree that the Commission should immediately consider this Agreement and after the comment period by other parties to this action has expired, approve it by order of the Commission.

9. The Cities and PSC agrees that if the Commission rejects all or part of this Amended Settlement Agreement, the Cities may proceed with testimony and argument on such issues subsumed in the portion or portions of the settlement which are rejected in this case within the confines of the schedule set by the Commission. If this Agreement is rejected by the Commission after the deadline for filing written testimony and exhibits by the Cities, Public Service agrees to cooperate in allowing the Cities to present their evidence.

10. The Cities and PSC agree to cooperate in good faith in the implementation of this Amended Settlement Agreement, as well as all issues relating to the continued operation of street lighting and traffic signal lighting rates. Specifically, the Company will entertain and seriously consider a request by the Cities for an alternate rate design concerning traffic signals which are run on a "flashing" mode.

11. Except as provided in paragraph 3, nothing contained in this Amended Settlement Agreement shall be deemed to preclude either PSC or the Cities from asserting in any future ratemaking

APPENDIX C  
DECISION NO. C82-1271

proceeding any position which either may consider appropriate concerning the cost allocation or rate design issues with respect to the street or traffic signal lighting classes.

IRELAND, STAPLETON & PRYOR, P. C.  
Tucker K. Trautman  
John H. Evans

KELLY, STANSFIELD & O'DONNELL  
James R. McCotter

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