Exhibit No.:
Witness: Maurice Brubaker
Type of Exhibit: Surrebuttal Testimony
Issue: Cost of Service/ Rate Design
Sponsoring Party: Praxair, Inc.
Case No. ER-2001-299

Before the Public Service Commission of the State of Missouri

In the Matter of The Empire District Electric Company's tariff sheets designed to implement a general rate increase for retail electric service provided to customers in the Missouri service area of the Company	))))))	Case No. ER-2001-299

Surrebuttal Testimony of

Maurice Brubaker

On behalf of

Praxair, Inc.

Exhibit No. 97
Date 5/29/01 Case No. ER-2001-299
Reporter KBM

Project 7513
May 17, 2001

BRUBAKER & ASSOCIATES, INC.

ST. LOUIS, MO 63141-2000

Before the Public Service Commission
of the State of Missouri

In the Matter of The Empire District Electric Company's tariff sheets designed to implement a general rate increase for retail electric service provided to customers in the Missouri service area of the Company	))))))	Case No. ER-2001-299

STATE OF MISSOURI)
) SS
COUNTY OF ST. LOUIS)

Affidavit of Maurice Brubaker

Maurice Brubaker, being first duly sworn, on his oath states:

1. My name is Maurice Brubaker. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by Praxair, Inc. in this proceeding on its behalf.

2. Attached hereto and made a part hereof for all purposes are my surrebuttal testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2001-299.

3. I hereby swear and affirm that the surrebuttal testimony and schedules are true and correct and that they show the matters and things they purport to show.

Maurice Brubaker

Subscribed and sworn to before this 16th day of May 2001.

CAROL SCHULZ
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis County
My Commission Expires: Feb. 26, 2004

Notary Public

My Commission Expires February 26, 2004.

Before the Public Service Commission
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In the Matter of The Empire District Electric Company's tariff sheets designed to implement a general rate increase for retail electric service provided to customers in the Missouri service area of the Company	))))))	Case No. ER-2001-299

Surrebuttal Testimony of Maurice Brubaker

1 Q **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A Maurice Brubaker. My business address is 1215 Fern Ridge Parkway, Suite 208,

3 St. Louis, Missouri 63141-2000.

4 Q **ARE YOU THE SAME MAURICE BRUBAKER WHO PREVIOUSLY TESTIFIED IN**

5 **THIS PROCEEDING?**

6 A Yes, I have filed direct and rebuttal testimony on rate design/cost of service issues.

7 Q **WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

8 A In my surrebuttal testimony I will respond to the rebuttal testimony of the Missouri

9 PSC Staff (Staff) and Office of Public Counsel (OPC) with respect to electric cost of

10 service and rate design issues.

RESPONSE TO PSC STAFF

Q **AT PAGE 2 OF HIS REBUTTAL TESTIMONY MR. WATKINS CLAIMS THAT THE "AVERAGE & EXCESS" METHOD IS AN "INNOCUOUS SOUNDING AND MISLEADING" NAME FOR A "PEAK RESPONSIBILITY" METHOD OF ALLOCATING CAPACITY COSTS, AND THAT IN APPLYING THIS METHOD EACH CLASS' DEMAND IN A SINGLE HOUR OF THE YEAR IS THE "SOLE" DETERMINANT OF THE CAPACITY COST ALLOCATED TO EACH CLASS. IS MR. WATKINS CORRECT?**

A No, Mr. Watkins is profoundly incorrect. In applying the traditional Average & Excess (A&E) method, two factors are used to derive the allocation of capacity costs to each customer class. The first factor is the average demand of each customer class, and the second factor is the "excess" demand of each customer class. Individual class contributions to system peak demand are not used in the calculation.

The average demand of each customer class is simply that kilowatt demand level which, if imposed on the system each and every hour of the year would total up to each class' total kilowatthours. The average demand for each class is determined by dividing each class' annual kilowatthours by the number of hours in the year (8,760 hours in a non-leap year). For example, if a class consumed 657 million kilowatthours in a year, the average demand would be determined by dividing 657 million kilowatthours by 8,760 hours. The result would be an average demand of 75,000 kilowatts. If this demand level had been imposed each and every hour of the year, the total annual kilowatthours used would have been 657 million.

At some point of time during the year, the class will experience a maximum demand. This is known as the non-coincident peak. It is the highest demand that the class experiences at any time, regardless of whether the system is at its peak or

not. For purposes of this example, assume this class has an annual non-coincident peak demand of 100,000 kilowatts.

The excess demand is the difference between each classes' maximum or non-coincident demand and its average demand. Continuing with the above example, the excess demand would be 25,000 kilowatts, which is the difference between the 100,000 kilowatt peak demand and the 75,000 kilowatt average demand.

In developing the A&E allocation factor, the average demand of each class is weighted by the load factor of the utility system, and the excess demand is weighted by a factor equal to one minus the system load factor. The detailed derivation of the A&E demand allocation factors, based on Praxair's total load, is shown on Page 2 of Schedule 3 attached to my direct testimony. Page 3 of Schedule 3 is the derivation of the A&E factors based on Praxair's firm load.

Q WHAT IS MEANT BY THE TERM "CONTRIBUTION TO SYSTEM PEAK DEMAND"?

A The term "contribution to system peak demand" means the demand of a customer class at the time that the system is experiencing its maximum demand. Although this is usually thought of on an annual basis, there are also system peak demands during each month of the year and some allocation methods use the contribution of each class to one or more of these system peaks in developing an allocation.

In any event, a "contribution" is simply the demand of the particular class or classes coincident with (at the time of) the system peak. In our example above where the class had an average demand of 75,000 kW and a non-coincident peak demand of 100,000 kW, the contribution to the system peak will be equal to or less

than 100,000 kW, since 100,000 kW is the maximum demand. It may or may not be larger than 75,000 kW. This will depend upon the class. For example, the lighting class typically has a zero contribution to system peak because it is an off-peak load. For most classes, however, the contribution to peak demand will be an amount in between the average demand and the non-coincident peak demand.

Q ARE THERE VERSIONS OF THE A&E METHOD THAT UTILIZE THE CONTRIBUTION TO SYSTEM PEAK DEMAND OF INDIVIDUAL CUSTOMER CLASSES, RATHER THAN THE NON-COINCIDENT PEAK DEMAND?

A Yes. There are versions of the A&E method that do. Some of the statements which Mr. Watkins makes may be applicable to those versions that do utilize the contribution of individual customer classes to the system peak demand. However, that is not the method I used, and therefore Mr. Watkins' criticisms are not applicable.

Q ON PAGE 3 OF HIS REBUTTAL TESTIMONY, MR. WATKINS ASSERTS THAT HE HAS PROVED THAT "AVERAGE & EXCESS" IS IDENTICAL TO "PEAK RESPONSIBILITY" BY THE CALCULATIONS SHOWN IN HIS SCHEDULE 1. IS THIS WHAT SCHEDULE 1 TO MR. WATKINS' REBUTTAL TESTIMONY SHOWS?

A No. Schedule 1 to Mr. Watkins' rebuttal testimony does not provide a calculation either of the "Average & Excess" method or the "Peak Responsibility" method.

Q WHAT DID MR. WATKINS CALCULATE ON HIS SCHEDULE 1?

A Mr. Watkins made a calculation of the "non-coincident peak" allocation factors. His schedule shows only class non-coincident peaks and class energy. (These are the

same numbers, by class, shown on Page 2 of Schedule 3 attached to my direct testimony – wherein I showed the appropriate derivation of the Average & Excess demand allocation factors.) Presumably, Mr. Watkins wants us to believe that the two columns with the bold numbers, labeled "NCP percent" and "A&E percent" are the Peak Responsibility and Average & Excess demand allocation factors, respectively. They are not.

Q PLEASE EXPLAIN.

A The percentages shown in the "NCP percent" column represent the relationship between the non-coincident peak demand of each class and the sum of the non-coincident peak demands of all customer classes. This column simply is what it states it is – the allocation factors that would be applicable if a non-coincident peak method were used. This is not the peak responsibility allocation method.

Second, in calculating the A&E percentages, Mr. Watkins erroneously makes a load factor calculation based on the sum of the individual class peaks (i.e., the non-coincident peaks) rather than based on the maximum demand of all customers taken together, that is, the load factor based on the system coincident peak. The way that he has manipulated the numbers, it is inevitable that the two sets of percentages would equal each other. The correct load factor calculation is shown on Page 2 of my Schedule 3. The correct load factor is 56.16%, and not the erroneous 48.04% used by Mr. Watkins. Furthermore, the real Average & Excess allocation factors (which I used) are not the same as the non-coincident peak allocation factors, as Mr. Watkins would have us believe.

For example, the non-coincident peak allocation factor shown on his Schedule 1, for the residential class, is 49.67%. As shown on Page 2 of Schedule 3

to my direct testimony, the correct Average & Excess allocation factor for the residential class is in fact 48.38%.

Q WHAT IS THE COINCIDENT PEAK ALLOCATION FACTOR FOR THE RESIDENTIAL CLASS?

A This can be derived from information shown on Page 4 of Schedule 3 attached to my direct testimony. Since the numbers used by Mr. Watkins include Praxair's total demand, it is appropriate to use the numbers shown on Lines 13 through 24 on Page 4 of Schedule 3 for this derivation. Using data for the month of August, the residential class' peak responsibility factor would be 53.27% (438,372 ÷ 822,919). For ease of reference, Schedule 1 attached to this surrebuttal testimony presents a comparison between the correctly calculated NCP factors (which nobody used, and which appear only in Mr. Watkins' strawman calculation), the correctly calculated Average & Excess factors and the correctly calculated Peak Responsibility factors.

The clearest example of the difference between the A&E and Peak Responsibility methods is the lighting class. As shown on Line 11, the A&E factor is 1.63%, while the Peak Responsibility factor is 0%.

This comparison clearly shows that Mr. Watkins' calculations and comparisons are erroneous.

Q HAVE YOU REVIEWED MR. WATKINS' SCHEDULE 2 WHERE HE CLAIMS TO HAVE "MATHEMATICALLY" PROVED THE EQUIVALENCE OF AVERAGE & EXCESS AND PEAK RESPONSIBILITY METHODS?

A Yes, I have reviewed it.

Q DOES IT PROVE WHAT MR. WATKINS SAYS IT PROVES?

A No, it does not. It only proves that if terms are incorrectly defined, then erroneous results can be obtained. Essentially, Mr. Watkins equates the sum of the class peak demands with peak responsibility – which is not an accurate representation.

Q DO YOU HAVE ANY CONCLUDING OBSERVATIONS CONCERNING THE CONTROVERSY WHICH MR. WATKINS HAS CREATED ABOUT THE INTERPRETATION OF THE AVERAGE & EXCESS DEMAND METHODOLOGY?

A Yes. I find it quite surprising that Mr. Watkins has gone to such great lengths to try to prove that the Average & Excess methodology is something that it really isn't. This should not be an issue at all. The Average & Excess method which I have used is a traditional, well-accepted, allocation method that has been employed in the electric utility industry for over 30 years. The interpretations which Mr. Watkins attempts to place on the Average & Excess methodology are unusual. He is either unfamiliar with basic allocation techniques that have been used in the industry for decades, or he is intentionally distorting the methodology in order to create a "strawman" that is more easily attacked.

Q AS YOU HAVE APPLIED THE A&E METHOD, DID YOU USE THE MAXIMUM DEMANDS OF THE INDIVIDUAL CLASSES, OR DID YOU USE THE CONTRIBUTIONS OF THE CUSTOMER CLASSES TO THE SYSTEM PEAK DEMAND?

A The traditional A&E method, which I used, employs the maximum demands of the individual classes, irrespective of when they occur in relation to the system peak. It does not use the contributions of the classes to the system peak demand.

Q **IS THE CONVENTIONAL A&E METHOD WHICH YOU HAVE USED DESCRIBED IN INDUSTRY LITERATURE?**

A Yes. It is described in detail in many books, articles and manuals on cost allocation. For example, the January 1992 edition of the "Electric Utility Cost Allocation Manual," published by the National Association of Regulatory Utility Commissioners (NARUC) describes the conventional Average & Excess method at Pages 49 and 50. A review of this description and an analysis of the A&E factors which I have developed will show that they are identical. It will further show that there is no relationship between what the NARUC manual describes as the A&E method, and what Mr. Watkins would have us believe that it is. Schedule 2 attached to this surrebuttal testimony is an excerpt from the NARUC Cost Allocation Manual that describes the development of the conventional A&E method.

Q **DO YOU AGREE WITH MR. WATKINS THAT THE A&E METHOD IS UNREASONABLE AND SHOULD BE REJECTED?**

A No. The A&E method is a widely used and well respected method. It has stood the test of time and is utilized by many commissions. In fact, the A&E method and the coincident peak method are the most widely used methods in the industry.

Q **ARE YOU AWARE OF ANY STATE COMMISSIONS WHICH HAVE ADOPTED THE A&E METHOD BECAUSE IT RECOGNIZES BOTH THE ON-PEAK AND OFF-PEAK USE OF AN ELECTRIC UTILITY'S SYSTEM BY THE VARIOUS CUSTOMER CLASSES?**

A Yes. Several have made those findings. One which may be of particular interest is the Iowa Utilities Board which has consistently adopted the A&E method for the

allocation of production system fixed costs. As one example, in a February 25, 1994 order in Docket No. RPU-93-4 (Iowa-Illinois Gas & Electric Company), the Commission adopted a cost of service and rate design settlement (which was supported by the utility and most intervenors) which utilized the average and excess method. In so doing, the Iowa Utilities Board stated:

> "The average and excess method allocations recognize that electric utility systems are required to serve both peak and off-peak demands. Fixed production costs are generally classified as demand costs and allocated based on a combination of average [and] maximum customer class demands and variable production costs are generally classified as energy costs and allocated by overall customer class usage." (Iowa Utilities Board, Docket RPU-93-4, In Re: Iowa-Illinois Gas & Electric Company, Order dated February 25, 1994, at Page 4.)

Q IN CONTRAST TO THE TRADITIONAL A&E METHOD, DO STAFF AND OPC CONTINUE TO ARGUE IN SUPPORT OF THEIR PROPOSED METHODS?

A Yes. As described in more detail in my rebuttal testimony, the Staff has created something which it calls a " time of use" allocation method, and OPC has developed a monthly NCP and Average cost allocation method.

Q ARE THE STAFF OR OPC METHODS CONVENTIONAL OR ACCEPTED IN THE INDUSTRY?

A No. I have never seen either method written up in any book, article, or manual that describes appropriate cost allocation techniques. Furthermore, I am not aware of any place other than Missouri where either of these methods has ever been proposed. They are both unconventional and illogical. They fail to appropriately consider the factors which cause costs to be incurred and produce a distorted allocation. They are highly favorable to low load factor customers, and highly

disadvantageous to high load factor customers, thereby rewarding inefficient use and penalizing efficient use. Adoption of unconventional methods such as these, that allocate significantly more cost responsibility to business customers than do more traditional methods used by other states, would certainly be a negative factor in assessing Missouri's business climate.

Q MR. WATKINS ALSO IS CRITICAL OF YOUR TREATMENT OF PRAXAIR IN THE COST OF SERVICE STUDY BECAUSE YOU ONLY ALLOCATED COSTS BASED ON PRAXAIR'S FIRM LOAD OF 300 KW. DO YOU AGREE WITH MR. WATKINS' CRITICISM?

A No. First, let me state that in Schedule 4 to my direct testimony, I did in fact allocate costs to all of Praxair's load, both firm and interruptible. This is equivalent to the general methodology employed by both Empire and Staff. The results of this study indicate the cost to serve Praxair if Praxair were totally firm. This may be interesting but it is not reality. 95% of Praxair's load is interruptible. Nevertheless, it does show that, using Mr. Watkins' preferred basis, Praxair provides revenues more than sufficient to recover its cost of service. I will discuss this in more detail later when I respond to Staff Witness Pyatte.

Q WHY IS IT APPROPRIATE TO REMOVE PRAXAIR'S INTERRUPTIBLE LOAD WHEN DOING THE COST OF SERVICE STUDY?

A It is appropriate because only 300 kW of Praxair's total load is firm. Any load above the firm level can be interrupted by Empire when the power is needed to provide reliable service to firm customers. Generation capacity is not constructed to meet Praxair's interruptible requirements, and it is not appropriate to allocate fixed costs

associated with production facilities to Praxair's interruptible load because this load does not cause these costs to be incurred. Of course, Praxair gets a full allocation of the variable costs (fuel, variable purchased power, O&M expense etc.) associated with the production function. I have also allocated to Praxair transmission capacity based on its total load (firm plus interruptible).

Q MR. WATKINS NOTES THAT IN 1999 PRAXAIR HAD A DEMAND OF 8,409 KW AT THE TIME OF EMPIRE'S SYSTEM PEAK. IS THIS RELEVANT?

A No. It is not relevant because, had Empire needed the capacity which was serving Praxair to instead serve firm customers, it would have taken the capacity away from Praxair and used it to serve firm load. Thus, it is appropriate to allocate only to Praxair capacity based on its firm load entitlement.

The fact that interruptions may not have occurred at the time of the system peak is totally irrelevant. The Company can plan its system based on Praxair's firm load entitlement, and need not plan generation capacity to meet Praxair's interruptible load.

Q HAVE YOU REVIEWED THE REBUTTAL TESTIMONY OF STAFF WITNESS JANICE PYATTE?

A Yes. Ms. Pyatte observes, at Pages 10-12 of her testimony, that there could be some rate relationship problems (between Rate CB and Rate SH) if these two rates received the different percentage increases that I have recommended.

Q **HOW DO YOU RESPOND?**

A To the extent that there are these kinds of issues I have no objection to considering these two schedules together for revenue allocation and rate design purposes. Ms. Pyatte's criticism is the tail wagging the dog. While her issue is valid, it is not a reason to reject the basic cost of service study or revenue allocation recommendations. Rather, the identified issue points out a potential problem with the rates themselves, which can easily be accommodated.

Q **AT PAGE 2 OF HER REBUTTAL TESTIMONY, WITNESS PYATTE INDICATES THAT YOUR DIRECT TESTIMONY INCLUDES A "CORRECTED" VERSION OF EMPIRE'S COST OF SERVICE STUDY. IS SHE RIGHT?**

A Yes. This corrected study is presented as Schedule 4 attached to my direct testimony.

Q **SHE GOES ON TO STATE THAT EMPIRE HAS NOT ADOPTED YOUR CORRECTIONS OR YOUR RESULTS. IS THIS CORRECT?**

A It is correct to state that Empire has not adopted the results, because it has not filed a version of its cost of service study that corrects for the erroneous understatement of the Praxair revenues contained in the cost of service study filed with its direct testimony, as well as in a subsequently provided study which corrected only for an error in the deprecation reserve associated with distribution plant accounts.

The Empire cost of service study has Praxair revenues of $1,536,000 The correct revenues, as shown on Schedule 4 attached to my direct testimony, and as also used by MPSC Staff in its cost of service study, is $1,868,000. Thus, the Empire study understates the Praxair revenue by $331,000, or almost 20%! (In this

version of the study, as well as Staff's version, Praxair is treated as a firm load for allocation purposes, and its revenue is the amount which it pays to Empire before the interruptible credit is applied.) Since the revenue number I am using was provided to me by Empire as a correction to its erroneously stated number, I believe it is more accurate to say that Empire has not yet filed a correct cost of service study. When it does, the results for Praxair should be comparable to what is shown on Schedule 4 attached to my direct testimony – which is that Praxair's rate of return at current rates is 132% of the system average rate of return, and that Praxair is paying rates in excess of its fully allocated cost of service.

The same schedule also shows that if an increase is allocated on an equal percentage across-the-board basis, Praxair's rate of return increases to 138% of the new system average rate of return, and the extent to which it is providing revenues in excess of cost of service (i.e., the subsidy that it provides) more than doubles.

OFFICE OF PUBLIC COUNSEL

Q HAVE YOU REVIEWED THE REBUTTAL TESTIMONY OF OPC WITNESS HONG HU?

A Yes, I have.

Q WHAT DOES THE TABLE ON PAGE 2 OF MS. HU'S REBUTTAL TESTIMONY SHOW?

A It shows a comparison of class rates of return for selected customer classes under the various cost of service studies that have been presented.

Q DO YOU HAVE ANY COMMENTS ON THIS TABLE?

A Yes. In the line labeled "company" Ms. Hu shows the erroneous negative 2.45% rate of return for the Praxair special contract that appears in the Company's study. As noted previously, this version of the Company's study contains an admitted, uncorrected, error in Praxair's revenues at present rates of approximately $331,000. If that error is corrected, the Praxair rate of return at present rates should be approximately 6.15%, or 132% of system average, as shown on Schedule 4 to my direct testimony.

Q ON PAGE 4 OF HER REBUTTAL TESTIMONY MS. HU ATTEMPTS TO DEFEND A TOU COST ALLOCATION METHOD. DID MS. HU USE A TOU COST ALLOCATION METHOD IN DEVELOPING HER COST OF SERVICE STUDY?

A No, she did not.

Q DOES MS. HU ADD ANY REASONS IN SUPPORT OF A TOU METHODOLOGY THAT YOU HAVE NOT PREVIOUSLY ADDRESSED?

A No. I have previously addressed, in my rebuttal testimony, the fallacies with the so-called TOU methodology that Staff has used. Ms. Hu adds no new arguments.

Q AT PAGE 5 OF HER REBUTTAL TESTIMONY, MS. HU CRITICIZES THE AVERAGE & EXCESS DEMAND ALLOCATION METHOD. IS HER CRITICISM VALID?

A No. She erroneously states (beginning on Line 4) that the A&E method allocates demand-related costs based on excess demands instead of total demands. This is not a correct statement. The A&E method considers both average demands and

excess demands and develops total demands for purposes of allocating total demand-related costs. Thus, the A&E method does not do what Ms. Hu says it does. As a result, her criticisms are unfounded.

Q AT PAGES 5 AND 6 OF HER TESTIMONY MS. HU CRITICIZES YOUR REMOVAL OF PRAXAIR'S INTERRUPTIBLE LOAD FROM THE ALLOCATION OF PRODUCTION-RELATED COSTS. DO YOU AGREE WITH HER CRITICISMS?

A No. First, I should note that she erroneously states that no production or transmission costs were allocated to Praxair's interruptible load. As is explicitly clear from my testimony and exhibits, Praxair was allocated a full share of transmission costs based on its total load, and not just its interruptible load.

Beyond that, Ms. Hu's criticisms are similar to those asserted by Mr. Watkins, and the response is the same. That is, the Company's obligation to supply Praxair is to the limit of its firm power requirements. If capacity is not sufficient to reliably serve firm customers and also serve Praxair's interruptible power requirements, the firm customers get the capacity – Praxair gets curtailed. Thus it is eminently fair and reasonable that Praxair not be allocated cost responsibility for generation capacity that it neither causes to be incurred, nor is entitled to use when others need it.

Q MS. HU MAKES FURTHER COMMENTS ON PAGE 6 CONCERNING THE LACK OF ANY EVIDENCE TO SUPPORT PRAXAIR'S FREQUENCY OR DURATION OF INTERRUPTIONS. DO YOU CARE TO RESPOND?

A Yes. To the best of my knowledge, Praxair has complied with each and every curtailment request that Empire has made of it. The number of times that interruptions are required is a function of the condition of the generating units on the

utility system, temperature, humidity, cloud cover, the condition of the transmission system and the air-conditioning driven demands of residential and small commercial customers. In some years there will be more interruptions than in other years. What matters is not the number of interruptions that occur, but the fact that the Company is entitled to interrupt the load when the capacity is needed to serve firm customers.

Q DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A Yes, it does.

THE EMPIRE DISTRICT ELECTRIC COMPANY

Comparison of
Demand Allocators

Line	Rate Classes		Class Non-Coincident Peak (kW) (1)	Class NCP Percent (2)	Average & Excess Allocator (3)	Demands at the Time of the System Peak Aug 1999 (kW) (4)	System Peak Demand Percent (5)
1	Residential	RG	477,998	49.67%	48.38%	438,372	53.27%
2	Commercial	CB	100,930	10.49%	10.22%	72,643	8.83%
3	Commercial	SH	37,631	3.91%	3.79%	25,294	3.07%
4	General Power	GP	147,618	15.34%	15.85%	123,117	14.96%
5	El. Furnace	PF	2,414	0.25%	0.22%	5	0.00%
6	Praxair		8,084	0.84%	0.93%	8,409	1.02%
7	Total El Build	TEB	71,242	7.40%	7.45%	60,255	7.32%
8	Feed Mill	PFM	613	0.06%	0.06%	68	0.01%
9	Large Power	LP	99,143	10.30%	11.47%	94,698	11.51%
10	Misc Lights	MS	58	0.01%	0.01%	58	0.01%
11	Other Lights		16,683	1.73%	1.63%	-	0.00%
12	Total Retail		962,414	100.00%	100.00%	822,919	100.00%

Note:
Column (1) is from Brubaker's Direct Testimony, Schedule 3, Page 2 of 4.
Column (2) is Column (1) expressed as a percent of the total.
Column (3) is from Brubaker's Direct Testimony Schedule 3, Page 2 of 4.
Column (4) is from Brubaker's Direct Testimony Schedule 3, Page 4 of 4, Column (1), Lines 13 through 24.
Column (5) is Column (4) expressed as a percent of the total.

Schedule 1
Surrebuttal

1. Average and Excess Method

Objective: The cost of service analyst may believe that average demand rather than coincident peak demand is a better allocator of production plant costs. The average and excess method is an appropriate method for the analyst to use. The method allocates production plant costs to rate classes using factors that combine the classes' average demands and non-coincident peak (NCP) demands.

Data Requirements: The required data are: the annual maximum and average demands for each customer class and the system load factor. All production plant costs are usually classified as demand-related. The allocation factor consists of two parts. The first component of each class's allocation factor is its proportion of total average demand (or energy consumption) times the system load factor. This effectively uses an average demand or total energy allocator to allocate that portion of the utility's generating capacity that would be needed if all customers used energy at a constant 100 percent load factor. The second component of each class's allocation factor is called the "excess demand factor." It is the proportion of the difference between the sum of all classes' non-coincident peaks and the system average demand. The difference may be negative for curtailable rate classes. This component is multiplied by the remaining proportion of production plant -- i.e., by 1 minus the system load factor -- and then added to the first component to obtain the "total allocator." Table 4-10A shows the derivation of the allocation factors and the resulting allocation of production plant costs using the average and excess method.

TABLE 4-10A

CLASS ALLOCATION FACTORS AND ALLOCATED PRODUCTION PLANT REVENUE REQUIREMENT USING THE AVERAGE AND EXCESS METHOD

Class Rate	Demand Allocation Factor - NCP MW	Average Demand (MW)	Excess Demand (NCP MW - Avg. MW)	Average Demand Component of Alloc. Factor	Excess Demand Component of Alloc. Factor	Total Allocation Factor (%)	Class Production Plant Revenue Requirement
DOM	5,357	2,440	2,917	17.95	18.51	36.46	386,683,685
LSMP	5,062	2,669	2,393	19.64	15.18	34.82	369,289,317
LP	3,385	2,459	926	18.09	5.88	23.97	254,184,071
AG&P	572	254	318	1.87	2.02	3.89	41,218,363
SL	126	58	68	0.43	0.43	0.86	9,101,564
TOTAL	14,502	7,880	6,622	57.98	42.02	100.00	$1,060,476,000

Notes: The system load factor is 57.98 percent, calculated by dividing the average demand of 7,880 MW by the systen coincident peak demand of 13,591 MW. This example shows production plant classified as demand-related.

Some columns may not add to indicated totals due to rounding.

If your objective is -- as it should be using this method --to reflect the impact of average demand on production plant costs, then it is a mistake to allocate the excess demand with a coincident peak allocation factor because it produces allocation factors that are identical to those derived using a CP method. Rather, use the NCP to allocate the excess demands.

Source: *Electricity Utility Cost Allocation Manual*, National Association of Regulatory Utility Commissioners, January 1992, Pages 49-50.