BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

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| In the matter of the investigation of the electric class cost of service for St. Joseph Light & Power Company. | ) ) ) | Case No. EO-88-158 |

## APPEARANCES

James C. Swearengen and Gary W. Duffy, Brydon, Swearengen & England, P.C., 312 East Capitol Avenue, Post Office Box 456, Jefferson City, Missouri 65102,
and
Gary Myers, General Counsel and Secretary, St. Joseph Light & Power Company, 520 Francis Street, St. Joseph, Missouri 64501, for St. Joseph Light & Power Company.

William M. Barvick, Attorney at Law, 240 East High Street, Suite 202, Jefferson City, Missouri 65101, for Ag Processing, Inc.

Lewis R. Mills, Jr., First Assistant Public Counsel, Office of Public Counsel, Post Office Box 7800, Jefferson City, Missouri 65102, for the Office of Public Counsel and the public.

Robert J. Hack, Deputy General Counsel, Missouri Public Service Commission, Post Office Box 360, Jefferson City, Missouri 65102, for the staff of the Missouri Public Service Commission.

HEARING EXAMINER: Edward C. Graham.

## REPORT AND ORDER

## Procedural History

On December 4, 1987 the Commission entered an Order in Case No. EC-88-107 entitled ***Douglas M. Brooks, Public Counsel, Complainant, v. St. Joseph Power & Light Company, Respondent*** that dismissed the complaint filed in that case and ordered this docket established pursuant to a motion filed in that case entitled Motion For Initiation Of Electric Class Cost Of Service Study, Request For Hearing Or Oral Argument filed by Ag Processing, Inc. On February 23, 1988, the Commission by its Order granted the aforesaid motion, established this case, ordered notice, set an intervention deadline of April 4, 1988, and ordered a prehearing conference of all parties for April 25, 1988. On

April 8, 1988, St. Joseph Light & Power Company (SJLP) filed a Motion To Dismiss. On April 22, 1988 the Commission overruled that motion. On July 12, 1988 the Commission ordered SJLP to commence its electric cost of service study according to SJLP's proposal subject to certain modifications and with a data collection period of 14 months commencing approximately April 1, 1989. Ag Processing, Inc. (AGP) as an allowed intervenor in Case No. EC-88-107 was allowed to be an intervenor in this case. The other parties to the case are the Commission's Staff (Staff) and the Office of Public Counsel (Public Counsel).

On November 16, 1990 SJLP filed its direct testimony and related schedules which contained SJLP's electric class cost of service study previously ordered by the Commission. After several motions to modify or close the case were filed, on March 19, 1991 the Commission overruled those motions and ordered a new intervention date and set a prehearing conference for May 1, 1991. No other intervenors applied. On May 22, 1991 a Joint Motion For Approval Of Schedule Of Technical Activities For Tentative Procedural Schedule was filed by all parties except Public Counsel, who opposed the motion. On June 12, 1991 the Commission by its Order approved a procedural schedule setting a hearing date of October 28, 1991. Rebuttal testimony was filed by all parties on October 7, 1991. Surrebuttal testimony was filed by all parties on October 23, 1991.

On October 28, 1991 the parties filed a Hearing Memorandum which set out all the issues to be determined. The hearing was convened on October 29, 1991 with all parties present and participating. On October 30, 1991 a local public hearing was held in St. Joseph, Missouri. Pursuant to the briefing schedule, simultaneous initial briefs were filed by all the parties on January 6, 1992 and simultaneous reply briefs were filed by all the parties on January 21, 1992. A motion to consolidate this case with Case No. EC-92-214 was filed by AGP on September 11, 1992 and an Order denying the motion was ruled upon by the

Commission at the hearing in Case No. EC-92-214 which convened on September 14, 1992.

## Findings of Fact

The Missouri Public Service Commission, having considered all of the competent and substantial evidence upon the whole record, makes the following findings of fact.

### Background

SJLP is a Missouri corporation with its principal office located at 520 Francis Street, St. Joseph, Missouri. SJLP is an investor-owned utility serving a 3,300 square mile area in ten northwest Missouri counties. SJLP provides electric energy to about 59,000 customers in 74 cities, towns and villages, 53 of them incorporated, and in a large rural area. SJLP maintains generation, transmission and distribution facilities to serve electric customers. In addition, the company supplies natural gas to approximately 6,000 customers in Maryville, Missouri and 14 smaller communities. The company also supplies industrial steam to nine customers in St. Joseph, Missouri.

This case was established by the Commission for SJLP to perform an electric class cost of service (COS) study. A data collection period of 14 months to commence approximately April 1, 1989 was ordered by the Commission to implement, collect and analyze load research data obtained from a study of the company's customers. A sample design was adopted with the exact sample size and distribution of meters to be determined by the customers' use during the 1988 summer month of system peak. The study was to include a survey of demographic characteristics and appliances of the load research customers.

The load research study is a detailed review of individual customer loads which, when aggregated into homogenous classes, is used to allocate costs

to customer classes. Load research data is usage data collected every fifteen minutes from a random sample of customers which have been determined to be representative of customer classes served by the company. The data is expanded to estimates of customer hourly loads, measured in kilowatts (KWs). The estimates of class hourly load are then aggregated to represent the system load. The parties have agreed to use three classes in the electric class COS and rate design activities. These classes are Residential, General Service and Large Power. These three classes were analyzed to produce data to help determine the class cost of service study.

Testimony from SJLP witness, Timothy M. Rush, indicated that the relative accuracies for monthly peak hours consistently met the design criteria for all classes except the commercial General Service. The commercial General Service class, however, did meet the design criteria for all summer months and the 1990 winter peak month so that was deemed acceptable. The load research results were compared with system load and they tracked very closely with a reasonable cushion for error, losses and unaccounted-for loads. The conclusion was that, in general, the results seemed accurate. Also, demographic and appliance surveys of the load research customers were conducted and proved consistent.

SJLP also performed an analysis of the expenses, investments and revenues for the 12-month period ending December 1990 as determined from the company's books and records. These expenses, investments and revenues were evaluated to identify their relation to providing service to various classes of customers and to determine their relative returns on rate base. The parties agreed to use the 1990 calendar year as a basis for this electric class cost of service study and all resulting rate design adjustments would be revenue-neutral to the company. Any changes would be to Residential, General Service and Large Power classes. The Lighting classes (private area lighting and street lighting)

would not be subject to any price changes for this proceeding. Also, special studies were performed to separate the electric system investments and expenses from the company's natural gas and industrial steam systems. The outcome of the class COS study is to neither increase nor decrease the company's overall revenue in the period studied. The elements of investment and expense were classified into customer-related, energy-related and demand-related. Customer-related costs are those costs necessary to provide electric service to the customer, such as meter reading, customer accounting, billing, and some investment in plant equipment such as service line and distribution facilities. Energy-related costs are directly related to the consumption of energy and consist of such things as fuel and purchased power. Demand-related costs relate to the investment and expenses associated with the company's facilities necessary to supply the customer's energy and load requirements at various load levels. The majority of demand-related costs consist of generation and transmission. Portions of the distribution facilities are separated between the customer costs and the demand costs.

The next step is to allocate each of the three components of cost to each customer class utilizing allocation factors appropriate for each of the above-stated categories of cost. Customer-related costs are generally allocated on the basis of the number of customers within each class. Energy-related costs are generally allocated on the basis of the respective energy (KW) requirements of each customer class. Demand-related costs are generally derived from load research data. After the allocation factors are determined, the next step is to apply them to each element of rate base and expense in the COS study. Thus, new revenue requirements are obtained for each customer class. As agreed, however, any rate changes to customer classes based upon the new COS study would remain revenue-neutral to the company's total revenue. With this restriction, each of

the customer classes of the COS study could be adjusted, but only in such a way as to achieve an equal percentage return on rate base as before the COS study.

The parties used SJLP's COS study but have developed different allocation factors and also differ on whether any rate changes should be implemented at all. All parties agree that any change in class revenues ordered by the Commission shall be translated into SJLP's existing tariffs (rate codes shown below) as an equal percentage increase or decrease to each rate component on each tariff associated with each customer class: Residential -- 110, 120, 135, 150, 620, 630 and 640; General Service -- 210, 220, 250, 260, 461, 551, 790 and 791; and Large Power -- 310 and 320. In addition, the parties agree that SJLP's tariffs 620 and 640 appear both in the Residential class and the General Service class. Consequently, those tariffs need to be adjusted to correspond to adjustments which may be made to the Residential class.

## Allocation Issues

### I. STARTING POINT FOR QUANTIFICATION:

Staff, Public Counsel and SJLP agree that Staff's COS results can be used as a starting point from which to quantify and describe adjustments proposed by other parties. AGP believes that SJLP's COS results should be used as the base from which other parties' positions are measured.

The Commission determines that the Staff's COS results should be used as the common starting point for quantification purposes since the Hearing Memorandum contemplates this in all the issue positions of the parties.

The Commission uses the term "DEMAND" where the hearing memorandum uses the term "CAPACITY". The use of "DEMAND" is consistent with the National Association of Regulatory Utility Commissioners (NARUC) manual.

**II. PRODUCTION--ENERGY:**

All parties agree that PRODUCTION--ENERGY should be allocated on "Annual Energy".

**III. PRODUCTION--DEMAND:**

All parties agree that some form of "Average and Peak" allocator should be used to allocate PRODUCTION--DEMAND.

1. Split Between Average and Peak:

a. Staff and Public Counsel believe that load factor should be used to split the average demand portion from the peak demand portion.

b. SJLP and AGP believe that the split should be based on an equal percentage basis (50%/50%) between the average demand portion and the peak demand portion. However, AGP believes that the demand portion of the peak and average PRODUCTION--DEMAND cost allocation should be allocated on each class's contribution to the 1990 system peak because the amount of capacity is determined by the system peak.

SJLP and AGP advocate a 50/50 split for the purposes of splitting the average and peak for two specific reasons. They believe that it gives equal treatment to energy and peak needs of customers and that the company's load factor over a historical time frame averages 50 percent.

The Commission is of the opinion that even though SJLP's load factor is very nearly 50 percent, the more accurate measure is load factor rather than approximate split. Therefore, the Commission finds that the system load factor being the ratio of average demand to system peak is the more rational basis to split the average demand portion from the peak demand portion because it accurately reflects the manner in which SJLP's production facilities are actually used.

Staff and Public Counsel's position using load factor to split the average demand portion from the peak demand portion is adopted by the Commission.

2. **Average Demand**:

All parties agree that the average demand portion should be allocated on "Annual Energy".

3. **Peak Demand**:

a. Staff and Public Counsel believe that the "Class Peak Demands" (noncoincident peak) (NCD) from each of the 12 months should be used to calculate the peak demand allocator.

(i) Staff and Public Counsel believe that capacity utilization should be used for determining the weights placed on each of the months.

b. SJLP and AGP believe that the class contribution to peak demand should be used to calculate the peak demand allocator.

(i) SJLP believes that equal weights should be placed on the two highest monthly peak demands from both 1989 and 1990.

(ii) AGP believes that 100 percent of the weight should be placed on the 1990 summer peak.

The Commission is of the opinion that the class noncoincident peak demands from each of the twelve (12) months (12NCP), with each month weighted according to capacity utilization, should be used as the peak demand allocator. This allocation method accounts for the fact that the amount of PRODUCTION-DEMAND is driven by the need to meet varying peak demand levels throughout the year. By weighting each class's monthly NCP by capacity utilization, the Staff's and Public Counsel's method places greater emphasis on peak months in recognition of the significant impact system peak has upon the peak portion of costs in the PRODUCTION-DEMAND function. The Staff's and Public Counsel's peak demand

allocator (12NCP weighted by each month's capacity utilization) assigns responsibility for peak demand costs accurately and minimizes the instability that may result from allocating such costs on the basis of class contribution to: (1) the system peak during the test period as advocated by AGP, or (2) an average of the two system peaks each in 1989 and 1990 as advocated by SJLP.

SJLP argues that Staff's and Public Counsel's method places too much responsibility on the Large Power class and not enough responsibility on the Residential class. SJLP also argues that not enough recognition is given to the system peak demand. SJLP argues that the use of 12 noncoincident demands does not recognize the system maximum peak demand placed on the system by its customers. SJLP also argues that AGP's method gives the high load factor customer too high of a recognition for its benefits to the system. SJLP argues that using its method places an equal responsibility for the coincident peak demands and the annual energy requirements. Coincident demand is the classes' demand at the time of system maximum demand.

The Commission is of the opinion that AGP's peak demand allocator is extremely narrow, focusing on <u>one</u> hour from the test year. It is premised on the assumption that the amount of PRODUCTION-DEMAND is determined <u>solely</u> on the basis of the 1990 system peak. SJLP's method places equal weights on the two highest peak demands from <u>both</u> 1989 and 1990. By using a four-period average to measure the classes' peak responsibility, SJLP has attempted to minimize the volatility inherent in measuring coincident peak on the basis of a single hour as advocated by AGP, due to the fact that the peak may have been caused by an unpredictable event that is not likely to be repeated. However, the Commission is of the opinion that a 12-month demand allocation method is preferable in that it is based on the principle that a utility installs facilities to maintain a reasonably constant level of reliability throughout the year or that significant variations in monthly peak demands are not present. Under this method, no single

peak demand or combination of single peak demands is of any significantly greater magnitude than any of the other monthly peak demands. Thus, the relative importance of each month is considered. Also, the NCP method attempts to give recognition to the maximum demand placed upon a system during the year by all customers. This method is based on the theory that facilities are sized to meet these maximum demands. Therefore, the costs of the facilities are allocated in accordance with each customer's contribution to the sum of the maximum demands of all customers imposed on the facilities. The monthly average NCP demand allocation method attempts to give recognition to the variation or diversity among monthly NCP demands placed on a system during the year by all customers. This in effect recognizes the fact that facilities are installed to provide reliable service throughout the year, including periods of scheduled maintenance. Costs of the facilities are allocated in accordance with each customer's average monthly contribution to the sum of the average monthly maximum demands of all customers. Also, the Commission is of the opinion that capacity utilization places greater emphasis on peak months in recognition of the significance that system peak has upon the peak portion of costs in the PRODUCTION-DEMAND function. This method counteracts the argument of SJLP that not enough recognition is given in the Staff's and Public Counsel's method to system peak demand. While not giving the recognition to system peak demand that SJLP's method gives, Staff's and Public Counsel's method assigns a more appropriate level to system peak demand, in the Commission's opinion.

Staff's and Public Counsel's position for the allocation for the peak demand portion of PRODUCTION-DEMAND costs using class noncoincident peak demands from each of the twelve (12) months (12NCP), with each month weighted according to capacity utilization, is adopted by the Commission.

**IV. TRANSMISSION-DEMAND:**

a. Staff, Public Counsel and SJLP believe that the same allocator should be used for both PRODUCTION-DEMAND and TRANSMISSION-DEMAND.

b. AGP believes that a coincident peak (1CP) allocator should be used for TRANSMISSION-DEMAND because transmission facilities are built to meet peak load requirements of the system.

The Commission is of the opinion that the same allocator should be used for both PRODUCTION-DEMAND and TRANSMISSION-DEMAND. The primary reason is that production plant and transmission plant are designed to meet the same criteria. AGP has argued that a transmission plant is different from a production plant in that it is built to meet peak load requirements of the system, and therefore, the costs for such should be allocated on the basis of one coincident peak. The Commission is of the opinion that the transmission plant is not different from the production plant but that it should be considered to be an extension of the production plant, where the planning and operation of one is inexorably linked to the other. Thus, the major factors that drive production costs also tend to drive transmission costs as well. The allocator adopted herein for PRODUCTION-DEMAND does in fact take into consideration peak demand. As previously stated in that issue, however, the Commission does not believe that peak demand is the sole determining factor in either PRODUCTION-DEMAND or TRANSMISSION-DEMAND. The Commission is of the opinion that peak demand is one factor among others, including energy requirements throughout the year, that should be utilized in determining an appropriate PRODUCTION-DEMAND or TRANSMISSION-DEMAND allocator.

Staff, Public Counsel, and SJLP's position that the same allocator be used for both PRODUCTION-DEMAND and TRANSMISSION-DEMAND is adopted by the Commission.

**V. DISTRIBUTION-SUBSTATIONS:**

a. Staff, Public Counsel, and SJLP believe that "class peak demand" (noncoincident to system peak) should be used to allocate DISTRIBUTION-SUBSTATIONS.

b. AGP believes that the sum of the "customer's maximum demand" is the appropriate allocator because distribution substation facilities are built to meet the sum of customer demands placed on the substations.

The Commission is of the opinion that the "class peak demand" should be used to allocate DISTRIBUTION-SUBSTATIONS. There are several factors to consider when allocating the demand components of distribution plant. Distribution facilities, from a design and operational perspective, are installed primarily to meet localized area loads. Distribution substations are designed to meet the maximum load from the distribution feeders emanating from the substation. As one moves along the utility's system from the individual customer's service drop towards the generator, equipment must be sized to serve the maximum simultaneous demand of increasingly larger groups of customers. The total cost of serving the simultaneous costs of all customers is much less than the cost of providing enough capacity to serve the sum of the individual peak electrical requirement. This is an example of the whole not necessarily being equal to the sum of the parts so that there are significant savings in the form of diversity benefits. AGP asserts that substation facilities are built to meet the sum of customers' maximum demands. This notion, if true, would lead to the construction and deployment of vastly outsized and overengineered substation facilities because it ignores patterns of load usage. AGP is in essence asking that substations be sized to meet the maximum demands of the customers as if they occurred simultaneously. Electric system distribution substations are not designed that way because they are not used that way. The likelihood of such a

simultaneous usage as utilized by AGP in its allocator is infinitesimally small. Using customer maximum demand as the basis for the allocation of demand-related costs for DISTRIBUTION-SUBSTATIONS means that those classes with the greatest diversity will receive less than their share of the diversity benefits. Adopting Staff, Public Counsel, and SJLP's allocator accounts for the situation wherein load diversity at DISTRIBUTION-SUBSTATIONS and primary feeders is usually high. For this reason the normal allocator used is customer class peaks for DISTRIBUTION-SUBSTATIONS.

Staff, Public Counsel, and SJLP's position that "class peak demand" (noncoincident to system peak) to allocate DISTRIBUTION-SUBSTATIONS is adopted by the Commission.

**VI. DISTRIBUTION-POLES AND CONDUCTORS:**

The parties agree that costs devoted to the wires and poles that comprise SJLP's distribution system should be split between "customer-related" and "demand-related" before being allocated to the customer classes, but disagree as to the proper split.

a. Staff believes the split between customer-related and demand-related costs should be made by application of the "zero-intercept" method.

(i) Staff believes the customer-related costs associated with DISTRIBUTION-POLES AND CONDUCTORS function should be allocated on the basis of "meter reading weighted customer numbers".

(ii) Staff believes the demand-related costs associated with DISTRIBUTION-POLES AND CONDUCTORS should be allocated on the basis of "class peak demand" (noncoincident to system peak).

b. Public Counsel believes the split between customer-related and demand-related costs should be on a 50/50 basis.

(i) Public Counsel believes the customer-related costs associated with DISTRIBUTION-POLES AND CONDUCTORS function should be allocated on the basis of "customer maximum demand weighted customers".

(ii) Public Counsel believes the demand-related costs associated with DISTRIBUTION-POLES AND CONDUCTORS function should be allocated on the basis of "class peak demand" (noncoincident to system peak).

c. SJLP and AGP believe the split between customer-related and demand-related costs should be made by application of the "most commonly installed facilities" method.

(i) SJLP and AGP believe the customer-related costs associated with DISTRIBUTION-POLES AND CONDUCTORS function should be allocated on the basis of "meter reading weighted customer numbers".

(ii) SJLP and AGP believe the demand-related costs associated with DISTRIBUTION-POLES AND CONDUCTORS function should be allocated on the basis of "customer maximum demand excluding minimum demand".

The Commission is of the opinion that SJLP's "most commonly installed facilities" method, while not the most preferable one, is the only method that is reasonable and supported by the data collected for the separation of costs between customer-related and demand-related.

The "most commonly installed facilities" method is similar to the "minimum-size" method. Classifying distribution plant with the "minimum-size" method assumes that a minimum size distribution system can be built to serve the minimum loading requirements of the customer. The minimum-size method involves

determining the minimum size pole and conductor (and, usually, other related components of the distribution system) that are currently installed by the company. Normally, the average book cost for each piece of equipment determines the price of all installed units. Once determined for each primary plant account, the minimum size distribution system is classified as customer-related costs. The demand-related costs for each account are the difference between the total investment in the account and customer-related costs. The "minimum-size" method generally produces a larger customer component than the "zero-intercept" method.

The "minimum-intercept" or "zero-intercept" method seems to identify that portion of plant related to a hypothetical no-load or zero-intercept situation. This requires considerably more data and calculation than the "minimum-size" method. In most instances, it is more accurate. The technique is to relate installed to current carrying capacity or demand rating, create a curve for various sizes of the equipment involved, using regression techniques, and extend the curve to a no-load intercept. The cost related to the zero-intercept is the customer component. The "zero-intercept" method, however, can sometimes produce statistically unreliable results. The extension of the regression equation beyond the boundaries of the data normally will cause an intercept at a positive value. However, in some cases, because of incorrect accounting data or some other abnormality in the data, the regression equation will cause an intercept at a negative value. When this happens, the anomalous result occurs that basically eliminates <u>all</u> customer-related costs from the distribution system being analyzed.

Public Counsel has proposed a methodology that is essentially based on educated judgment. When asked how he derived the Public Counsel's customer-demand split, Dr. Thompson explained: "I really didn't use any data so, in that sense, the results wouldn't be reproducible. I just took the correct split to

be 50/50 -- or a reasonable split." The components of the COS study were derived by objective and reproducible data analyses, and judgment based upon data and reasonableness is preferable to judgment based upon reasonableness alone.

The Staff argues that SJLP's "most commonly installed facilities" method is not the same method as the "minimum-size" method. Staff argues that SJLP studied the distribution accounts to determine its most common distribution system and developed the average cost associated with the common distribution system assuming it to be the whole system, and that SJLP classified this to be the customer-related component. Included in the customer-related component is a minimum level of demand, taken by SJLP to be the average demand of the Residential class. Staff argues that the usual "minimum-size" method recognized by the National Association of Regulatory Utility Commissioners (NARUC) includes only a "nominal" demand in the customer-related component. Essentially, the argument of Staff is that SJLP uses average size facilities and average load in its "most commonly installed facilities" method, while the NARUC-recognized "minimum-size" method uses minimum size facilities and nominal load. There is no question that the manner in which minimum size equipment is selected will directly affect the percentage of costs that are classified as demand and customer costs. Also, there is no question that the "minimum-size" distribution equipment has a certain load-carrying capacity which can be viewed as a demand-related cost. The possible result is that some customer classes can receive a disproportionate share of demand costs under the "minimum-size" method. The rationale is that customers are allocated a share of distribution costs classified as demand-related. Then those customers receive a second layer of demand costs that have been mislabeled as customer costs because the "minimum-size" method was used to classify those costs. The "zero-intercept" method usually eliminates this problem. The reason is that the customer cost derived in the "zero-intercept" method is based upon the zero-load intercept of the cost curve. Thus, the cus-

tomer cost of a particular piece of equipment has no demand cost in it whatsoever.

Assuming that Staff's arguments about the SJLP method are true, the Commission is then faced with a dilemma accurately characterized by Staff's primary witness on the issue, James Watkins, when he said: "This Commission should find that Staff's position which is based on a traditional method and information provided by St. Joseph Power & Light Company is the least unreasonable." (Emphasis added.) He went on to say most appropriately, however, that: "This Commission should weigh the shortcomings in the allocation of these distribution costs when determining if and by how much rates should be changed."

The Commission is of the opinion that the "zero-intercept" method advocated by the Staff, while it is probably the more acceptable method, must be rejected in this instance because it obtains an unreasonable result. The "zero-intercept" methodology in this case as utilized by the Staff results in a negative component for the customer-related portion of these distribution system costs. Customer-related costs are a portion of the distribution system and must be so recognized by some method. While the Staff cannot be faulted for utilizing the "zero-intercept" method, the data simply was deficient to support its use in this instance. The Public Counsel's educated judgment of utilizing a 50/50 split must also be rejected since another method is available that is based on data sources. The Commission, then, is left with only one method to adopt in this case for DISTRIBUTION-POLES AND CONDUCTORS and that is the "most commonly installed facilities" method utilized by SJLP. The Commission does not believe that SJLP's method is the same as the "minimum-size" method recognized by NARUC; however, it appears to be a close approximation. SJLP's primary witness on this issue, Timothy Rush, testified that he characterized the SJLP method as "somewhat of a minimum system." He went on to say that he believed that SJLP would not install a system that would be of any less size. His testimony further

continued: "This would be what we would install for a typical customer and a normal customer. And we really don't have facilities that would install much -- many systems a size less than what we have in the study." In light of this testimony which supports the SJLP method, the Commission determines that the "most commonly installed facilities" method used by SJLP approximates appropriately to the "minimum-size" method recognized by NARUC.

Staff, SJLP, and AGP argue for the customer-related costs to be allocated on "meter reading weighted customer numbers". The weightings that were assigned to the various classes were: one for the Residential class, four for the General Service class, and twelve for the Large Power class. The Public Counsel has advocated that customer-related costs should be allocated on "customer maximum demand weighted customers". Basing the allocation of these costs on the "meter reading weighted customer numbers" accounts for customer density, which is a key factor in the cost of distribution poles and conductors. This allocator is produced by a special meter reading study, which calculates the average amount of time spent related to reading the meters of the various customer classes. The total customer numbers in each customer class were then weighted accordingly as previously set out herein. The Public Counsel's approach, to allocate on the basis of "customer numbers weighted by customer maximum demand", does not reflect the manner in which customer density affects costs in the customer-related portion of the DISTRIBUTION-POLES AND CONDUCTORS function. While Public Counsel's approach might make some correction to the possibility of the customer-related portion of DISTRIBUTION-POLES AND CONDUCTORS containing a high percentage of the demand-related costs, the Commission will not arbitrarily try to make adjustments when there is a more reasonable approach. That approach is the allocator used by Staff, SJLP, and AGP, which is produced by a special meter reading study that takes into consideration such factors as customer density.

The Commission is of the opinion that as to the allocator to be used for demand-related costs for the DISTRIBUTION-POLES AND CONDUCTORS function, SJLP and AGP's approach, based upon "customer maximum demand excluding minimum demand", is preferable to the approach advocated by Staff and Public Counsel, which uses "class peak demand" (noncoincident to system peak). "Class peak demand" would produce a more reasonable representation of demand-related costs in the DISTRIBUTION-POLES AND CONDUCTORS function if the "zero-intercept" method were adopted. However, to be internally consistent with the "most commonly installed facilities" method adopted herein for the split, the Commission determines that it should be consistent with the allocators. The minimum system costs fall into the customer-related category and the costs above the minimum system fall into the demand-related category.

SJLP and AGP's position that the "most commonly installed facilities" method for the determination of the split between customer-related costs and demand-related costs for DISTRIBUTION-POLES AND CONDUCTORS is adopted by the Commission.

Staff, SJLP, and AGP's position that the allocator for customer-related costs for DISTRIBUTION-POLES AND CONDUCTORS be on the basis of "meter reading weighted customer numbers" is adopted by the Commission.

SJLP and AGP's position that the allocator for demand-related costs for DISTRIBUTION-POLES AND CONDUCTORS on the basis of "customer maximum demand excluding minimum demand" is adopted by the Commission.

**VII. DISTRIBUTION-TRANSFORMERS:**

The parties agree that costs devoted to transformers of the SJLP distribution system shall be split between "customer-related" and "demand-related" before being allocated to the customer classes, but disagree as to the

proper split. All parties agree that customer-related costs should be allocated on "weighted customer numbers".

a. Staff believes that the "zero-intercept" method of splitting customer-related costs from demand-related costs is appropriate.

(i) Staff believes that the "weights" developed in its updated transformer cost study are appropriate for use in the customer-related costs allocator.

(ii) Staff believes that the demand-related costs associated with DISTRIBUTION-TRANSFORMERS should be allocated on the basis of "diversified demand".

b. Public Counsel believes that a split between customer-related and demand-related costs should be on a 25 percent demand-related and 75 percent customer-related split.

(i) Public Counsel believes that the "weights" for the customer-related costs should be based on "customer maximum demand".

(ii) Public Counsel believes that the demand-related costs associated with DISTRIBUTION-TRANSFORMERS should be allocated on the basis of "diversified demand".

c. SJLP believes that the "most commonly installed facilities" method of splitting customer-related costs from demand-related costs is appropriate.

(i) SJLP believes that the "weights" developed in SJLP's study are appropriate for use in the customer-related costs allocator.

(ii) SJLP believes that the demand-related costs associated with DISTRIBUTION-TRANSFORMERS should be allocated on the basis of "customer maximum demand excluding minimum demand".

d. AGP believes that the "zero-intercept" method of Staff for splitting customer-related costs from demand-related costs is appropriate.

(i) AGP believes that the "weights" developed in Staff's initial transformer cost study are appropriate for use in the customer-related costs allocator.

(ii) AGP believes that the demand-related costs associated with DISTRIBUTION-TRANSFORMERS should be allocated on the basis of "diversified demand".

The Commission is of the opinion that the Staff's "zero-intercept" method should be used to split customer-related costs from demand-related costs as to the DISTRIBUTION-TRANSFORMERS function. As indicated in the discussion concerning DISTRIBUTION-POLES AND CONDUCTORS, the "zero-intercept" method is the most accurate in that it effectively eliminates any demand cost from the customer-related costs. Any "minimum-size" method will usually mislabel a portion of customer-related costs as demand costs. The Staff's "zero-intercept" method correctly does recognize that there are customer-related costs in line transformers, unlike the DISTRIBUTION-POLES AND CONDUCTORS function wherein application of the "zero-intercept" method did not recognize <u>any</u> customer-related costs. The Staff's "zero-intercept" method yielded a positive value rather than a negative value. Again, the "zero-intercept" method is preferable to a "minimum-size" method because the customer cost derived from utilizing the method is based upon the zero-load intercept of the cost curve and results in the customer-related cost having no demand cost in it whatsoever. For this reason SJLP's "most commonly installed facilities" method, being a derivation of the "minimum-size" method, is rejected as producing less accurate results than Staff's "zero-intercept" method. Likewise, Public Counsel's split of 75 percent customer-related costs and 25 percent demand-related costs, while it does reflect the greater customer-related costs of transformers as compared to poles and

conductors, is an arbitrary split that is essentially an educated guess and not based upon reproducible data.

All parties agree that customer-related costs of DISTRIBUTION-TRANSFORMERS should be allocated on "weighted customer numbers". The Commission is of the opinion that the proper "weights" to be used are those developed in Staff's updated transformer cost study. AGP prefers the weights which were developed by the Staff in its initial transformer cost study which, in relative terms, is outdated. SJLP used a "most commonly installed facilities" method for determining the customer-related and demand-related costs split for DISTRIBUTION-TRANSFORMERS. To quote SJLP's witness, Timothy M. Rush: "Then, the Company allocated the customer and demand portions of this account using the weighted number of customers and class maximum demand, respectively." SJLP argues that Staff's weighting factor for each class to determine the appropriate weighting for number of transformers was wrong. SJLP argues that the Large Power class was assigned a weighting of one when it should have received a weighting factor greater than one. SJLP in its study looked at the most commonly installed transformer and determined the appropriate customer weighting factor. This indicates that SJLP's weighting factors were integrally related to its utilized method of "most commonly installed facilities", which has been rejected by the Commission herein for use in the DISTRIBUTION-TRANSFORMERS function. Therefore, Staff's weighting factors more appropriately complement the adopted "zero-intercept" method of the Staff. Public Counsel believes that "customer maximum demand" is the appropriate weighting. Public Counsel states that the method is equivalent to using a weighted customer allocator where the weight is the average customer maximum demands within each class. Public Counsel's method is not based on a reproducible procedure and fails to account for: (1) the fact that SJLP serves its customers at secondary voltage levels; (2) the cost

differential between providing three-phase and single-phase service; and (3) length of conductor in addition to size.

The Staff, Public Counsel, and AGP have allocated demand-related costs in the DISTRIBUTION-TRANSFORMERS function on the basis of "diversified demand". Distribution level voltage must be transformed to lower voltage levels in order for the electricity to be usable by customers. A single transformer may serve several customers or a single customer may require several transformers. "Diversified demand" is the appropriate allocator of demand-related DISTRIBUTION-TRANSFORMERS costs because transformers must be sized to meet the coincident peak demands of the customers they serve. Since the Residential class is the only class with multiple customers for transformers, a diversity factor was calculated. For the General Service and Large Power classes, the diversity factor used was one. The sum of customer maximum demands for each class was then divided by the diversity factor to get the diversified demands at the transformers. SJLP believes the demand-related cost should be allocated on "customer maximum demand excluding minimum demand". As previously stated, this allocator is integrally related to the "most commonly installed facilities" method utilized by SJLP and should be rejected on that basis. Adopting Staff's method coincides with the NARUC position that customer-class noncoincident demands and individual customer maximum demands are the load characteristics that are normally used to allocate the demand components of distribution facilities.

Staff and AGP's position that the "zero-intercept" method for splitting customer-related costs from demand-related costs for the DISTRIBUTION-TRANSFORMERS function is adopted by the Commission.

Staff's position for "weights" developed in its updated transformer cost study for use in the customer-related costs allocator for the DISTRIBUTION-TRANSFORMERS function is adopted by the Commission.

Staff, Public Counsel, and AGP's position that the demand-related costs associated with the DISTRIBUTION-TRANSFORMERS function should be allocated on the basis of "diversified demand" is adopted by the Commission.

**VIII. DISTRIBUTION-SERVICES:**

a. Staff, Public Counsel, and SJLP agree that DISTRIBUTION-SERVICES should be allocated on "customer maximum demand".

b. AGP believes that the appropriate allocator for DISTRIBUTION-SERVICES is "meter cost weighted customer numbers".

The Commission is of the opinion that DISTRIBUTION-SERVICES should be allocated on the basis of "meter cost weighted customer numbers". The DISTRIBUTION-SERVICES is the line from the pole to the customer's meter. This service line is a customer cost with a demand component. The preferred method to allocate this cost would be to divide between customer-related costs and demand-related costs. In this case, none of the parties did this type of classification. The far greater cost component of DISTRIBUTION-SERVICES is customer-related. The meter cost weighted numbers allocator used by AGP has the effect of emphasizing customer costs over demand costs but considering both with appropriate "weighting". This method would approximate a more specific division as would be obtained in a replacement cost study. The "customer maximum demand" method advocated by the other parties unfairly penalizes large power users by overemphasizing demand. Demand for a large customer might be a thousand times greater than the demand of a small customer. By using "customer maximum demand" as an allocator, these tremendous differences in demand become the basis of allocating these largely customer-related costs. AGP's method appropriately bases the allocator largely on customer costs.

AGP's position that DISTRIBUTION-SERVICES be allocated upon the "meter cost weighted customer numbers" is adopted by the Commission.

**IX. DISTRIBUTION-METERS:**

All parties agree that costs in the DISTRIBUTION-METERS function should be allocated to the customer classes on the basis of "meter cost weighted customer numbers".

a. Staff, Public Counsel and SJLP have determined appropriate weights on the basis of SJLP's updated meter cost study.

b. AGP advocates the use of SJLP's less recent initial meter cost study as the basis for determining appropriate weights.

The Commission is of the opinion that the most recent or updated meter cost study should be used as the allocator for customer classes in the DISTRIBUTION-METERS function. SJLP performed a replacement cost study so that relative meter costs could be determined for each class. These relative costs were used to develop weights for the number of customers in each class. The Commission is of the opinion that the most recent meter cost study would more accurately portray meter costs and is the best basis for determining appropriate weights.

The position of Staff, Public Counsel, and SJLP that "meter cost weighted customer numbers" used as the basis for the DISTRIBUTION-METERS function be based on the updated SJLP meter cost study is adopted by the Commission.

**X. CUSTOMER-METER READING:**

All parties agree that costs in this function should be allocated to the customer classes on the basis of SJLP's updated "meter reading weighted customer numbers" and this position is adopted by the Commission.

**XI. CUSTOMER-BILLING AND RECORDS:**

a. **Staff:**

(i) Staff believes that customer numbers should exclude residents of master-metered apartments and, alternatively, count master-metered apartments as a single customer.

(ii) Staff believes that customer numbers should be "weighted" based upon SJLP's updated meter reading study.

b. **Public Counsel:**

(i) Public Counsel believes that customer numbers should exclude residents of master-metered apartments and, alternatively, count master-metered apartments as a single customer.

(ii) Public Counsel believes that customer numbers should be "weighted" based upon SJLP's older meter cost study.

c. **SJLP:**

(i) SJLP believes that customer numbers should exclude residents of master-metered apartments and, alternatively, count master-metered apartments as a single customer.

(ii) SJLP believes that costs in the CUSTOMER-BILLING AND RECORDS function should be allocated on the basis of unweighted customer numbers.

d. **AGP:**

(i) AGP believes that customer numbers should be determined by including residents of master-metered apartments and excluding multiple meters.

(ii) AGP believes that costs in the CUSTOMER-BILLING AND RECORDS function should be allocated on the basis of unweighted customer numbers.

The Commission is of the opinion that customer numbers should exclude residents of master-metered apartments and, alternatively, count master-metered apartments as a single customer. The costs in this function are expended to perform the tasks associated with sending bills to and collecting revenues from customers, with tracking those transactions, with turning off delinquent accounts, and with turning on new accounts as well as those brought out of arrears. The number of customers for this function is preeminent. A master-metered apartment building, whether it has one or a thousand tenants, is counted as a single customer by SJLP. SJLP performed a study of the customer billing and records and determined that the appropriate allocation for many customer-related costs should be allocated based upon the number of customers, excluding duplicates and master-metered customers. SJLP concluded that the logical assignment of cost responsibility was directly proportional to the number of customers being billed. AGP's definition of customers bears no rational relationship to the manner by which costs in this function are caused.

The weighting factors used by Staff on the customer numbers were from the updated SJLP meter cost study and were: one for Residential, four for General Service, and twelve for Large Power. Public Counsel proposes weighting based on the older meter cost study of SJLP. The Commission is of the opinion that SJLP has the better knowledge of its CUSTOMER-BILLING AND RECORDS function and that the allocation should be on the basis of unweighted customer numbers. SJLP's witness, Timothy M. Rush, stated in referring to Staff's weighting factors: "While I agree that these weights may be representative of the meter reading weights, I do not agree that they should be used for Billing and Records. These expenses are more randomly distributed among the classes and should be allocated proportionate to customers. The majority of this area is spent in handling customer turn-ons, turn-offs, billing and collections." While it may be more complicated and take more time to bill large customers than residential

customers, this does not appear to be the single most important factor in the CUSTOMER-BILLING AND RECORDS function to justify a "weighting" of customer classes.

The Staff, Public Counsel, and SJLP's position that customer numbers should exclude residents of master-metered apartments and, alternatively, count master-metered apartments as a single customer is adopted by the Commission.

The SJLP and AGP position that costs in the CUSTOMER-BILLING AND RECORDS function should be allocated on the basis of unweighted customer numbers is adopted by the Commission.

**XII. CUSTOMER-SALES AND SERVICE:**

a. Staff and AGP believe that the appropriate customer number to use as a basis for allocating CUSTOMER-SALES AND SERVICE costs should include residents of master-metered apartments and exclude multiple meters.

(i) Staff and AGP believe that "unweighted customer numbers" is the proper allocator.

b. Public Counsel believes that the appropriate customer number to use as a basis for allocating CUSTOMER-SALES AND SERVICE costs should include residents of master-metered apartments and exclude multiple meters.

(i) Public Counsel believes that the "meter cost weighted customer numbers" is the appropriate allocator.

c. SJLP believes that the appropriate customer numbers should exclude residents of master-metered apartments and include multiple meters.

(i) SJLP believes that "unweighted customer numbers" is the appropriate allocator.

The Commission is of the opinion that the appropriate customer numbers should exclude residents of master-metered apartments and include multiple

meters. Costs in this function are incurred to encourage safe and efficient use of the utility's service, encourage conservation and respond to customer inquiries concerning the proper and economic use of the utility's service and the customer's equipment. SJLP states that when a customer representative meets with customers about usage problems for a specific account, the representative would not normally meet with each tenant of an apartment which is master-metered. Without a proper study, the Commission finds that SJLP's interpretation of its CUSTOMER-SALES AND SERVICE the more appropriate position to follow in that SJLP has the more detailed knowledge of its practices.

The Commission is of the opinion that "unweighted customer numbers" is the appropriate allocator. There is no need to "weight" customer numbers as Public Counsel proposes because customer-related costs are assumed to be the same for each customer unless it is shown otherwise. Also SJLP, once again, in supporting "unweighted customer numbers", has the more detailed knowledge of its CUSTOMER-SALES AND SERVICE function in the absence of a detailed study.

The position of SJLP that the appropriate customer numbers should exclude residents of master-metered apartments and include multiple meters is adopted by the Commission.

The position of Staff, SJLP, and AGP that "unweighted customer numbers" is the appropriate allocator for the CUSTOMER-SALES AND SERVICE function is adopted by the Commission.

## Functionalization Issues

I. **GENERAL PLANT ACCOUNTS: 389 (land and land rights), 390 (structures and improvement), 391 (office furniture and equipment), 397 (communication), and 398 (miscellaneous):**

a. Staff, SJLP and AGP allocate these general plant accounts on the same basis as "gross plant".

b. Public Counsel allocates these general plant accounts on the basis of "class cost-of-service".

*The Commission* is of the opinion that the general plant accounts in issue should be on the same basis as "gross plant", which is, using an allocator based on each class's proportion of total distribution, production and transmission plant in that the general plant supports the other plant functions. Without a detailed study wherein each item of general plant or groups of general and common plant items are functionalized, classified and allocated, or without utilizing operating labor ratios, the general plant accounts are more appropriately allocated on the basis of "gross plant". As Staff's witness, James Watkins, points out, "An allocation based on current revenues is wholly inappropriate since current revenues do not necessarily reflect cost-of-service." Also as he points out, "If these costs were allocated on proposed revenues, i.e., cost-of-service, there is no effect on the percentage increases and decreases in rates (expressed to two decimal places) resulting from the class revenue requirement study because the gross plant allocator is almost identical to the proposed revenue allocator in this case." The allocator proposed based on "gross plant" is determined to be reasonable since there is no evidence that general plant does not support distribution, production and transmission plant.

The position of Staff, SJLP and AGP to allocate GENERAL PLANT ACCOUNTS 389 (land and land rights), 390 (structures and improvement), 391 (office furniture and equipment), 397 (communication), and 398 (miscellaneous) on the same basis as "gross plant" is adopted by the Commission.

**II. PRODUCTION ACCOUNTS: 502 (steam expenses), 512 (boiler plant), 513 (electric plant), 514 (miscellaneous), 553 (generating and electric plant) and 554 (miscellaneous):**

a. Staff, SJLP and AGP allocate these production accounts on the same basis as PRODUCTION-DEMAND.

b. Public Counsel allocates these production accounts on the same basis as PRODUCTION-ENERGY.

The Commission is of the opinion that the production accounts in issue should be allocated on the same basis as PRODUCTION-DEMAND. These production accounts represent the maintenance expenses associated with the power plants and other production plant facilities. The Commission has previously stated that it is reasonable to assume that maintenance costs do bear a relationship to Kwh output absent any persuasive evidence to the contrary. Also, NARUC has classified maintenance expenses as energy-related "prorated on labor." However, the Commission does not believe that maintenance expenses cannot be found to be demand-related if there is convincing evidence. The PRODUCTION-DEMAND function is allocated on a basis that gives recognition to both demand-related costs and energy-related costs. Maintenance associated with the production area can be a function of both energy and demand. Maintenance is needed not only because of the amount of energy generated, but also because of the division of use and level of peak use a certain level of maintenance is required even if the units are not operated during a period of time. As SJLP witness Timothy M. Rush testified, "Recently, boilers 1, 2 and 7 located at the Lake Road plant received maintenance involving repair and replacement of superheaters and water wall tubes. These three boilers are not operated as base load units. The maintenance was more a result of elapsed time than a result of the operation of the boilers."

Mr. Rush further points out, "The expenses assigned to account 502 (steam expense) are incurred to meet both the demand and energy requirements."

Staff points out that these costs do not vary sufficiently with the amount of generation to justify their allocation on the same basis as PRODUCTION-ENERGY. Thus, the Commission finds persuasive evidence to believe that the proper classification for these production accounts should not be exclusively energy-related.

The position of Staff, SJLP and AGP that PRODUCTION ACCOUNTS: 502 (steam expenses), 512 (boiler plant), 513 (electric plant, 514 (miscellaneous, 553 (generating and electric plant) and 554 (miscellaneous) be allocated on the same basis as PRODUCTION-DEMAND is adopted by the Commission.

**III. ACCOUNTS 504 AND 505:**

All parties believe that Accounts 504 and 505 should be split between PRODUCTION-ENERGY and PRODUCTION-DEMAND.

**Summary of Commission's Findings on Issues From Cost of Service Studies**

On November 25, 1992, the parties in late-filed Exhibit 22 were asked by the Hearing Examiner to submit two scenarios based upon proposed findings on the issues by the Commission. The Commission has decided the issues in the manner that corresponds with Scenario I (Alternative) that was submitted by the Staff. Scenario I (Alternative) differed from the requested Scenario I in the area of DISTRIBUTION-POLES AND CONDUCTORS. Scenario I (Alternative) shows the class cost of service results produced by using the customer/demand splits and the customer and demand allocators produced by SJLP's "most commonly installed facilities" method. Staff in its submission of scenario results stated therein that this approach is more internally consistent than the Scenario I, which showed the class cost of service results produced by using the customer/demand splits produced by SJLP's "most commonly installed facilities" method, but the demand allocator utilized by Staff in its "zero-intercept" method in the

DISTRIBUTION-POLES AND CONDUCTORS cost category. Staff recommended that the Commission, therefore, consider Scenario I (Alternative) in place of Scenario I. The Commission finds that Staff's submitted Scenario I (Alternative) correctly sets out the total dollar increase and total percentage increase as decided herein from Staff's base study which was adopted herein by the Commission as the starting point for quantification purposes. The Scenario I (Alternative) also shows the revenue deficiency from current rates for each customer class and the percentage rate increase from current rates for each customer class. The Commission in setting out the Scenario I (Alternative) finds these results to indicate the correct findings absent any other factors which the Commission hereafter determines to be applicable:

**SCENARIO I (ALTERNATIVE)**

SJLP: "Minimum System" Customer/Demand Splits for Poles & Conductors
SJLP: "Minimum System" Customer & Demand Allocators for Poles & Conductors

| | Residential | General Service | Large Power |
|---|---|---|---|
| Staff COS Study = Base | | | |
| **BASE REVENUE DEFICIENCY** | $ 866,127 | ($ 476,569) | ($ 389,558) |
| **BASE RATE INCREASE** (from current rates) | 3.04% | -5.95% | -1.29% |
| SJLP: POLES & CONDUCTORS | | | |
| Dollar Increase | $ 237,061 | $1,189,632 | ($1,426,692) |
| Percentage Increase (from BASE) | 0.83% | 14.86% | -4.73% |
| AGP: SERVICES | | | |
| Dollar Increase | $ 83,799 | $ 162,756 | ($ 246,555) |
| Percentage Increase (from BASE) | 0.29% | 2.03% | -0.82% |
| SJLP: BILLING & RECORDS | | | |
| Dollar Increase | $ 430,955 | ($ 302,883) | ($ 128,071 |
| Percentage Increase (from BASE) | 1.51% | -3.78% | -0.42% |
| SJLP: SALES & SERVICE | | | |
| Dollar Increase | ($ 4 ,858 | $ 4,639 | $ 220 |
| Percentage Increase (from BASE) | -0.02% | 0.06% | 0.00% |
| **TOTAL DOLLAR INCREASE** | $ 746,956 | $1,054,143 | ($1,801,099) |
| **TOTAL PERCENTAGE INCREASE** (from BASE) | 2.62% | 13.17% | -5.98% |
| **SCENARIO I (ALT) REVENUE DEFICIENCY** | $1,613,083 | $ 577,574 | ($2,190,657) |
| **SCENARIO I (ALT) RATE INCREASE** (from current rates) | 5.66% | 7.22% | -7.27% |

**Summary of Commission's Final Findings Based Upon Adopted Cost of Service Study and Other Factors**

The Commission bases its decision on the principle that the class revenue requirement of SJLP's various classes of customers should generally be based upon the cost of serving each class. However, the Commission finds in this case that strict application of cost of service study results as adopted herein does not present the most reasonable basis for establishing class revenue requirements. The Commission, therefore, adopts herein these Final Findings, which are based upon the cost of service study results heretofore adopted as adjusted by the Commission for the reasons hereafter stated. The Commission's Final Findings are as follows:

| Base Revenues RESIDENTIAL $28,495,283.35 | | Base Revenues GENERAL SERVICE $8,002,953.94 | | Base Revenues LARGE POWER $30,139,827.55 | |
|---|---|---|---|---|---|
| Percentage Increase | Calculated Revenue Deficiency | Percentage Increase | Calculated Revenue Deficiency | Percentage Decrease | Calculated Revenue Deficiency |
| 4.50% | $1,282,287.75 | 3.00% | $240,088.62 | -5.05% | ($1,522,376.37) |

The Commission has deviated from the cost of service study results adopted for two basic reasons. The first consideration involves the impact on customers resulting from a substantial increase in rate levels. This is commonly referred to as "rate shock". While the increase may not be substantial, it is of a sufficient amount for the Commission to take into consideration the resulting impact on the customer classes. The Commission is also aware of SJLP's pending general rate case, Case No. ER-93-41, before it that has an operation of law date of July 5, 1993. The potential of the increase decided herein as to Residential and General Service customers coupled with an increase in rates as a result of the pending rate case could well verge on "rate shock". Of course,

at this point the Commission has not decided and does not know if, in fact, any rate increase at all will result from the pending rate case.

The most significant reason for not strictly adopting the results of the cost of service study results determined herein involves the level of imprecision in the cost of service studies used by the parties. The level of imprecision is due largely from the fact that these cost of service studies are from the expedited handling of the so-called Phase I. It was initially determined in the Commission's June 12, 1988 order that Phase I would entail an expedited class revenue requirement study and that the findings would result in changes to rates that would be revenue-neutral to SJLP. Phase II would entail a full cost of service study and rate design study. As Staff states, absent the time constraints attributable to the expedited handling of Phase I, it would have performed, or had available, additional analyses to determine class revenue requirements with more precision. Staff stated that it would have conducted a "time-of-use" study for purposes of allocating PRODUCTION-DEMAND and TRANSMISSION-DEMAND costs. Also, Staff indicated that additional special studies, such as customer billing and records costs and primary/secondary demand splits for distribution costs, would also have proven useful in allocating other costs that were the subject of contention between the parties. Furthermore, Staff states that class loads were not weather-normalized as would typically have been done. The Commission also has adopted SJLP's methodology as to DISTRIBUTION-POLES AND CONDUCTORS, which is less preferable to the "zero-intercept" methodology. The Commission believes that more detailed cost of service data could have allowed for the use of the "zero-intercept" methodology. Therefore, for the primary reason that the very nature of the Phase I cost of service studies led to their imprecision, the Commission finds that it should not strictly adopt the results that its findings as to cost of service adopted herein would indicate. The Commission is of the opinion that the increases and decrease

in rates among the classes that it is adopting herein are supported by the evidence and are in line with the averages of all the cost of service studies as originally proposed by the parties except for the General Service customer classification. The original proposals of the parties were quite varied as to this customer class. It is for this reason and for the reason of the General Service class being extremely sensitive to distribution allocations that the Commission has varied most greatly from the adopted cost of service study results for the General Service class. Staff's witness testified, "fairly small changes make very large changes in the revenue requirement of the general service class." With this in mind the Commission has dropped the increase in rates to General Service by over half of what the adopted cost of service study results would indicate as appropriate.

The Commission is of the opinion that the increases and decrease among the classes are: (1) derived from appropriately adopted findings as to the cost of service study issues; (2) take into consideration the inherent imprecision of the Phase I cost of service studies of the parties; (3) lessen the degree of impact upon the customer classes that receive increases; (4) revenue neutral; and, (5) just and reasonable.

## Implementation

The Commission determines that the rate increases and rate decrease to the customer classes decided herein should be implemented no later than July 5, 1993, which is the operation of law date in SJLP's general rate Case No. ER-93-41, and may be implemented in the complaint Case No. EC-92-214 now pending against SJLP brought by Staff. SJLP shall file tariffs in the agreed-upon method as to the internal rate structure of the affected customer classes to implement the Commission's Final Findings herein, upon the Report And Order

of this case being ordered implemented by the Commission in either of the pending cases.

## Phase II

The Commission determines that the parties should consider the necessity for Phase II in the current pending general rate Case No. ER-93-41. If the parties agree to the need for Phase II or are unable to agree as to the necessity for Phase II, they are ordered to propose a procedural schedule as to Phase II in the context of the pending general rate Case No. ER-93-41.

## Conclusions of Law

The Missouri Public Service Commission has arrived at the following conclusions of law.

SJLP is a public utility subject to the jurisdiction of the Commission pursuant to Chapters 386 and 393, R.S.Mo. 1986, as amended. This matter was not initiated by SJLP filing a tariff under the file and suspend provisions of Section 393.150, R.S.Mo. 1986, and therefore no statutory operation of law date required the Commission to issue an order herein before a date certain.

Pursuant to Section 536.060, R.S.Mo. 1986, the Commission may approve a stipulation and agreement among the parties as to any issues in a contested case. The Commission has determined that the agreements among the parties as to all uncontested issues are reasonable and, therefore, the Commission concludes that these stipulations should be approved.

Pursuant to Section 386.270, R.S.Mo. 1986, the approved rates in effect for SJLP at this time are presumptively deemed to be just and reasonable. As per agreement and stipulation of the parties herein, the Commission concludes that any rate change directed herein based on the record in this proceeding is deemed to be revenue-neutral to SJLP.

The Commission may consider all facts which in its judgement have any bearing upon the proper determination of the setting of fair and reasonable rates.

Pursuant to Section 393.140(5), R.S.Mo. 1986, the Commission may make a determination after a hearing that the rates or charges or the acts or regulations of a regulated utility company are unjust, unreasonable, unjustly discriminatory or unduly preferential and may determine and prescribe the just and reasonable rates and charges thereafter to be in force for the services to be furnished, notwithstanding that a higher rate or charge has heretofore been authorized.

**IT IS THEREFORE ORDERED:**

1. That St. Joseph Light & Power Company's rate design for Residential, General Service and Large Power customers is ordered to be consistent with the rate design determinations made in this Report And Order so that Residential rates are increased +4.50 percent, General Service rates are increased +3.00 percent, and Large Power rates are decreased -5.05 percent from current rates.

2. That the stipulations concluded among the parties as to all other issues either set out in the Hearing Memorandum or not included in the Hearing Memorandum are hereby approved.

3. That St. Joseph Light & Power Company shall be required to implement the rate design approved herein as a result of the Commission's order in either pending Case No. EC-92-214 and/or pending Case No. ER-93-41, but not later than the operation of law date of July 5, 1993 in Case No. ER-93-41.

4. That St. Joseph Light & Power Company shall file revised tariffs implementing the rate design determined in this Report And Order as to the internal rate structure for the affected customer classes within thirty (30) days of and pursuant to the Commission's order in either Case No. EC-92-214 and/or

Case No. ER-93-41. The changes in class revenues herein ordered shall be translated into St. Joseph Light & Power Company's existing tariffs (rate codes herein stated) as an equal percentage increase or decrease to each rate component on each tariff associated with each customer class: Residential - 110, 120, 135, 150, 620, 630 and 640; General Service - 210, 220, 250, 260, 461, 551, 790 and 791; and Large Power - 310 and 320. Tariffs that refer to rate codes 620 and 640 appear both in Residential and General Service classes and those tariffs need to be adjusted to correspond to the increase made to the Residential class.

5. That St. Joseph Light & Power Company, the Commission's Staff, the Office of Public Counsel, and Ag Processing, Inc., shall consider the necessity for Phase II of the cost of service study, previously ordered in this case, in Case No. ER-93-41 and shall therein propose a procedural schedule for Phase II if it becomes necessary.

6. That late-filed Exhibit 22, dated November 25, 1992, which was a request by Examiner Graham for completion of hypothetical cost of service study scenarios and the responses thereto by the parties, and late-filed Exhibit 23, dated December 9, 1992, which was a request by Examiner Graham for completion of hypothetical distribution to class scenarios and the responses thereto by the parties, be hereby received into evidence.

7. That any objections not heretofore ruled upon be hereby overruled and any outstanding motions be hereby denied.

8. That this Report And Order shall become effective on the 22nd day of December, 1992.

BY THE COMMISSION

Brent Stewart

Brent Stewart
Executive Secretary

(S E A L)

McClure, Chm., Mueller, Rauch, Perkins and Kincheloe, CC., concur and certify compliance with the provisions of Section 536.080, R.S.Mo. 1986.

Dated at Jefferson City, Missouri, on this 11th day of December, 1992.