Exhibit No.
Issue: Rate Design
Witness: H. Edwin Overcast
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Empire District
Case No. ER-2004-0570
Date Testimony Prepared: Nov 4, 2004

FILED[3]
DEC 2 8 2004
Missouri Public Service Commission

Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

of

H. Edwin Overcast

November 2004

Exhibit No. 25
Case No(s). ER-2004-0570
Date 12-06-04 Rptr KF

Exhibit No.
Issue: Rate Design
Witness: H. Edwin Overcast
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Empire District
Case No. ER-2004-0570
Date Testimony Prepared: Nov 4, 2004

Before the Public Service Commission
of the State of Missouri

Rebuttal Testimony

of

H. Edwin Overcast

November 2004

AFFIDAVIT

STATE OF MISSOURI)
) ss
COUNTY OF JASPER)

On the 3rd day of November, 2004, before me appeared H. Edwin Overcast, to me personally known, who, being by me first duly sworn, states that he is the Vice President of R. J. Rudden Associates, Inc. that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

H. Edwin Overcast
(Name)

Subscribed and sworn to before me this 3 day of Nov, 2004.

Becky Morris
(Name), Notary Public

My commission expires: Becky Morris
Notary Public, Henry County, Georgia
My Commission Expires December 3, 2004

Rebuttal Testimony of

H. Edwin Overcast

On behalf of

The Empire District Electric Company

INTRODUCTION

Q. Please state your name and business affiliation.

A. H. Edwin Overcast, Vice President R. J. Rudden Associates, Inc.

Q. Are you the same H. Edwin Overcast who previously filed testimony in this case before the Missouri Public Service Commission ("Commission") on behalf of The Empire District Electric Company ("Empire")?

A. Yes. I filed direct testimony in this case.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony addresses issues related to the testimony of certain Commission Staff ("Staff") witnesses related to proposed rate design, seasonal cost allocation and the level of fixed and variable costs included in the Empire revenue requirements. In addition, my testimony responds to testimony provided by the Office of Public Counsel ("OPC") related to rate design.

Q. How is your testimony organized?

A. Section One of the testimony begins by precisely defining terms necessary to respond to the Staff and OPC testimony and to analyze their recommendations related to cost of service and rate design. The foundational basis of any discussion of rate design and cost allocation begins with the sound definitions.

Using these definitions, Section Two provides a demonstration that certain Staff and OPC conclusions are correct while others are incorrect. This part of my testimony also discusses the logical implications of the various proposals before the Commission and demonstrates that certain of the proposals contained in Staff and OPC direct testimony are not supported by the evidence and must be rejected. Finally, Section Three demonstrates that the rate design changes proposed by Empire are based on proper principles and follow directly from sound economic theory.

Section One- Definitions

Q. Please indicate the terms that must be defined properly to develop sound rate design and cost allocation proposals and thus respond to the Staff and OPC direct testimony.

A. We must define the following terms:

- Costing Period
- Rating Period
- Fixed Costs
- Variable Costs
- Capacity Demand
- Fixed Charges
- Variable Charges
- Joint and common costs

Q. Please define the term "costing period".

A. The term "costing period" is critical to the discussion of a seasonal cost analysis. A precise definition allows the cost analyst to develop a rationale for a particular cost period as opposed to assuming that certain months, days or hours constitute a costing period. The *Electric Utility Cost Allocation Manual* ("NARUC Manual") published by the National Association of Regulatory Commissioners ("NARUC") defines a costing period as "a unit of time in which costs are separately identified and causally attributed to different classes of customers." The NARUC manual recognizes that the determination of costing periods relies on marginal cost analysis as distinct from embedded cost analysis. This distinction is crucial because most of the system costs for an electric utility are fixed (to be defined below). Fixed costs by definition do not vary over time or by season. Indeed, Staff witness Ms. Pyatte recognizes that fixed costs do not vary by season in her testimony when she states "The "fixed" component would be billed on a $-per-maximum-kW basis, would be called a "facilities charge," and the associated rates would be the same in both the summer and winter billing seasons." This statement is true for all fixed costs, that is, once incurred the costs do not vary by season.

Q. Please define the term "rating period".

A. The concept of rating period translates costs into rates that reflect the costs for a period. NARUC Manual defines a "rating period" as " a unit of time over which costs are averaged for the purpose of setting rates or prices." Importantly, NARUC recognizes that rating periods need to group together periods of similar costs. The tendency to assume that some set of months constitute a season does not meet the test for efficient price signals and leads to faulty conclusions regarding appropriate price signals. Detailed marginal cost analysis is a prerequisite to the determination of appropriate rating periods whether it is seasonal differentiation or time-of-use rates. The rating period at issue in this proceeding is the definition of the "summer season".

Q. Please define the term "fixed costs".

A. The economic definition of "fixed costs" is costs that do not change with the level of output over the relevant time period. In a rate case, the relevant time period is the test period. Even if we view fixed costs over a longer time horizon than the test year and include the rate effective year in addition to the test period (for sending sound economic price signals the rate effective period is a superior basis for analysis), the largest portion of Empire's costs are fixed. In the case of electric service, the level of output is measured in Kwh. Thus, fixed costs do not change during the rate effective period as a result of changes in the number of Kwh produced.

Q. Please define the term "variable costs".

A. The economic definition of "variable costs" is costs that vary with output over the relevant time period. In this case, variable costs are the costs that change with increases or decreases in Kwh output. Simply, variable costs are the cost of fuel and purchased power (excluding demand charges associated with long-term power supply contracts) and any variable O&M expenses that result from the changes in output such as additional maintenance that results from extra hours of operation for some generating technologies. No distribution, transmission or plant capacity costs are variable. These costs are sunk costs and will not change even if no Kwhs are produced. Further, these costs will not increase in the rate effective period if the system were to double output. Purchased power and fuel expense would increase substantially under these conditions because these costs are truly variable.

Q. Please define the term "capacity demand".

A. "Capacity demand" is the sum of all of the factors that use the capacity of the system. The largest factor is the load of customers measure in kilowatts. In addition, capacity demand includes any reduction in the capacity output capability of a plant resulting from scheduled maintenance, seasonal unit deratings and forced outages. In any analysis of seasonal cost differences using marginal cost (the correct basis for such analysis as noted above) it is necessary to understand the impact of all factors that consume available capacity. The NARUC Manual recognizes the impact of outages in its discussion of the use of Loss of Load Probability ("LOLP") in the determination of marginal capacity costs. It is incorrect to focus attention solely on load to determine costing or rating periods. Power system analysis dictates that the system be designed and operated with an acceptable level of risk that a condition occur where the customer load exceeds available generating capacity. Stated in this way, customer load exceeds the installed capacity minus the capacity unavailable due to maintenance, forced outage or unit derating. By the associative property of mathematics, we may add customer load and maintenance, forced outage and unit derating to produce total capacity demand.

Q. Please define "fixed charges".

A. "Fixed charges" are rate elements that do not vary with the consumption of energy or power. For an electric utility, fixed charges under a rate schedule include the customer charge, minimum bill or service charge and any defined minimum level of usage. For example, an industrial schedule might require a minimum billing demand of 100 Kw. In that event the demand charge times the minimum demand becomes a fixed charge.

Q. Are demand charges fixed charges?

A. Demand charges may be fixed or variable. Demand charges vary with the consumption of power ("Kw") measured over some short time interval such as 30 minutes or an hour. Depending on the applicable tariff provisions the charges may be fixed or variable. As noted above, the charge may be fixed based on a minimum billing demand. The charges may be fixed in whole or in part for some length of time by the operation of a ratchet provision such as billing demand equal to the demand in the current month or 80 percent of the highest demand occurring in the prior eleven months whichever is greater. A rate may include a contract demand provision that sets the billing demand at a contract level based on the highest demand recorded at any time and thus become fixed going forward. A rate that includes no ratchet provision and no minimum demand is a variable rate based on the actual demand occurring during the billing period.

Q. Please define "variable charges".

A. "Variable charges" change with changes in billing determinants for power and energy. Energy charges usually represent variable charges. To the extent that power charges are not fixed, as discussed above, these charges vary with power consumption. These distinctions are important because both power and energy charges vary with weather. Thus, a utility is subject to revenue that does not match fixed costs for both certain types of demand charges and for energy charges. The exposure to demand charge variability depends on weather extremes while the energy charge exposure depends on the duration of the extremes. Thus a cooler than normal summer, in the absence of tariff provisions to fix the demand charge, produces revenue erosion that may be greater than the effect of the energy charge alone. This change in revenue directly impacts earnings where the demand charge recovers fixed cost. The problem is compounded when fixed cost recovery is included in the energy charges as well.

Q. Please define "joint and common costs".

A. Where the same generating capacity supplies power and energy at different times such as tomorrow or next week, plant costs are either common or joint. The distinction between common and joint costs is the proportionality of the products produced. Where the products must be produced in a fixed proportion the costs are joint. The classic example is beef and hides. Where products are produced in varying proportions, the costs are common. In the case of electric service, most costs are common. Where costs are common as in the case of a kilowatt-hour from a plant in January or August, the marginal cost of the kilowatt-hour may be identified directly. The allocation of the fixed (sunk) costs of the plant is arbitrary and lacks economic significance. There is no economic logic that allows the separation of the embedded fixed costs between the kilowatt-hour in January or August. If, however the production of a January kilowatt-hour precluded the production of an August kilowatt-hour, it would be possible to determine the portion of the capacity costs allocable to January. This is not the case for electricity production between seasons with the exception of limited energy technologies. It is the existence of common costs that necessitates the determination of rating periods on the basis of marginal costs.

Section Two- Correct and Incorrect Conclusions

Q. How has the Staff determined seasonal costing and rating periods?

A. The Staff has presented no evidence to support the chosen costing and pricing periods. On the contrary, the Staff incorrectly assumes a set of rating periods based solely on the rating periods previously adopted by the Commission. For example, Staff Witness Ms. Hu discusses the concept of a seasonal cost study and assumes that the calendar months of June, July, August and September constitute a season.

Q. How do you respond?

A. The process is incorrect because it results in combining months with very different costs into a single season. The average marginal cost for September ($19.946 per Mwh) is lower than the average for the eight months used by Staff as the winter season ($20.2375 per Mwh) and lower than four of the winter months individually (January, February, March and April). June has an average marginal cost ($21.799 per Mwh) that is only 7.7 percent greater than the eight-month average. The July average marginal cost (31.715 per Mwh) is 45.5 percent higher than June and August ($33.310 per Mwh) is 52.8 percent greater than June. It is an error to conclude that the months of June and September have similar costs and similar costs is a necessary condition for the determination of a rating period.

Q. What is the result of this approach?

A. This arbitrary and capricious determination of costing and rating periods has far reaching results that, among other things, places substantial regulatory risks on Empire.

Q. Please explain.

A. The regulatory risk arises directly from the differences in the summer energy prices recommended by the Staff and the marginal costs for the months of June and September. The difference is far too large to be justified by the costs in these months. Further, the level of fixed cost recovery in the rates for the months of June and September exceeds the fixed cost recovery in July and August substantially without any rational for this unreasonable rate outcome. The fixed cost recovery contained in the seasonal rates for July and August also exceeds any level that might be justified by cost differences for these months. Further, the seasonal differential is far greater than the difference in costs. It is unreasonable and inefficient to support rates that deviate from the underlying cost differences.

Q. How does the Staff calculate seasonal costs?

A. The Staff allocates costs to the seasons it has assumed based on embedded cost.

Q. How do you respond?

A. Embedded cost allocation provides no assistance in designing seasonal rates because any allocation between seasons is arbitrary because of joint and common costs. Any argument that attempts to rationalize seasonal price differentials on embedded cost is incorrect because of the issues related to common and joint costs.

Q. Please explain.

A. Staff Witness Ms. Hu describes the method used to allocate the capacity costs as the capacity utilization method. The fundamental assumption underlying this allocation is that the capacity costs of the plant vary with the level of use. Such an assumption is incorrect.

Q. Why?

A. Whether the plant runs one hour or 730 hours in a month, the plant costs are sunk and do not vary with use. The total cost of the plant measured by depreciation, cost of capital and non-fuel O&M does not change whether it operates at the minimum generating capacity or the maximum capacity. In essence, the Staff argues that the fixed cost of a plant may be properly allocated on the energy produced within a month.

Q. Do you have any other comments on this point?

A. Yes. In addition to the allocation of capacity costs on an energy basis ("the proportion of capacity that is utilized each month"), this method fails to recognize that capacity is also used when the units are not available. That is, there is a demand on capacity greater than load because of the nature of the physical facilities. Given the actual demand on the capacity of the system and ignoring the required maintenance, the capacity forced outages and deratings, fails to recognize the reality of the systems operation and true cost causality. It is a fundamental principle of cost allocation that a cost study identifies the apparent cost responsibility and reflects the engineering and operating characteristics of the system. The Staff proposal does not meet this fundamental requirement.

Q. Does the Staff's proposed allocation of costs between fixed and variable costs confirm that capacity costs are allocated on an energy basis?

A. Yes. Schedule 3.6 to the testimony of Staff witness Hu indicates that over 70 percent of capacity costs are classified as either variable or energy.

Q. How do you respond?

A. Such a result is unjustified for the fixed costs of power production that does not change with the level of energy produced by the plant. From the definition of fixed costs, costs that do not change with output are fixed not variable. Thus, the return, depreciation, taxes and other costs such as fixed O&M do not vary with the production of energy. For this reason, the Staff is incorrect in its characterization of these costs as variable or energy related.

Q. Could there be some amount of variable O&M associated with certain generating technologies?

A. Yes, but Staff has provided no evidence that any of the O&M costs are variable. There is no study; no report and no breakdown of plant O&M that shows any of these costs to be variable. Rather, the Staff arbitrarily assumes that cost are variable even when the costs do not change regardless of output. This is certainly the case for the cost of capital, depreciation and most O&M expenses and overheads. In terms of variable costs, only 34 percent of the revenue requirement (based on Schedule 3.6 of Staff Witness Ms. Hu) is actually variable. As a practical matter, there may be other small amounts of variable cost, but nowhere near the almost double amount assumed by Staff. Further evidence of this point is that neither the staff nor Empire has found it necessary to adjust the plant capacity costs up or down to reflect normal weather conditions although fuel costs (actual variable costs) are adjusted. This inconsistency alone demonstrates the incorrect nature of the Staff conclusions. If the Staff believed these costs were variable, consistency requires that the Staff adjust these costs. No adjustment is made because the costs are actually fixed.

Q. **Does the Staff's allocation and classification of fixed costs as variable or energy related impact the Staff's recommendations on rate design?**

A. Yes. The Staff uses the incorrect results of the allocation and classification as justification for its rate design proposals. In essence, the foundation for the Staff's recommendations is an arbitrary, unjustified and incorrect set of conclusions. Thus, the evidence does not support the Staff proposals. More importantly, there is strong evidence that has not been contradicted or shown to be incorrect that Empire's proposed rates are consistent with cost of service, move in the direction of more economically efficient rates and are just and reasonable. The Staff rates, as discussed more fully below, are not just and reasonable.

Q. **How should fixed costs be allocated between summer and winter?**

A. The use of rates based on marginal cost will allocate a portion of the fixed costs between summer and winter based on proper economic principles not on arbitrary allocation. Similarly, the use of marginal cost principles will also allocate capacity costs of different technologies efficiently. A simple example will illustrate that these statements are correct. Assume that a utility has two generating units with the following characteristics. Unit A has a fixed capital cost, including depreciation and fixed O&M of $200 per Kw and a full load average running cost of $15.00 per Mwh. The marginal running cost for the unit will vary with higher than average costs for both minimum load and maximum rated load. The marginal cost curve is u-shaped. The second unit- Unit B has a fixed capital cost of $50.00 per Kw and an average running cost of $30.00 per Mwh. Its marginal running cost curve is also u-shaped. In the summer, when both units run, marginal running cost is at least $30.00. By using marginal running cost as the energy charge in each hour that the unit runs, there is a $15.00 per Mwh contribution to the fixed cost of Unit A in hours that unit B runs. This amounts to an allocation of the fixed cost that is economically justified. No arbitrary allocation of fixed cost is required to share the costs by season and the appropriate price signal results. This same conclusion holds for recognizing that higher capital costs are incurred to produce energy cost savings. Thus in those hours where Unit B operates, the contribution to the capital cost of Unit A recognizes that the benefit of energy cost savings is shared by the recovery of a portion of the fixed costs.

Q. Does this example address all issues?

A. No. This is a simplified example and does not address all of the issues including whether or not the marginal running cost produces enough revenue to recover the total fixed costs of the system. At this point, there is no proposal before the Commission that hues strictly to marginal cost and thus this is not an issue. Rather, the proposal is to improve the rate design by moving to an economic basis for the seasonal differential and moving the tail-block of energy only rates toward but not to marginal cost. The implied allocation of fixed and variable costs by season resulting from the Empire proposal is consistent with the recovery of fixed costs in a more efficient and equitable manner for both Empire and its customers.

Q. Is it correct to assume that a portion of the cost of transmission and distribution system is variable?

A. No. The cost for transmission and distribution at issue in the test year (or even over much longer periods) do not change with the amount of energy produced. These costs are classic fixed costs. Schedule 3.6 (Staff Witness Ms. Hu) assumes approximately $16.9 million of these costs are variable. Even casual observation demonstrates that changes in energy consumption during the rate effective period will not cause distribution costs to change. If this is true, both the Staff and Empire need to weather normalize transmission and distribution costs in the filing. They have not done so because the costs are not variable.

Q. Do the rates proposed by Staff promote economic efficiency?

A. No. The energy only rates proposed by Staff do not reflect cost, place too much of the fixed costs of the rates in the tail-block and implicitly assume that a flat summer rate promotes efficient use. Efficient use results from rates based on marginal cost. The result of the excess allocation of fixed costs to the summer and the flat rate design causes the rate for incremental summer use to exceed marginal cost by amounts that cause consumers to make inefficient decisions and Empire to be exposed to unwarranted and, apparently, uncompensated risk. Economically efficient rates for the energy only customers requires that the summer rates also have a declining block feature with the tail block only slightly higher than the winter tail black as proposed by Empire.

Q. Does the collection of the Staff's calculated seasonal costs match the seasonal recovery in the proposed rates?

A. No. By the Staff's own calculation there is over $13 million of excess cost recovery in the summer season. Further, the Staff allocation of costs between summer and winter is unreliable. The allocation of fixed demand costs on the basis of energy over allocates a portion of the system costs to the summer season. Making this correction would reduce the portion of costs allocated to the summer and therefore the required summer rates would also be reduced. The evidence provided by Empire supports a reduction in the seasonal recovery and in the tail-block of the energy only rates.

Q. Do the rates proposed by Staff properly recover fixed costs through fixed charges and variable costs through variable charges?

A. No. The Staff found that 82 percent of the revenue is collected through the variable energy charges (Staff Witness Ms. Pyatte p.7 line 6.) As noted above, only 34 percent of the revenue requirement is correctly identified as variable.

The Staff assumes that 86 percent of the costs are variable. This calculation cannot be correct as demonstrated above based on the definition of fixed and variable costs.

Q. Is it correct to assume that distribution costs must be recovered in the energy charge for rates without a demand charge?

A. No. Economically efficient rates set energy charges at marginal cost and recover additional revenue requirements from the customer charge or other fixed charges. With an efficient rate, it is possible that the customer charge may be greater than the allocated customer costs. Empire has not proposed such a rate and has actually proposed a customer charge that is less than the allocated customer costs. Moving toward the fully allocated customer costs as the basis for the customer charge is a necessary step toward reducing the portion of fixed costs recovered in variable charges.

Q. Please discuss the elements of the Staff's proposed small customer rate design.

A. Staff small customer rate design proposal is based on the following:

- Maintain the existing rate blocks
- Maintain the seasonally-differentiated energy rates (i.e., higher rates charged in the summer season than in the winter billing season)
- Maintain the "flat" (uniform cents per kWh) feature of the summer energy rates to provide proper "price signals" to customers
- Charge the same standard customer charge on the CB and SH rate schedules

Q. How do you respond?

A. The Staff proposed elements of the small customer rate design continue the status quo for these rates. The first two elements are consistent with Empire's proposal. The third element supporting a flat rate in the summer cannot be supported based on the evidence before the Commission. The Staff errors in its cost of service analysis and rate design testimony related to the mischaracterization of fixed and variable costs, the arbitrary allocation of fixed costs between seasons and the failure to demonstrate that the current seasonal energy cost differential is in any way based on cost differences that matter in designing rates mitigate against the Staff's proposal. Importantly, Empire has demonstrated analytically that the proper cost differential between seasons will not support the continuation of the flat summer rate. The flat summer rate produces a number of unacceptable consequences for customers. The consequences include intra-class subsidies from summer consumption to the winter, intra-class subsidies from large customers to small customers within the summer season and potential revenue instability that will, in the long-run, increase the cost of service for all customers. Further, the Staff's rates provide incorrect price signals and result in the direct waste of societies resources. Although Empire's proposal does not resolve these problems in total, the proposal takes a necessary and prudent step toward resolution. Empire thus maintains a sense of continuity between its current and proposed rates while beginning the process of adjusting rates to a more reasonable and economically sound rate design.

Q. Please comment on the Staff's proposed large customer rate design.

A. The elements of the Staff large customer rate design proposal are as follows:

- Maintain seasonally-differentiated energy and demand rates (i.e., different rates charged in the summer season than in the winter billing season);
- Introduce a distribution facilities charge to the GP, TEB, and LP rate schedules;
- Introduce a discount to the Large Power rate schedule to apply to any customers delivered at a higher-than-primary voltage level;

- Maintain the multi-HU rate block feature of the energy charge;
- Preserve the "continuity-between-rate-schedules" feature of the GP and LP rate schedules; and
- Charge the same standard customer charge on the GP and TEB rate schedules.

Q. How do you respond?

A. Many of the comments regarding the small customer rate elements apply to large customers as well. The seasonal differentiation in the energy charges is too large as are the demand charge differences in the GP and LP rate schedules. Empire's proposed design is more efficient and more nearly cost based than the Staff proposal. The introduction of the facilities charge is an important and positive step toward more efficient rates. The Staff correctly recognizes the fixed nature of the costs and that the costs are properly allocated and recovered on the maximum non-coincident demand of the customer. It is also correct to discount the LP rate for delivery at transmission voltage. Care must be taken, however, to recognize that some transmission facilities may require direct assignment to customers taking service at transmission voltage where those facilities are lateral in nature and serve a single or group of customers. Such charges also should be properly reflected in a facilities charge, if applicable. Hours-use of demand as the basis for energy charges is also positive and consistent with Empire's proposal. Empire also supports rate continuity between schedules and consistency of customer charges as contained in their own proposal.

Q. Please comment on the Staff's proposal to use maximum demand as the basis for assessing customer charges.

A. There are a number of problems with any proposal that makes the customer charge a variable rate component. For commercial customers, the size and type of meter and the installation requirements determine whether a different customer charge is warranted more so than the billing demand in the prior 12 months. Empire supports the concept of different customer charges as an improvement in the ability of rates to track costs and suggests that the important variable for such differentiation is the meter and related investment. Empire believes that in the future, it will be possible to develop a set of variable customer charges based on costs. At such time as Empire determines that variable customer charges are appropriate and supportable, Empire will propose such a change.

Q. Please discuss the Staff's position related to a facilities charge.

A. The Staff discussion of the facilities charge provides further indication that the Staff incorrectly defines fixed and variable costs. The Staff suggests that a portion of the distribution cost is variable. No distribution costs vary directly with the amount of energy consumed and all distribution costs are fixed once the facilities are in place. It appears that the Staff confuses the portion of the distribution investment related to maximum demand as if it varies with energy consumption. The design of certain distribution facilities changes based on the expected coincident demand of customers on those facilities. Once in place, these costs are fixed and do not change with changes in the energy consumption of the customers served from those facilities. It is certainly appropriate and sound cost analysis to allocate non-customer related costs on the basis of the customers' peak demands. The more distant facilities are from the customers meter, the appropriate cost allocation factor moves from the individual peak to the class coincident peak as the factor to allocate distribution service costs. No energy cost allocation is used for distribution costs. Local facilities, including transformers and local distribution facilities must be sized to meet the maximum customer load. Even certain investment in poles may be related to individual customer demand and therefore must be allocated between the customer and demand component of the rate. For larger customers, it is possible that certain substation investment relates directly to the customer. The detailed analysis of these issues helps to establish the proper level of facilities charge for each customer, particularly when facilities are uniquely designed to serve a customer. Billing a facilities charge permits better-cost recovery and rates that reflect costs more accurately when the facilities charges are properly calculated based on an understanding of the system characteristics. The facilities charge should also apply to the schedule PFM – Feed Mill and Grain Elevator Services because of the seasonal nature of these loads and the fixed distribution cost incurred to serve the load.

Q. Is it reasonable to conclude that distribution costs vary by season?

A. Distribution costs may vary by season. However, the analysis prepared by the Staff is incapable of determining if the costs vary by season for Empire. For example, the class NCP for the residential class occurs in the winter, not the summer. Thus for this class at least the cost driver is not necessarily the summer demand. The Staff provides no evidence that the diversity of class NCPs properly attributes demand to the summer season for the portion of demand related to NCP. The simple fact is that the distribution system is an example of common costs that are only arbitrarily assigned between seasons an embedded cost basis.

Q. If the errors in the Staff assumptions and analysis are corrected, please describe the resulting rate design.

A. Having a correct understanding of the underlying requirements for rating periods, namely that costs be similar, would require that the summer season be reduced to the calendar months of July and August. The current seasonal differential of almost three cents per kilowatt-hour would be reduced by almost half to less than $0.013 per Kwh. Consistent with the recognition of the fixed nature of distribution costs, the customer charges for energy only rates would increase up to the embedded cost level at a minimum. Given that variable costs represent about one-third of the revenue requirement and that the Staff seeks to match fixed cost recovery in fixed charges and variable cost recovery in variable charges, the energy charges of the energy only rates would be reduced. Importantly, the use of correct definitions of costs would also lead to the conclusion that for energy only rates, a declining block rate is cost based.

Section Three- The Empire Rate Proposal

Q. Do the rates proposed by Empire reflect the realities of cost of service and economic efficiency?

A. Yes. The current Empire rates exhibit a number of non-cost based characteristics and appear to have evolved through time in ways that do not reflect the realities of Empire's system. This outcome is not unusual or unique as many companies have rates today that have not kept pace with economic changes and the realities of system costs. As a result of a number of years of rate changes based on the absence of a detailed analysis appears to underlie the current rates. Based on the discussion of the rate history of Empire provided as Schedule 1 of Staff Witness Ms. Pyatte, it appears that the genesis of the current rate design begin with a case in 1991 and implemented in 1994. Since that time, there have been substantial changes in the electric industry. Also, since that time Empire has conducted a detailed review of its costs and tariff. That review concluded that the changes required to conform the Tariff to an efficient and reasonable tariff were significant. As a result, Empire recognized that some movement toward a more appropriate rate system should begin with this filing. The rates proposed represent the first such step in modifying the tariff to provide better price signals, track costs more closely and to reflect a movement to more economically efficient rates. The proposed tariff provisions accomplish these goals consistent with the analysis and evidence provided to support the changes.

Q. Please illustrate the elements of Empire's proposal that reflect updated analysis.

A. There are several examples that illustrate the evidentiary support for the Empire proposal. First, the determination of rating periods relies on grouping together periods with similar costs. Empire filed a detailed statistical analysis that demonstrates that costs for the current summer season does not represent the periods with the most common cost. Further, the correct analysis of seasonal cost differences provided by Empire proves that the current differential is far too large. In its proposal to resolve these issues, Empire elected to maintain the current seasons but to reduce the differential. Second, Empire provided a cost basis for the determination of the customer charge component. The fact that customer costs exceed the customer charge supports the use of a declining block rate for both the summer and the winter. Fixed costs must be recovered if Empire is to be provided a reasonable opportunity to earn its allowed return. Third, Empire made its proposals so as to minimize the volatility of the weather sensitive component of the rates. By reintroducing the declining block rate in the summer, Empire reduces the customers' exposure to weather related bill volatility. At full rate relief, summer volatility is reduced by over $1.00 per 100 Kwh. This benefits all customers but in particular low-income consumers who tend to be more weather sensitive. Fourth, by moving the tail-block charges of the energy rates closer to marginal cost, Empire provides more efficient price signals to consumers. Price signals are critical for meeting the rate design objective of optimum use. The current rates and the rates proposed by Staff fail in this regard.

Q. How should Empire's proposed rates be implemented to meet the goal of efficiency and equity?

A. The Commission should, as a matter of policy, adopt the customer charges proposed by Empire and the declining block rates. Rates should be adjusted to provide the approved revenue requirement within Empire's proposed rate structures with two exceptions. That exceptions are the creation of a transmission credit for the LP rate for customers who do not use distribution facilities and the Facilities Charge provision proposed by the Staff should be accepted.

Q. Does this complete your testimony?

A. Yes.

Exhibit No.
Issue: Rate Design
Witness: H. Edwin Overcast
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Empire District
Case No. ER-2004-0570
Date Testimony Prepared: Nov 4, 2004

Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

of

H. Edwin Overcast

November 2004

AFFIDAVIT

STATE OF MISSOURI)
) ss
COUNTY OF JASPER)

On the 3rd day of November, 2004, before me appeared H. Edwin Overcast, to me personally known, who, being by me first duly sworn, states that he is the Vice President of R. J. Rudden Associates, Inc. that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

H. Edwin Overcast
(Name)

Subscribed and sworn to before me this 3 day of Nov, 2004.

Becky Morris
(Name), Notary Public

My commission expires: Becky Morris Notary Public, Henry County, Georgia My Commission Expires December 3, 2004

Rebuttal Testimony of

H. Edwin Overcast

On behalf of

The Empire District Electric Company

INTRODUCTION

Q. Please state your name and business affiliation.

A. H. Edwin Overcast, Vice President R. J. Rudden Associates, Inc.

Q. Are you the same H. Edwin Overcast who previously filed testimony in this case before the Missouri Public Service Commission ("Commission") on behalf of The Empire District Electric Company ("Empire")?

A. Yes. I filed direct testimony in this case.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony addresses issues related to the testimony of certain Commission Staff ("Staff") witnesses related to proposed rate design, seasonal cost allocation and the level of fixed and variable costs included in the Empire revenue requirements. In addition, my testimony responds to testimony provided by the Office of Public Counsel ("OPC") related to rate design.

Q. How is your testimony organized?

A. Section One of the testimony begins by precisely defining terms necessary to respond to the Staff and OPC testimony and to analyze their recommendations related to cost of service and rate design. The foundational basis of any discussion of rate design and cost allocation begins with the sound definitions.

Using these definitions, Section Two provides a demonstration that certain Staff and OPC conclusions are correct while others are incorrect. This part of my testimony also discusses the logical implications of the various proposals before the Commission and demonstrates that certain of the proposals contained in Staff and OPC direct testimony are not supported by the evidence and must be rejected. Finally, Section Three demonstrates that the rate design changes proposed by Empire are based on proper principles and follow directly from sound economic theory.

Section One- Definitions

Q. Please indicate the terms that must be defined properly to develop sound rate design and cost allocation proposals and thus respond to the Staff and OPC direct testimony.

A. We must define the following terms:

- Costing Period
- Rating Period
- Fixed Costs
- Variable Costs
- Capacity Demand
- Fixed Charges
- Variable Charges
- Joint and common costs

Q. Please define the term "costing period".