Exhibit No.: _____
Issue: Class Cost of Service Study
Witness: F. Jay Cummings
Sponsoring Party: Missouri Gas Energy
Case No.: GR-2009-0355
Date Testimony Prepared: September 28, 2009

MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI GAS ENERGY

CASE NO. GR-2009-0355

REBUTTAL TESTIMONY OF

F. JAY CUMMINGS

Jefferson City, Missouri

September 28, 2009

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Schedule FJC-9	Class Cost of Service Study – Updated Test Year Revenue Requirement
Schedule FJC-10	Selected Cost of Service Component Allocation Differences Between the Company, Commission Staff, and Office of Public Counsel

REBUTTAL TESTIMONY OF F. JAY CUMMINGS

CASE NO. GR-2009-0355

SEPTEMBER 28, 2009

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is F. Jay Cummings. My business address is 3625 North Hall Street, Suite 750, Dallas, Texas 75219.

Q. ARE YOU THE SAME F. JAY CUMMINGS WHO FILED DIRECT TESTIMONY ON APRIL 2, 2009?

A. Yes.

1. PURPOSE AND SUMMARY OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I respond to the Missouri Public Service Commission Staff ("Staff") and Office of Public Counsel ("OPC") class cost of service studies. The Staff study is provided in "Staff Report: Class Cost-of-Service and Rate Design," explained in the Direct Testimony of Thomas M. Imhoff. The OPC study is included with the Direct Testimony of Barbara A. Meisenheimer. I also respond to comments on my class cost of service study made by Midwest Gas Users' Association and Superior Bowen Asphalt, L.L.C. (collectively, a "Large Customer") witness Donald Johnstone in his direct testimony.

Q. PLEASE SUMMARIZE THE RESULTS OF THE CLASS COST OF SERVICE STUDIES PRESENTED BY THE PARTIES.

A. Comparison of allocated dollar amounts among the Missouri Gas Energy ("Company"), Staff, and OPC studies is not straightforward because of the different revenue requirements in the studies. However, the following table shows how each party's study distributes its cost of service, in percentage terms, to the Residential ("RES"), Small General Service ("SGS"), Large General Service ("LGS"), and Large Volume Service ("LVS") classes:

	Total	RES	SGS	LGS	LVS
Company	100.00%	75.58%	17.41%	0.99%	6.03%
Staff	100.00	72.19	17.94	1.18	8.69
OPC	100.00	68.79	23.70	0.90	6.62

In this testimony, I discuss a number of differences between the Staff and/or OPC studies and my class cost of service study and conclude that the Staff and/or OPC approach on various issues is not reasonable. Based on my review of the Staff and OPC studies, no changes are required in the methods used in my class cost of service study (as corrected in Section 2). While Large User witness Donald Johnstone does not provide a class cost of service study, his comments on my study do not lead me to make any changes in my study.

Q. PLEASE EXPLAIN THE ORGANIZATION OF YOUR REBUTTAL TESTIMONY.

A. Section 2 explains two changes in the cost of service study accompanying my direct testimony. These changes do not involve methodological changes and do not

substantially affect the results of the study. For completeness, this section also presents my cost of service study based on the Company's updated test year revenue requirement, as explained in the Updated Test Year Direct Testimony of Michael R. Noack. This study uses the same methods as those employed in the study accompanying my direct testimony (with calculations corrected as explained in Section 2).

Section 3 identifies major methodology differences between the Staff and OPC class cost of service studies and my study, addresses the impact of each difference, and explains in each instance why my methodology should be employed. Section 4 addresses the comments of Large Customer witness Donald Johnstone regarding my class cost of service study.

2. THE COMPANY CLASS COST OF SERVICE STUDY

Q. PLEASE EXPLAIN THE TWO CHANGES IN YOUR FILED CLASS COST OF SERVICE STUDY.

A. Neither of these changes represents a change in method; they involve oversights in referenced calculations in the cost of service study model, as filed with my direct testimony. The first change involves LVS volume references that slightly affect the total revenue and commodity allocation factors. The second change involves calculation references for an allocation factor that combines Accounts 376, 378, and

379, *i.e.*, mains and measuring and regulating station equipment. The corrected class cost of service study is included as Exhibit 8.[1]

The class cost of service study based on the Company's updated test year revenue requirement using the same methods as those in the study accompanying my direct testimony (with calculation references corrected) is provided in Exhibit FJC-9. The cost of service study-indicated required revenue changes for each class based on the updated test year are as follows:

	Total	RES	SGS	LGS	LVS
Revenue Change	$35,864,703	$34,432,180	$1,036,408	$22,060	$374,054

The following table compares the total cost of service, in percentage terms, in my initial, corrected, and updated test year studies:

	Total	RES	SGS	LGS	LVS
Direct	100.00%	75.47%	17.49%	1.00%	6.04%
Corrected	100.00	75.58	17.41	0.99	6.03
Updated	100.00	75.57	17.37	0.99	6.06

Throughout the remainder of my rebuttal testimony, references to my class cost of service study are to the corrected study, unless otherwise indicated.[2]

[1] The class cost of service study accompanying my direct testimony was presented with seven exhibits. In this testimony, this same information is consolidated into one exhibit (Exhibit FJC-8), with pages in the same order as those initially presented as Exhibit FJC-1 through Exhibit FJC-7.

[2] This testimony focuses on methodology differences between my study and the Staff and OPC studies. My corrected study and my updated test year study use the same methodologies. Dollar amounts in specific accounts referenced in this testimony provide an indication of the importance of the issues. These amounts are for the test year ended December 31, 2008. Exhibit FJC-9 contains the corresponding amounts for the updated test year.

3. MAJOR METHODOLOGY DIFFERENCES

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. This section describes the allocation methodology for a number of cost of service components in my study and in the Staff and OPC studies. I explain why the methods employed in my study follow cost causation considerations, while other methods do not.

I first describe the parties' treatment of selected, major plant and other rate base elements in their cost of service studies. For these elements, the impact of alternative allocation methods results from differences in the allocation of the required return on each item, directly-related expenses, and various expenses that are allocated based on plant-related costs. In the remainder of this section, I describe the parties' treatment of selected, significant expense components in their cost of service studies.

I do not address all allocation methodology differences between my study and the Staff and OPC studies. The selected issues do explain a significant portion of the difference in the cost of service study results of the three studies.

3.1 DISTRIBUTION MAINS

Q. WHY IS THE ALLOCATION OF DISTRIBUTION MAINS IMPORTANT?

A. Distribution mains constitute the largest single component of rate base, representing more than $251 million in net plant on which a return is required. The allocation of mains affects not only the distribution of this return to customer classes but also directly affects the allocation of mains depreciation expense (almost $9.0 million) and mains-related operations and maintenance expenses.[3] A number of other cost of service components that are allocated based on plant-related allocation factors are also influenced by the mains allocation.

Q. PLEASE SUMMARIZE HOW DISTRIBUTION MAINS ARE ALLOCATED IN YOUR STUDY.

A. My zero-intercept method divides the mains investment into a customer-related portion and a demand-related portion. The customer-related portion reflects the cost of providing access to gas service (whether or not any gas is used), while the demand-portion reflects the cost of sizing mains to meet the peak demand. The customer-related portion is allocated to classes based on customer counts, and the demand-related portion is allocated based on peak day demand. This method was adopted by the Commission in the most recent Company rate case in which the Commission addressed the mains allocation methodology.[4]

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[3] Directly-affected operations and maintenance accounts are Account 887, Maintenance of Mains (more than $9.6 million) and a portion of Account 874, Mains and Services (more than $3.1 million).

[4] Missouri Public Service Commission, *Report and Order,* Case No. GR-2004-0209, issued September 24, 2004, pages 50-52.

3.1.1 STAFF MAINS ALLOCATION

Q. DOES THE STAFF STUDY USE AN ALLOCATION METHOD THAT SPLITS THE MAIN INVESTMENT INTO CUSTOMER-RELATED AND DEMAND-RELATED COMPONENTS?

A. No. Staff indicates that its main allocation factor is based on a "stand alone/integrated system" factor.[5] The integrated system component does not reflect the investment required to size mains to meet peak day loads when based on the Staff capacity utilization factor, and the stand alone component does not capture the cost of providing customer access to the system. The development of the stand alone component also suffers from both conceptual and practical problems.

Q. DESCRIBE THE STAFF INTEGRATED SYSTEM COMPONENT OF ITS MAINS ALLOCATION.

A. Staff indicates that this component is based on a capacity utilization factor that combines peak demand and utilization of mains throughout the year.[6]

Q. HAS THE COMMISSION PREVIOUSLY CONSIDERED THE APPROPRIATENESS OF YEAR-ROUND UTILIZATION AS A MEASURE OF MAINS DEMAND COSTS?

A. Yes. In its Report and Order in Case No. GR-2004-0209, the Commission rejected the concept of utilization throughout the year as a measure of the demand

[5] Staff Report: Class Cost-of-Service and Rate Design, page 7, lines 21-22.

[6] Staff Report: Class Cost-of-Service and Rate Design, page 8, lines 3-12.

component of mains in assessing OPC's mains allocation method in that case.[7] Year-round usage does not determine how mains are sized, the consideration that drives the demand cost component of the mains investment. Staff work papers supporting its cost of service study show that Staff uses its peak demand factor, not its capacity utilization factor, in the integrated system component of the study's resulting mains allocation factor.

Q. EXPLAIN THE STAFF PEAK DEMAND FACTOR AND WHETHER ITS USE REFLECTS COST CAUSATION.

A. Staff indicates that its peak demand is estimated based on the coldest winter day, defined as the highest daily heating degree days ("HDDs") in the months of December through February in the 1971-2000 period.[8] Staff's peak is based on HDDs that are far less than the Company's design day HDDs. Using design day HDDs to estimate peak demand reflects cost causation because the Company's facility sizing decisions are based on design day conditions.[9] My study appropriately develops peak demand based on design day HDDs; Staff's peak demand allocation factor does not.

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[7] Missouri Public Service Commission, *Report and Order,* Case No. GR-2004-0209, issued September 24, 2004, page 51.

[8] Staff Report: Class Cost-of-Service and Rate Design, page 15, lines 11-14 and Staff Report: Cost of Service," page 72, lines 5-6. While Staff indicates that its selected peak HDDs represent historical maximum HDDs, National Oceanographic and Atmospheric Administration online data show that a number of days in December and January in Kansas City in the 1972-2009 period had daily HDDs that exceeded Staff's peak HDDs (available at http://www.weather.gov/climate/xmacis.php?wfo=eax, accessed on September 14, 2009).

[9] The Company also uses design day HDDs in its gas supply and capacity planning process. Missouri Gas Energy, Demand/Capacity Analysis, November 2007, page B-2.

Q. PLEASE EXPLAIN HOW THE STAND ALONE COMPONENT IS DEVELOPED AND PROBLEMS RELATED TO ITS DEVELOPMENT.

A. Staff's calculation is based on data for a random sample of 100 accounts from each class provided in the Company's Response to Staff Data Request No. 117. First, Staff calculates the average mains length for each customer class.[10] Each class average mains length is priced using current service line costs, not mains costs, for each class. The resulting class "total cost/customer," *i.e.*, class average mains length times service line cost per foot, is multiplied by the number of customers in the class to determine the stand alone "mains cost" for the class. The ratio of the total of the stand alone "mains costs" for all classes relative to the Handy Whitman-adjusted mains investment is the stand alone portion of the mains investment.

Q. DO YOU AGREE WITH STAFF'S STAND ALONE CALCULATION?

A. There are both conceptual and practical problems associated with the stand alone calculation. Conceptually, assigning a specific mains length to each class based on account average mains lengths ignores the fact that the distribution system is an integrated network. A customer does not obtain service through a certain length of main.[11] Rather, a customer receives service through the network of mains installed throughout the distribution system. The access cost is the portion of the mains

[10] Staff uses this data in developing allocation factors for mains, services, meters, and related expenses. Mains lengths are not contained in the random sample data provided to Staff. In response to Company Data Request No. 0278, Staff explained that its mains length is based on "the length of frontage for a parcel of land" associated with each account and that the "primary sources" used to develop these estimates are Google Earth and county assessors' office web sites. The underlying data is not provided to enable verification and assessment. For calculation purposes in this portion of my testimony, Staff's reported lengths are used.

[11] At least conceptually, a single customer exception would involve a customer who is served by a dedicated main that runs from the city gate to the customer's location and who is connected to no other mains.

investment required to reach customers. The remainder of the mains cost relates to sizing of the system meet peak day loads. My mains allocation method is consistent with these considerations; the Staff method is not.

In its calculations, Staff uses current service line costs per foot to price its assigned mains length for each class. Service lines and mains are different facilities. Relative service line costs per foot among customers classes are a function of typical service line sizes installed for each class. A service line size is not the same as a main size, and there is no reason to expect that the relative costs of different size services are the same as the relative costs of different, unspecified mains sizes.[12]

Ignoring this calculation issue, the results are problematic because average mains lengths used in the Staff calculations are influenced significantly by a relatively small number of lengthy, reported mains lengths, especially for the LGS and LVS classes.[13] The use of averages produces distorted results. A median is a preferred measure of central tendency in such instances because half of the values in a data set lie above the median and half lie below the median. Staff's average mains length compared to each class' median mains length is as follows:

[12] Staff uses $7.56 cost per foot for a ½-inch plastic service line for the RES and SGS classes and $12.86 cost per foot for a 1¼-inch service line for the LGS class in its mains cost calculations. These are the costs used in the weighted services factor calculation by both the Company and Staff. By contrast, Handy Whitman-adjusted mains cost data that Staff relies on for its stand alone percentage calculation indicate that the cost per foot for a ½-inch plastic main is $11.35, while the cost per foot of a 1¼-inch plastic main is $12.22. The relative RES-to-LGS service line cost is 1.68, but the relative RES-to-LGS mains cost (using mains sizes that are the same as the service line for calculation purposes) is 1.08.

[13] For example, the sample includes three LVS accounts with reported mains lengths of 47,938 feet, 11,258 feet, and 9,956 feet. Excluding these three accounts would reduce the Staff LVS average by about 38%.

	Average Length	Median Length
RES	83.4	78.5
SGS	139.3	86.0
LGS	821.3	588.5
LVS	1,749.4	825.7

Q. IF AN ANALYST WERE TO DEVELOP A STAND ALONE CALCULATION BASED ON THE RANDOM SAMPLE OF CUSTOMER ACCOUNTS, HOW SHOULD STAFF'S CALCULATION BE REVISED?

A. Although the approach remains conceptually inappropriate, the following calculations avoid the problems associated with the Staff calculations. Based on Staff-reported mains lengths, the median length for each class is first calculated. To avoid blending service line and mains in the cost calculation, the median of mains sizes connecting the customer accounts is then calculated for each class.[14] The Handy Whitman-adjusted per foot mains cost for the each class' connected mains size is multiplied by the corresponding class median mains length to determine the mains cost per customer for each class. The mains cost per customer is multiplied by the number of customers in the class to determine the total stand alone mains cost for the class. The ratio of the total of the stand alone mains costs for all classes relative to the Handy Whitman-adjusted mains investment is the stand alone portion of the mains investment.

[14] The sample account data in the Company's Response to Staff Data Request No. 117 includes the connecting main size for each account.

The recalculated stand alone portion of the mains investment is 42.47%, compared to Staff's 28.18%. The integrated system portion becomes 57.53%, rather than 71.82%.[15]

Q. HOW DOES STAFF'S MAIN ALLOCATION COMPARE TO THE ALLOCATION IN YOUR STUDY?

A. Exhibit 10, lines 5 and 6 show the mains allocation factors using the Company method and the Staff method. Compared to my method, the Staff method substantially shifts costs away from the RES class to the other classes.[16] Line 7 provides the results of recalculating the stand alone component of the Staff mains allocation factor to address the data and calculation problems explained in my previous response. This adjusted factor is similar to my mains allocation factor, although cost causation is better served using my mains allocation method.

[15] These calculations are based on Staff customer counts and peak demand for each class. Compared to the filed Staff calculation, the recalculated integrated system portion of the investment (57.53%) is substantially closer to the demand portion of the mains investment based on my method (61.59%). And, the recalculated stand alone percentage (42.47%) is closer to my customer portion of the mains investment (38.41%) compared to the filed Staff calculation. One would expect that the recalculated stand alone percentage would be higher than my customer-related percentage because the stand alone portion (based on two-inch and four-inch mains) does not capture solely the portion of the mains cost that is related to customer access to the system.

[16] If Staff used its capacity utilization factor rather than its peak demand factor for the integrated system portion of its mains allocation factor, the shifts would have been even more pronounced. Staff work papers show that the mains allocation factor would be as follows:

RES	SGS	LGS	LVS
60.35%	20.25%	1.61%	17.79%

3.1.2 OPC MAINS ALLOCATION

Q. DOES THE OPC STUDY USE AN ALLOCATION METHOD THAT SPLITS THE MAIN INVESTMENT INTO CUSTOMER-RELATED AND DEMAND-RELATED COMPONENTS?

A. Yes, in effect. Recognizing that a portion of the mains investment "is related to reaching customers throughout the service area," the OPC study uses my zero-inch method results to determine the customer portion of mains investment.[17] This portion of the mains investment is allocated to classes based on customer counts.[18]

OPC witness Barbara Meisenheimer indicates that the remainder of the mains investment is split between a commodity component and a demand component.[19] The OPC approach is often labeled an average-and-excess method applied to the demand-related portion of the mains investment. Regardless of label, the OPC method does not recognize the fact that mains are sized to meet system peak day load requirements. In approving use of the zero-intercept method in Case No. GR-2004-0209, the Commission emphasized that the gas distribution must be built to accommodate peak demand.[20] Incorporating usage throughout the year into the demand factor ignores the cost causation consideration.

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[17] Direct Testimony of Barbara A. Meisenheimer, page 25, lines 1-2.

[18] In its response to Company Data Request (Set 3) No. 3, OPC states that the reference to "weighted customers" in the Direct Testimony of Barbara A. Meisenheimer, page 25, line 11 will be corrected to reflect the study's use of unweighted customers for this allocation.

[19] Direct Testimony of Barbara A. Meisenheimer, page 25, lines 15-25.

[20] Missouri Public Service Commission, *Report and Order,* Case No. GR-2004-0209, issued September 24, 2004, page 51.

If OPC were to replace its average and excess approach with a peak demand factor for this portion of the mains investment, OPC demand data should not be used. OPC uses Staff's estimated January peak usage to measure demand. The HDDs used in this estimate are far less than the Company's design day HDDs. Using design day HDDs to estimate peak demand reflects cost causation because the Company's facility sizing decisions are based on design day conditions. My study appropriately develops peak demand based on these cost-related considerations, the OPC demand allocation method does not.

Q. HOW DOES OPC'S MAINS ALLOCATIONS COMPARE TO THE ALLOCATION IN YOUR STUDY?

A. While Exhibit 10, lines 5 and 8 show that the two allocation factors. While the alternative allocation methods produce similar allocation factors in this instance, small differences in the allocation factor results in sizable allocated dollar differences given the significant cost of service associated with the mains investment. Furthermore, cost causation considerations requires that my method be used.

3.2 SERVICES

Q. WHY IS THE ALLOCATION OF DISTRIBUTION SERVICES IMPORTANT?

A. Services (Account 380) constitute the second largest component of rate base, representing more than $171 million in net plant on which a return is required. The

allocation of services affects not only the distribution of this return to classes but also the allocation of services depreciation expense (more than $10.6 million) and services-related operations and maintenance expenses.[21] A number of other cost of service components allocated based on plant-related factors are also affected by the services allocation.

Q. HOW DOES STAFF ALLOCATE SERVICES?

A. Staff develops a weighted services factor based on the random sample account data used in its mains allocation factor calculation. The average service line length for a class is priced using the current cost data on which my services factor is based. As is the case with Staff's mains data discussed above, these averages are influenced by a relatively small number of lengthy service lines, especially for the LGS and LVS.[22] The use of median lengths avoids this problem and provides an appropriate measure of central tendency for each class. Staff's average service line lengths are compared to median lengths in the following table:[23]

	Average Length	Median Length
RES	59.1	50.5
SGS	57.8	57.5
LGS	156.1	86.5
LVS	194.5	77.0

[21] Directly-affected operations and maintenance accounts are Account 892, Maintenance of Services (almost $1.0 million) and a portion of Account 874, Mains and Services (more than $3.1 million).

[22] For example, three LVS accounts are served by service lines of 2,183 feet, 2,077 feet, and 1,336 feet. These three accounts have a significant effect on the Staff average service line length.

[23] Each of these length measures ignores those accounts for which a service line length is not included in the reported data.

Q. HOW DO YOU ALLOCATE SERVICES?

A. I use a weighted services factor based on the current cost of typical services installed for each customer class and relative customer counts. The weights reflect facility sizing differences and the resulting cost differences among the classes.

Q. HOW DOES THE OPC STUDY ALLOCATE SERVICES?

A. The OPC study uses my services weights. These weights are multiplied by OPC customer counts to develop its services allocation factor.

Q. HOW DO THE SERVICES ALLOCATION FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 14, 15, and 17 provide the allocation factors used in the Company, Staff, and OPC studies, while line 16 shows a Staff-based allocation factor using median rather than average service lengths from the random sample account data used by Staff. OPC and my factors differ somewhat due to our different customer counts. Appropriately adjusting Staff's method based on median lengths produces LGS and LVS factors that are substantially closer to those in OPC and my studies. While the alternative allocation factors do not appear to vary dramatically, the cost of service cost associated with services (other than plant-related allocated expenses), *i.e.*, return, depreciation, related operations and maintenance expenses, is on the order of $30 million, and seemingly small differences in the allocation factors produce sizable differences in the dollar amounts allocated to the various classes.

3.3 METERS AND METER INSTALLATIONS

Q. PLEASE EXPLAIN THE IMPORTANCE OF THESE TWO COST OF SERVICE COMPONENTS?

A. The Meters (Account 381) net investment on which a return must be earned is almost $28.8 million, and the associated depreciation expense is more than $0.9 million. The Meter Installation (Account 382) net investment on which a return must be earned exceeds $57.3 million, and the associated depreciation expense is almost $2.2 million. A number of other cost of service components that are allocated based on plant-related factors are also affected by the meters and meter installation allocations.

Q. HOW DOES STAFF ALLOCATE METERS AND METER INSTALLATIONS?

A. While these two items are recorded in separate plant accounts, Staff develops a single "weighted meters" factor that combines meter costs and meter installation costs and applies this factor to both accounts. This factor is based on the sum of the average meter replacement cost for each class from the random sample account data and the current typical meter installation cost for each class used for meter installations in my study.

The use of averages is problematic because the average replacement cost is influenced by a relatively small number of outliers.[24] More importantly, the meter replacement cost data in the sample account data does not reflect current costs, but rather the cost at the time when each meter was replaced.[25] The resulting class averages of costs incurred at different points in time that are the basis for the Staff weighted factor are not meaningful.

Q. HOW DOES OPC ALLOCATE METERS AND METER INSTALLATIONS?

A. OPC develops separate factors for meters and meter installations based my weights for each plant category and OPC customer counts.

Q. HOW DO YOU ALLOCATE THESE TWO COST OF SERVICE COMPONENTS AND WHY IS YOUR METHOD APPROPRIATE?

A. I develop separate weighted meters and weighted meter installation factors based on the relative current cost of meters and on the relative current cost of meter installations, respectively, and customer counts. The separate weighted factors are then applied to the corresponding plant and related accounts.

[24] As is the case with both mains and services, Staff's use of an average meter replacement cost for each class from the random sample account data shifts costs to the LGS and LVS classes. The following table provides Staff's average and median meter replacement costs:

	Average	Median
RES	$ 42.31	$ 42.94
SGS	108.68	42.70
LGS	1,826.79	1,502.28
LVS	4,466.47	2,783.77

[25] Various RES meters were replaced between 1958 and 2009, various SGS meters between 1951 and 2008, various LGS meters between 1946 and 2008, and various LVS meters between 1946 and 2008.

Using separate factors is appropriate because these plant items are booked separately and the current costs for meters compared to meter installations differ across classes. Further, the calculation of the Staff single factor is flawed.

Q. HOW DO THE METERS ALLOCATION FACTORS AND METER INSTALLATION ALLOCATION FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTORS?

A. Exhibit FJC-10, lines 22-24 provide the meters allocation factors used in the Company, Staff, and OPC studies. While OPC and my meter allocations are quite similar (with differences due to somewhat different customer counts), the single Staff factor allocates a greater portion of meters to the RES and LVS classes compared to OPC and my method. The meter installation allocation factors used in the three studies is shown on lines 29-31 of Exhibit FJC-10.

3.4 AUTOMATED METER READING EQUIPMENT

Q. WHY IS THE ALLOCATION OF AUTOMATED METER READING EQUIPMENT ("AMR") IMPORTANT?

A. AMR (Account 397.1) net plant on which a return is required totals more than $21.0, and the annual AMR depreciation expense exceeds $1.9 million.

Q. HOW DOES THE STAFF STUDY ALLOCATE AMR EQUIPMENT?

A. Staff separates AMR from other general plant and allocates it based on relative non-LVS customer counts.

Q. HOW DOES THE OPC STUDY ALLOCATE AMR EQUIPMENT?

A. OPC's study does not separately allocate the AMR investment or the associated depreciation expense. Rather, the investment is included in total general plant that is allocated based on the allocation of total non-general plant.

Q. HOW DOES YOUR STUDY ALLOCATE AMR AND WHY IS THIS METHOD APPROPRIATE?

A. As in the Staff study, my study treats AMR equipment as a customer-related cost (excluding LVS customers). This approach is consistent with cost causation because the AMR investment level varies directly with the number of non-LVS customer meters on which the AMR equipment is installed. The OPC allocation results in a portion of the investment being treated as a demand-related cost and a portion as commodity-related when, in fact, it is driven by the number of non-LVS customers served, regardless of the amount of gas these customers use or the demand they place on the system.

OPC's method also attributes a portion of AMR to the LVS class when, in fact, AMR is not installed on LVS customer meters. LVS customer meters are equipped with Electronic Gas Measuring ("EGM"), an account (Account 385) that the OPC study directly assigns to the LVS class.

Q. HOW DO THE AMR ALLOCATION FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 36-38 provide detail on the results of the parties' allocation methods. The Staff factor and my factor differ somewhat due to our different customer counts. By contrast, the OPC unreasonably shifts AMR costs away from the RES class to other classes, especially the LVS class.

3.5 MISCELLANEOUS INTANGIBLE PLANT

Q. PLEASE EXPLAIN THE MISCELLANEOUS INTANGIBLE PLANT ACCOUNT AND WHY THE SELECTED ALLOCATION FACTOR IS IMPORTANT.

A. Miscellaneous Intangible Plant (Account 303) consists of software investments. Itemization of the software that comprise the $30 million gross plant total is provided in work papers supporting my study. The allocation method is important because the net plant in this account on which a return must be earned totals more than $7.8 million, and the annual amortization expense is more than $1.8 million.

Q. HOW DOES THE STAFF STUDY ALLOCATE MISCELLANEOUS INTANGIBLE PLANT AND THE ASSOCIATED AMORTIZATION EXPENSE?

A. Staff allocates this plant account based on its cost of service, or total revenue requirement, allocated to customer classes. Contrary to its approach in allocating depreciation expense in the same manner as the allocation of corresponding plant

accounts for other plant items, Staff allocates the amortization expense for miscellaneous general plant based on total distribution plant.

Q. HOW DOES THE OPC STUDY ALLOCATE MISCELLANEOUS INTANGIBLE PLANT AND THE ASSOCIATED AMORTIZATIONE EXPENSE?

A. The OPC study allocates this plant account based on its cost of service, or total revenue requirement, allocated to customer classes. The OPC study allocates the corresponding amortization expense based on non-general plant.

Q. HOW DOES YOUR STUDY ALLOCATE THIS SOFTWARE INVESTMENT?

A. Based on discussions with Company personnel, I identified software that is totally customer-related. This software relates to the Company's customer service system and mainframe, AMR, workforce automation system, and the call center. These software investments comprise approximately 78% of the gross plant balance. After directly assigning these costs as customer-related costs, the remaining 22% of the software investment is allocated based on the allocation of non-intangible plant. Amortization expense follows the classification of the corresponding software classifications.[26]

[26] As a resulting of differing amortization rates among the various software items, the resulting plant and expense allocation factors differ somewhat.

Cost of service analysts typically directly assign those costs that are readily assignable before considering using proxy allocation factors.[27] Direct assignment in lieu of proxy allocations provides an accurate portrayal of cost causation. My direct assignment of 78% of the software investment is preferable to the application of any allocation factor, including the Staff and the OPC factors, to 100% of the software cost.

Q. HOW DO THE MISCELLANEOUS INTANGIBLE PLANT AND AMORTIZATION EXPENSE ALLOCATION FACTORS USED IN THE STAFF AND OPC STUDIES COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 42-44 provide parties' plant allocation factors, and lines 46-48 show the amortization expense factors. The Staff and OPC factors shift costs away from the RES class and toward other all other classes compared to my factor that is based to a substantial degree on direct cost assignment.

3.6 MEASURING AND REGULATING STATION EQUIPMENT

Q. WHY IS THE ALLOCATION OF MEASURING AND REGULATING IMPORTANT?

A. Measuring and Regulating Station (Accounts 378 and 379) net plant on which a return is required totals almost $10.5 million. The allocation of this account affects the distribution of this return to customer classes, more than $0.4 million in

[27] See, for example, National Association of Regulatory Utility Commissioners, *Gas Distribution Rate Design Manual*, June 1989, page 20, and American Gas Association, *Gas Rate Fundamentals*, 4th edition, 1987, page 185.

measuring and regulating station annual depreciation expense, and about $1.7 million in directly-related operations and maintenance expenses.[28] A number of other cost of service components that are allocated based on plant-related factors are also affected by the measuring and regulating station allocation.

Q. HOW DOES THE STAFF STUDY ALLOCATE MEASURING AND REGULATING STATION EQUIPMENT?

A. The Staff study allocates measuring and regulating station equipment and associated operation and maintenance and depreciation expenses based on annual volumes.

Q. HOW DOES THE OPC STUDY ALLOCATE MEASURING AND REGULATING STATION EQUIPMENT?

A. The OPC study allocates measuring and regulating station equipment and associated operation and maintenance and depreciation expenses based on annual volumes.

[28] Directly-related accounts are operations expense Account 875 (General) and Account 877 (City Gate) totaling about $0.8 million and maintenance expense Account 889 (General) and Account 891 (City Gate) totaling about $0.9 million. These dollar amounts in Accounts 875 and 889 are test year amounts after removal odorization expense. Odorization expense is separately allocated to classes based on volumes.

Q. HOW DOES YOUR STUDY ALLOCATE MEASURING AND REGULATING STATION EQUIPMENT AND WHY IS THIS METHOD APPROPRIATE?

A. My study allocates this equipment and the associated expenses (other than odorization expense) based on the peak demand. This approach appropriately recognizes that the sizing of and resulting investment in measuring and regulating station is driven by loads served on the peak day. A volume-based allocation factor does not capture this facility sizing cost consideration.

Prior to applying the peak demand allocation factor to these accounts, my study removes the odorization expense included in measuring and regulating station accounts. Odorization expense is classified as a commodity-related expense and allocated based on volumes.

Q. HOW DO THE MEASURING AND REGULATING STATION EQUIPMENT ALLOCATION FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 55-57 provide detail on the results of the parties' allocation methods. The Staff and OPC factors shift costs from the RES, SGS, and LGS classes to the LVS class compared to my factor.

3.7 CUSTOMER DEPOSITS AND INTEREST ON CUSTOMER DEPOSITS

Q. PLEASE EXPLAIN HOW CUSTOMER DEPOSITS AND INTEREST ON CUSTOMER DEPOSITS ARE INCLUDED IN THE COST OF SERVICE AND THE SIGNIFICANCE OF THIS COST OF SERVICE COMPONENT.

A. Customer deposits are deducted from rate base (reducing the required dollar return in the cost of service), while interest on customer deposits is included in the cost of service expenses. Customer deposits total more than $4.5 million, while interest on customer deposits is more than $0.1 million.

Q. HOW DOES THE STAFF STUDY ALLOCATE CUSTOMER DEPOSITS AND INTEREST ON CUSTOMER DEPOSITS?

A. The Staff study allocates customer deposits to the RES and SGS classes based on the relative number of bills in these two classes. No customer deposits are allocated to the LGS and LVS classes. By contrast, Staff allocates interest on customer deposits to all classes based on its total cost of service.

Q. HOW DOES THE OPC STUDY ALLOCATE CUSTOMER DEPOSITS AND INTEREST ON CUSTOMER DEPOSITS?

A. The OPC study allocates customer deposits to all customer classes based on bill counts. I could not locate an interest on customer deposits line item in the OPC study to determine how this expense is allocated or if it is included in the OPC cost of service.

Q. HOW DOES YOUR STUDY ALLOCATE CUSTOMER DEPOSITS AND INTEREST ON CUSTOMER DEPOSITS?

A. My study directly assigns customer deposits. RES customer deposits totaling $783,188 are shown in the Company's Schedule B-2, accompany the Direct Testimony of Michael R. Noack. The remaining $3,776,323 of customer deposits shown in Schedule B-2 represents deposits made by non-residential customers. Based on a download of non-residential customer deposits that showed deposit amounts by rate code and account, I assigned these non-residential deposits to the SGS, LGS, and LVS classes.

RES interest on customer deposits totaling $33,285 is shown in the Company's Schedule B-2, accompany the Direct Testimony of Michael R. Noack. The $113,290 remaining balance of interest on customer deposits is assigned to the non-residential classes based on the assignment of customer deposits to these classes.

My direct assignment of customer deposits and interest on customer deposits rather than using proxy allocation factors, such as those used in the Staff and OPC studies, provides an accurate portrayal of cost causation.

Q. HOW DO THE CUSTOMER DEPOSIT AND DEPOSITS INTEREST FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 61-63 provides the customer deposit allocation factors used in the three studies. Note that only a 17% of test year customer deposits are actually

paid by RES customers, and yet the Staff allocates 93% and OPC allocates 87% of deposits to the RES class in their respective studies. Exhibit FJC-10, lines 65-67 provides the interest on customer deposit allocation factors. Note that 22% of test year customer deposit interests is attributable to the RES class, while Staff allocates 72% of this expense to the RES class.[29] The effect of customer deposit (as a return reduction due to the rate base reduction) allocation factor differences will be greater than the effect of interest expense factor differences given the dollar size of these two items.

3.8 UNCOLLECTIBLES EXPENSE

Q. PLEASE EXLAIN THE SIGNIFICANCE OF THE ALLOCATION OF UNCOLLECTIBLE EXPENSES.

A. The selected allocation method affects the distribution to customer classes of more than $9.4 million in uncollectibles expense in included in the Company's revenue requirement.

Q. HOW DOES THE STAFF STUDY ALLOCATE UNCOLLECTIBLES EXPENSE?

A. The Staff study allocates this account based on its cost of service, or total revenue requirement, allocated to customer classes.

[29] The relative assignment of customer deposits is not the same as the relative assignment of deposit interest to the various classes because the interest rate on customer deposits is not the same for all classes, *i.e.*, 4.25% for the RES class and 3.00% for the non-residential classes as shown Schedule H-11.

Q. HOW DOES THE OPC STUDY ALLOCATE UNCOLLECTIBLES EXPENSE?

A. Like the Staff study, the OPC study allocates the expense based on the total cost of service.

Q. HOW DOES YOUR STUDY ALLOCATE UNCOLLECTIBLES EXPENSE AND WHY IS THIS METHOD APPROPRIATE?

A. Uncollectibles are directly assigned in my study. Details on the net write-offs for each class and their resulting direct assignment is provided in the work papers supporting my study.

Direct assignment of a cost rather than using proxy allocation factors provides an accurate portrayal of cost causation. Proxy allocation factors are appropriate when direct assignment is not feasible, as is the case when data is not readily available or when dealing with joint or common cost elements.

Q. HOW DO THE UNCOLLECTIBLES EXPENSE FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 69-71 provide detail on the results of the parties' allocation methods. The Staff and OPC factors shift costs away from the RES class and to the other classes compared to my direct assignment factor.

3.9 DEMONSTRATING AND SELLING EXPENSE

Q. PLEASE EXPLAIN THE SIGNIFCANCE OF THIS ISSUE.

A. Demonstrating and Selling (Account 912) expenses totals approximately $1.0 million.

Q. HOW DOES THE STAFF STUDY ALLOCATE THIS EXPENSE?

A. The Staff study allocates this account based on its cost of service.

Q. HOW DOES THE OPC STUDY ALLOCATE DEMONSTRATING AND SELLING EXPENSE?

A. The OPC study allocates this expense base on the number of bills.

Q. HOW DOES YOUR STUDY ALLOCATE DEMONSTRATING AND SELLING EXPENSE AND WHY IS THIS METHOD APPROPRIATE?

A. As explained in my direct testimony, this expense is assigned to customer classes based on the Company's estimate of the time the sales group devotes to each customer class.[30] My direct assignment provides a better reflection of the cost caused by each class than would application of a general allocation factor, such as one based on the overall cost of service or one based on bill counts.

[30] Direct Testimony of F. Jay Cummings, page 28, lines 5-7.

Q. HOW DO THE DEMONSTRATING AND SELLING EXPENSE FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 73-75 provide detail on the results of the parties' allocation methods. In contrast to the direct assignment of uncollectible expense, my direct assignment of this expense assigns a substantially smaller portion of the expense to the RES class and greater portion to other classes, especially the LVS class, compared to the proxy allocation factors used in the Staff and OPC studies.

3.10 METER READING EXPENSE

Q. WHAT IS THE LEVEL OF METER READING EXPENSE INCLUDED IN THE COMPANY'S REVENUE REQUIREMENT?

A. The test year meter reading expense included in the revenue requirement is almost $1.0 million.

Q. HOW DOES THE STAFF STUDY ALLOCATE METER READING EXPENSE?

A. Staff indicates that it allocates the meter reading expense based on weighted customer numbers.[31] Staff work papers show that this weighted factor is its weighted services factor, based on average service line lengths as discussed in Section 3.1.

[31] Staff Report: Class Cost-of-Service and Rate Design, page 7, lines 9-10.

Q. HOW DOES THE OPC STUDY ALLOCATE METER READING EXPENSES?

A. The OPC study lists "Weighted Meter Reading (Bills-LV)" as the allocation factor for this expense. This factor is actually based on customer counts, excluding the LVS class.

Q. HOW DOES YOUR STUDY ALLOCATE METER READING EXPENSES AND WHY IS THIS METHOD APPROPRIATE?

A. My study allocates the expense based on relative customer counts. With AMR installed on non-LVS meters and EGM equipment installed on LVS meters, there is no reason to expect that cost causation would require consideration be given to the relative sizes and resulting costs of installed meters or the relative sizes and resulting costs of services, which is the basis for the Staff factor. The use of unweighted customer counts best reflects cost causation considerations given the technology in place to meter customer volumes.[32]

Q. HOW DO THE METER READING EXPENSE FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 77-79 provide detail on the results of the parties' allocation methods. The Staff factor shifts cost away from the RES and SGS classes to the LGS and LVS classes compared to my factor, a result significantly influenced by

[32] To the extent that meter reading expenses are expected to be relatively higher with drive-by AMR compared to electronically-transmitted EGM meter reads, one may lean toward the use of the OPC factor. Note, however, that my meter reading expense factor allocates less than one-thousand dollars to the LVS class.

the use of average service line lengths rather than median lengths. The OPC factor shifts costs away from the LVS class to the RES class compared to my factor.

3.11 CUSTOMER ACCOUNTS AND COLLECTION EXPENSES

Q. PLEASE EXPLAIN THE SIGNIFCANCE OF THIS ISSUE.

A. Customer Accounts and Collections (Account 903) expense totals more than $13.1 million.

Q. HOW DOES THE STAFF STUDY ALLOCATE THIS EXPENSE?

A. The Staff study indicates that this account based on a weighted customer-billing factor. Review of Staff work papers indicated the factor used in this allocation is its weighted services factor.

Q. HOW DOES THE OPC STUDY ALLOCATE CUSTOMER ACCOUNTS AND COLLECTION EXPENSE?

A. The OPC study allocates the expense based on its weighted meters factor.

Q. HOW DO YOU ALLOCATE CUSTOMER ACCOUNTS AND COLLECTION EXPENSE?

A. My study bases the allocation on three drivers of the expense – the relative number of service orders by class, the relative number of pay agreements by class, and the relative number of customers by class. I would not expect this expense to be causally related to the relative sizing and associated cost of services among classes,

as the Staff factor presumes, or the relative sizing and associated cost of meters among classes, as the OPC factor presumes. My approach more appropriately recognizes cost causation as compared to the Staff and OPC allocations.

Q. HOW DO THE CUSTOMER ACCOUNTS AND COLLECTION FACTORS USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit FJC-10, lines 81-83 provide detail on the results of the parties' allocation methods. Compared to my factor, the Staff factor attributes a somewhat smaller portion of the expense to the RES and SGS classes and a larger portion to the LGS and LVS classes. Compared to Staff and my factors, the OPC factor significantly shifts the expense away from the RES class toward the other classes.

3.12 SAFETY LINE REPLACEMENT PROGRAM AMORTIZATION

Q. PLEASE EXPLAIN THE IMPORTANCE OF THIS ISSUE.

A. The Company's test year cost of service includes as an expense almost $1.1 million in safety line replacement program ("SLRP") amortization expense.

Q. HOW DOES THE STAFF STUDY ALLOCATE THE SLRP AMORTIZATION EXPENSE?

A. The Staff study does separately allocate the SLRP amortization expense. Rather, total amortization expense, including the SLRP amortization, is allocated based on total distribution plant.

Q. HOW DOES THE OPC STUDY ALLOCATE THE SLRP AMORTIZATION EXPENSE?

A. The OPC study does separately allocate the SLRP amortization expense. Rather, total amortization expense is allocated based on non-general plant.[33]

Q. HOW DOES YOUR STUDY ALLOCATE THE SLRP AMORTIZATION EXPENSE?

A. I develop a SLRP amortization factor based on the composition of the SLRP deferral balances that are being amortized pursuant to Case No. GR-98-140 and Case No. GR-2001-292. The total deferral balance is comprised of 38.45% in mains and 61.55% in services. The portion attributable to mains is allocated based on my mains allocation factor, and the portion attributable to services is allocated based on my services allocation factor.

Q. HOW DO THE SLRP AMORIZATION FACTOR USED BY STAFF AND THE OPC COMPARE TO YOUR FACTOR?

A. Exhibit 10, lines 86-88 show the factors from my study and the Staff and OPC study. My factor allocates a smaller portion of the expense to the non-residential classes as compared to the Staff and OPC factors. My approach is more closely aligned with cost causation considerations because it is based on the relative amounts of the mains and service costs that are being amortized, while the Staff and

[33] This allocation factor is shown in the OPC study. However, according to the Direct Testimony of Ted Robertson (page 33, lines 13-15), OPC eliminates the SLRP amortization expense from its recommended revenue requirement, so no dollar amounts are allocated with this factor in the OPC study.

OPC broad plant-related factors are influenced by any number of other plant-related costs that are unrelated to the SLRP deferral balance and its amortization.

4. LARGE CUSTOMER WITNESS DONALD JOHNSTONE

Q. DOES LARGE CUSTOMER WITNESS DONALD JOHNSTONE PROVIDE A CLASS COST OF SERVICE STUDY?

A. No. Large Customer witness Donald Johnstone indicates that he agrees with much of my study, but asserts that "there are aspects which lead to a potential overstatement of the costs allocated to the large volume transportation customers."[34]

Q. WHAT SPECIFIC ASPECTS OF YOUR STUDY DOES LARGE CUSTOMER WITNESS DONALD JOHNSTONE MENTION?

A. He mentions electronic metering, gas inventory, cash working capital, and distribution mains.[35] Review of each issue shows that no modifications in my approach is necessary for any of them, and my class cost of service study results are unaffected by Mr. Johnstone's testimony.

[34] Prepared Rate Design Testimony of Donald Johnstone, page 4, lines 3-4.

[35] Prepared Rate Design Testimony of Donald Johnstone, page 4, lines 4-12.

Q, WHAT OBJECTION IS RAISED REGARDING YOUR TREATMENT OF ELECTRONIC METERING.

A. Mr. Johnstone objects to my assignment of EGM (Account 385) to the LVS class because "transportation customers are required to pay for the metering upfront."[36] Mr. Johnstone's comment is incomplete, and my approach is not flawed. The Account 385 net plant balance of $247,943 on the Company's books included in the Company's revenue requirement and in my study reflects the plant net of payments received from LVS customers under the Company's tariff. Clearly, these costs are caused by LVS customers and should be assigned to them.

Q, WHAT IS LARGE CUSTOMER WITNESS DONALD JOHNSTONE'S CRITICISM OF YOUR TREATMENT OF GAS INVENTORY AND CASH WORKING CAPITAL?

A. Mr. Johnstone's entire criticism of my treatment of gas inventory and cash working capital is that the allocations "appear to be excessive."[37] Mr. Johnstone does not provide any analysis of my approach, does not offer any support for his conclusion, and does not propose an alternative allocation methodology for either of these items. Mr. Johnstone's statement is merely an unsupported assertion.

[36] Prepared Rate Design Testimony of Donald Johnstone, page 4, lines 5-6.

[37] Prepared Rate Design Testimony of Donald Johnstone, page 4, line 8.

Q. DOES LARGE CUSTOMER WITNESS DONALD JOHNSTONE AGREE WITH YOUR APPROACH TO THE ALLOCATION OF DISTRIBUTION MAINS?

A. Mr. Johnstone appears to object to my mains allocation factor. His entire discussion of this issue is as follows:

> Finally, there are typically substantial costs incurred for distribution mains that are not and cannot be used to provide service to the larger customers. Unfortunately, the company's study does not make the separation of costs necessary to shield the large customers from such costs that are not incurred.[38]

I disagree. As explained in detail in my direct testimony, my mains allocation factor is based on a zero-intercept method.[39] The customer-related portion of the mains investment is the cost associated with zero-inch main. This zero-inch cost relates to access to gas service required by all customers, including the LVS class. The demand-related portion of the mains investment relates to the sizing of mains and is allocated based on peak day demand, an approach that Mr. Johnstone appears to generally accept in his comments on my study.[40] Mr. Johnstone's apparent suggestion that my zero-intercept study and application of its results should somehow be adjusted to "shield" large customers is misplaced. Mr. Johnstone does not explain how my study leads to these results, nor does he provide an alternative analysis for the parties' assessment.

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[38] Prepared Rate Design Testimony of Donald Johnstone, page 4, lines 8-12.

[39] Direct Testimony of F. Jay Cummings, page 10, line 12 – page 16, line 2.

[40] Prepared Rate Design Testimony of Donald Johnstone, page 3, lines 14-20.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.