Exhibit No.:
Issues: Class Cost-of-Service
Rate Design
Witness: Michael S. Scheperle
Sponsoring Party: MO PSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: ER-2010-0036
Date Testimony Prepared: February 11, 2010

# MISSOURI PUBLIC SERVICE COMMISSION

## UTILITY OPERATIONS DIVISION

# REBUTTAL TESTIMONY

## OF

## MICHAEL S. SCHEPERLE

## UNION ELECTRIC COMPANY
## d/b/a AmerenUE

## CASE NO. ER-2010-0036

**Jefferson City, Missouri**
**February 2010**

**REBUTTAL TESTIMONY**

**OF**

**MICHAEL S. SCHEPERLE**

**UNION ELECTRIC COMPANY**
**d/b/a AmerenUE**

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# BEFORE THE PUBLIC SERVICE COMMISSION

# OF THE STATE OF MISSOURI

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| In the Matter of Union Electric Company d/b/a AmerenUE's Tariffs to Increase its Annual Revenues for Electric Service. | ) ) ) | Case No. ER-2010-0036 |

## AFFIDAVIT OF MICHAEL S. SCHEPERLE

**STATE OF MISSOURI** )
) **ss**
**COUNTY OF COLE** )

Michael S. Scheperle, of lawful age, on his oath states: that he has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 12 pages of Rebuttal Testimony to be presented in the above case, that the answers in the following Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

Michael S. Scheperle
Michael S. Scheperle

Subscribed and sworn to before me this 11th day of February, 2010.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #06942086

Susan L. Sundermeyer
Notary Public

**REBUTTAL TESTIMONY**

**OF**

**MICHAEL S. SCHEPERLE**

**UNION ELECTRIC COMPANY**
**d/b/a AmerenUE**

**CASE NO. ER-2010-0036**

Q. Please state your name and business address.

A. My name is Michael S. Scheperle and my business address is Missouri Public Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

Q. Are you the same Michael S. Scheperle who filed on January 6, 2010, direct testimony in question and answer format and as part of the Missouri Public Service Commission Staff's (Staff's) Class Cost-of-Service (CCOS) and Rate Design Report?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. I explain why the parameters, in particular production capacity allocators, that other parties relied on in their CCOS studies are inappropriate and, therefore, lead to CCOS results the Commission should not rely on. As part of that explanation I compare the results of the CCOS studies parties presented in direct testimony in this case. I also address a Charter Communications, Inc. (Charter) Small General Service (SGS) unmetered concern and respond to the Missouri Industrial Energy Consumers' (MIEC) rate design recommendations concerning the Large Transmission Service (LTS) class.

**Class Cost-of-Service Study Production Capacity Allocators**

Q. Who has presented CCOS study results in this case?

A. Staff, Union Electric Company d/b/a AmerenUE (AmerenUE), the Office of Public Counsel (OPC), and MIEC presented CCOS study results. Staff and OPC each presented the results of two CCOS studies. On February 3, 2010, MIEC filed revised CCOS study results along with revised direct testimony by Maurice Brubaker.

Q. Did they all use the same parameters in their CCOS studies?

A. No.

Q. Does Staff agree with the parameters other parties used?

A. No. Staff disagrees with a number of parameters that other parties used; in particular, Staff disagrees with the production-capacity allocator which is the parameter that has the greatest impact on the CCOS study results. Therefore, Staff is limiting this rebuttal testimony to the other parties' choice of production-capacity costs allocator.

Q. What are the different production-capacity allocators the parties used?

A. There are basically two types of production-capacity cost allocators – those based on Average and Excess Methods, and those based on Average and Peak Methods. Each method is based on different assumptions about the reason an electric utility adds capacity. Average and Peak Methods, used by Staff and OPC, are based on an assumption that an electric utility adds capacity to meet its entire load. In contrast, Average and Excess Methods, used by AmerenUE and MIEC, are based on an assumption that an electric utility adds capacity to meet its peak load demands.

Q. How do the Average and Excess methods differ from Average and Peak methods?

A. There are two pieces to the production-capacity allocator—an average piece and a demand piece. The average piece is simply the total kWh usage divided by the total

number of hours in the year for each class, while the demand piece is each class's contribution to the system peak load (or to a specified group of system peak demands). The difference in approach between the Average and Excess methods and the Average and Peak methods is in how the demand piece of the allocator is determined. The approach to determining the average piece of the allocator is the same.

Q. How do the Average and Excess methods and Average and Peak methods differ in the approach used to determine the demand piece of the production-capacity allocator?

A. The Average and Excess methods are based on the assumption that generation facilities are built to meet peak load demands. In contrast, Average and Peak methods are based on the assumption that generation facilities are built to meet the entire load of the electric utility at all times.

Q. Do electric utilities build generation facilities only to meet peak load demands?

A. No. An electric utility adds generation capacity when doing so reduces the running costs of meeting its load requirements throughout the year by more than the cost of adding the additional capacity.

Q. What do you mean by your statement that an electric utility adds generation capacity to meet its load requirements throughout the year rather than just to meet its peak load demands?

A. There are three types of electric generation facilities: base, intermediate, and peaking. Base generation facilities, typically coal and nuclear generation plants, are generally the most expensive plants to build. Base generation facilities generally have lower running costs than peaking generation facilities. Peaking generation facilities, typically combustion

turbines, are generally the least expensive to build but use more expensive natural gas or oil as fuel to generate electricity. The output of peaking generation facilities can be changed quickly. Because of their low cost to build and their higher fuel cost, peaking units are only economic to run for a few hours of the year. Intermediate generation facilities fall between base and peaking generation facilities. The most common intermediate facility is a combine cycle generation plant. It is more expensive to build than combustion turbines and less expensive than coal and nuclear plants. The amount and type of each generation facility needed is unique to each utility's loads. However, all three types of generation facilities are needed to meet load at the minimum cost.

Q. What is the implication of AmerenUE's and MIEC's use of an Average and Excess method?

A. If, as suggested by MIEC witness Maurice Brubaker and AmerenUE witness Wilbon L. Cooper, in their direct testimony, the amount of production plant capacity required is primarily determined by the peak rate of usage during the year, (Brubaker, Direct, page 10, lines 15 to 19; Cooper, Direct, pages 13-14, lines 19-23, 1-3), then the only appropriate generation facility to build to meet new load demands would be a peaking facility, i.e., natural gas combustion turbines. If an electric utility's generation was only built to meet peak loads, it would never make economic sense to spend billions of dollars to build a base generation facility.

Q. Since generation and transmission facilities are built to satisfy the demand for electricity throughout the year, is it reasonable to use an Average and Excess methods such as those employed by Mr. Brubaker and Mr. Cooper?

A. No. Average and Excess methods do not take into account the fact that generation facilities are built to meet the entire load of the electric utility at every point in time. The Average and Excess methods lead to production-capacity allocation factors that unfairly put too much revenue responsibility on the classes that have lower load factors[1]. This happens because the demand-related piece of the production-capacity allocator is determined by the difference between each class' peak demand and that class' average demand. A class with a low load factor, e.g. the residential class, would have a greater difference between its peak demand and its average demand than a higher load factor class, e.g. the Large Transmission class. The Average and Excess allocation factor results in an excessive amount of the production-capacity costs being allocated to the low load factor classes.

On the other hand, Average and Peak methods, used by Staff and OPC, consider each class's contribution to the system's total peak, as opposed to each class's excess demands at peak. This is a more reasonable approach because peak load demand is a function of the total loads of each class, not just the excess loads of each class.

As described in Staff's CCOS and Rate Design Report, the Average and Peak method Staff used was based on taking the four highest coincident system monthly load demands in determining each class' percent of that monthly maximum demand.

**Comparison of Class Cost-of-Service**

Q. Have you prepared a summary of the CCOS Study results parties presented in their direct cases?

[1] The load factor is calculated as the average hourly usage divided by the hourly peak demand for the defined time period. A high load factor, e.g. close to 1.0, indicates that the load is fairly constant across time. A low load factor, e.g. close to 0 indicates a high load for a small portion of the time. Industrial customers commonly have high load factors. Weather sensitive customers, such as residential customers, commonly have lower load factors.

A. Yes. For ease of reference, I summarized their revenue neutral results. Schedule MSS-R-1, is a table and chart of each of the CCOS study results. It includes the percent change in customer class revenues required to equalize class rates of return on a revenue neutral basis. Schedule MSS-R-1.2 is a series of bar charts where each chart presents the results of each party's CCOS study for a particular class of customers. Since, in each CCOS study the use of a particular allocation method for allocating production (generation) capacity costs to the customer classes is the main determinant of the overall CCOS study results, I have identified each study by both the party who is sponsoring the study and by the production-capacity allocation method used in that study.

For each party, the type of CCOS study and the witness who sponsors the study follows:

**AmerenUE (4 NCP A&E):** An Average and Excess allocator that is calculated using the highest noncoincident class peaks by month per customer class for four months in the test year. [direct testimony of William M. Warwick and Wilbon L. Cooper]

**MIEC (4 NCP A&E):** An Average and Excess allocator that is calculated using the highest noncoincident class peaks by month per customer class for four months in the test year. This is the same method as AmerenUE's study. [direct testimony of Maurice Brubaker]

**Staff (4 CP A&P):** an Average and Peak allocator that is calculated using the highest monthly coincident (system) peaks by month per customer class for four months for the 12 months ending July 31, 2009. [direct testimony of Michael S. Scheperle]

**Staff (Capacity Utilization; 12 NCP A&P):** A Capacity Utilization allocator is calculated using the highest noncoincident class peaks by month per customer class for each of the twelve months ending July 31, 2009. [direct testimony of Michael S. Scheperle]

**OPC (4 CP A&P):** An Average and Peak allocator that is calculated using the highest monthly coincident (system) peaks by month per customer class for four months in the test year. [direct testimony of Barbara A. Meisenheimer and Ryan Kind]

**OPC (TOU):** A time-of-use allocator based upon class contribution to hourly production costs during the test year. [Barbara A. Meisenheimer and Ryan Kind]

Q. What are the CCOS studies results for the Residential (RES) class?

A. Schedule MSS-R-1.1 shows the results of all the CCOS studies. For the RES class (residential customers), the results of the various CCOS studies range from an increase in class revenues by 0.98% (OPC) to an increase in class revenues by 13.27% (MIEC) to match the rate of return of the RES class to the overall rate of return. All of the CCOS studies - AmerenUE, Staff, OPC and MIEC – show positive values (revenue neutral increases) for the required percentage change in the revenue responsibility of the RES class.

Q. What are the results of the CCOS studies regarding the SGS class (small businesses)?

A. Schedule MSS-R-1 shows that the results of all the CCOS studies indicate that the SGS class now provides revenues in excess of the revenues required to provide a rate of return equal to the overall rate of return. For the SGS class, the percentage reductions (decreases) to class revenue responsibility required to match the cost of serving that class ranges from -9.34% (OPC) to -4.24% (Staff). All of the CCOS studies show negative values

(revenue neutral decreases) for the required percentage change in the revenue requirement of the SGS class.

Q. What are the results of the CCOS studies regarding the Large General Service (LGS) class (large commercial customers such as grocery stores)?

A. Schedule MSS-R-1 shows that the results of all the CCOS studies indicate that the LGS class now provides revenues in excess of the revenues required to provide a rate of return equal to the overall rate of return. For the LGS class, the percentage reductions (decreases) to class revenue responsibility required to match the cost of serving that class ranges from -12.72% (MIEC) to -3.54% (OPC). All of the CCOS studies show negative values (revenue neutral decreases) for the required percentage change in the revenue requirement of the LGS class.

Q. What are the results of the CCOS studies regarding the Large Primary Service (LPS) class (industrial customers)?

A. Schedule MSS-R-1 shows the results of the various CCOS studies range from a reduction in class revenues by -7.35% (MIEC) to an increase in class revenues by 10.38% (OPC) would be required to equate the rate of return of the LPS class to the overall rate of return. Four of the CCOS studies: AmerenUE, Staff (4 CP A&P), Staff (Capacity Utilization), and MIEC (4 NCP A&E) show negative values for the required percentage change in the revenue responsibility of the LPS class. Only the OPC studies show a positive value (increase) for the required percentage change.

Q. What are the results of the CCOS studies regarding the LTS (large industrial customers)?

A. Of the six classes considered in the CCOS studies, the LTS class results produced the widest range of outcomes with regard to changes in class revenue required to provide a rate of return equal to the overall rate of return. The results range from a reduction in class revenues by -15.52% (MIEC) to an increase in class revenues by 13.91% (OPC). Four of the CCOS studies: Staff (4 CP A&P), Staff (Capacity Utilization), OPC (4 CP A&P), and OPC (TOU), show positive values (increases) for the required percentage change in the revenue responsibility of the LTS class. Two of the CCOS studies: AmerenUE and MIEC show a negative value (decreases) for the required percentage change in revenue responsibility.

**Charter Issue**

Q. What is Charter's issue concerning the SGS rate structure?

A. Charter witness Stinneford, explains that Charter is currently charged more than AmerenUE's cost to serve Charter because the SGS rate class is designed for customers that are characterized by a low load factor and who are overwhelmingly metered. Charter has television power supplies that are currently unmetered. SGS customer charges are based on an analysis of the cost of fixed costs such as the costs of service lines, meters, meter reading, billing etc. per customer. Although Charter has television power supplies that are on unmetered lines the billing accounts for those television power supplies include the full customer charge from the SGS rate schedule. Mr. Stinneford believes that since television power supplies are unmetered, the meter-related costs (i.e., meter cost and meter reading) should not be included in the customer charge component of unmetered service.

Q. Does Staff agree with Mr. Stinneford's premise?

A. Yes. Currently, AmerenUE has a customer charge component for unmetered service in the street lighting section of its tariff. Therefore, Staff believes it would be appropriate to have an unmetered customer charge provision in its tariff for such services as television power supplies.

**Large Transmission Service**

Q. What parties address the LTS rate in direct testimony?

A. Staff, Office of Public Counsel, AmerenUE, and MIEC filed direct testimony addressing the LTS rate. AmerenUE's LTS rate schedule has one customer—Noranda, an aluminum smeltering operation. MIEC, who is a group of large commercial and industrial customers including Noranda, filed a CCOS study.

Q. A number of individuals, including the President and CEO of Noranda, State Senator Robert Mayer, State Representative Steve Hodges, employees of Noranda and various consultants filed direct testimony regarding the importance of Noranda to the economy of Southeast Missouri. Did Staff consider the economic effects of Noranda's operations in Missouri when it prepared its direct testimony in this case?

A. Not only did Staff consider the economic effects of Noranda's operations in Missouri it considered the economic effects of and on all of AmerenUE's customers in Missouri.

Q. What is Staff's concern with MIEC's recommendation for the LTS class?

A. MIEC's rate recommendation for the LTS class is a gross deviation from every other party's CCOS study results. Schedule MSS-R-1 is a collection of the various parties' CCOS study results. The LTS class results produce a range from a reduction in class revenues by -15.52% (MIEC revised) to an increase in class revenues by 13.91% (OPC). A chart

comparison for the LTS class is depicted on Schedule MSS-R-1.1. The other four CCOS studies show a range within six percent (plus or minus) of its cost to serve. The LTS class results produce the widest range of outcomes with regard to changes in class revenue required to provide a rate of return equal to the overall rate of return.

Staff's concerns, however, relate to revenue neutral adjustment recommendations by MIEC. MIEC recommends various reductions to the LTS class based on the overall increase ordered by the Commission in this case. MIEC's recommendations are outlined in Schedule MSS-R-2. Column B (Schedule MSS-R-2) lists the annualized revenues in this case for the LTS class. Column C lists Staff's calculation of billing units in this case for LTS service using the June 1, 2005 rates (the LTS rate schedule was established June 1, 2005 in Case No. EO-2005-0180). Columns D and E are MIECs original and revised proposals for LTS service. MIECs' proposal is well below current annualized rates and even below rates established in June 2005 for the LTS class. If the LTS class is granted a decrease, all other class(es) would be required to make up the revenue requirement difference. Staff believes that the LTS variation recommendation by MIEC is too large. For example, based on Revised Schedule MEB-COS-9 of Mr. Brubaker revised direct testimony, the LTS class revenue requirement would be $111.0 million. The table below shows a -20.2% reduction (decrease) for the LTS class based on current revenues and a -14.2% reduction (decrease) for the LTS class based on 2005 rates (LTS rate schedule established June 1, 2005). The recommendation by MIEC is well below their revised recommendation as contained in Revised MEB-COS-7 (all 4 pages).

| Rate Schedule | Annualized Current Revenues (Millions) | Establishment of LTS Rate June 1, 2005 (Millions) | MIEC Proposal (Millions) | Percent Change From Current Revenues | Percent Change From Establishment of LTS Rate |
|---|---|---|---|---|---|
| LTS | $139.2 | $129.3 | $111.0 | -20.2% | -14.2% |

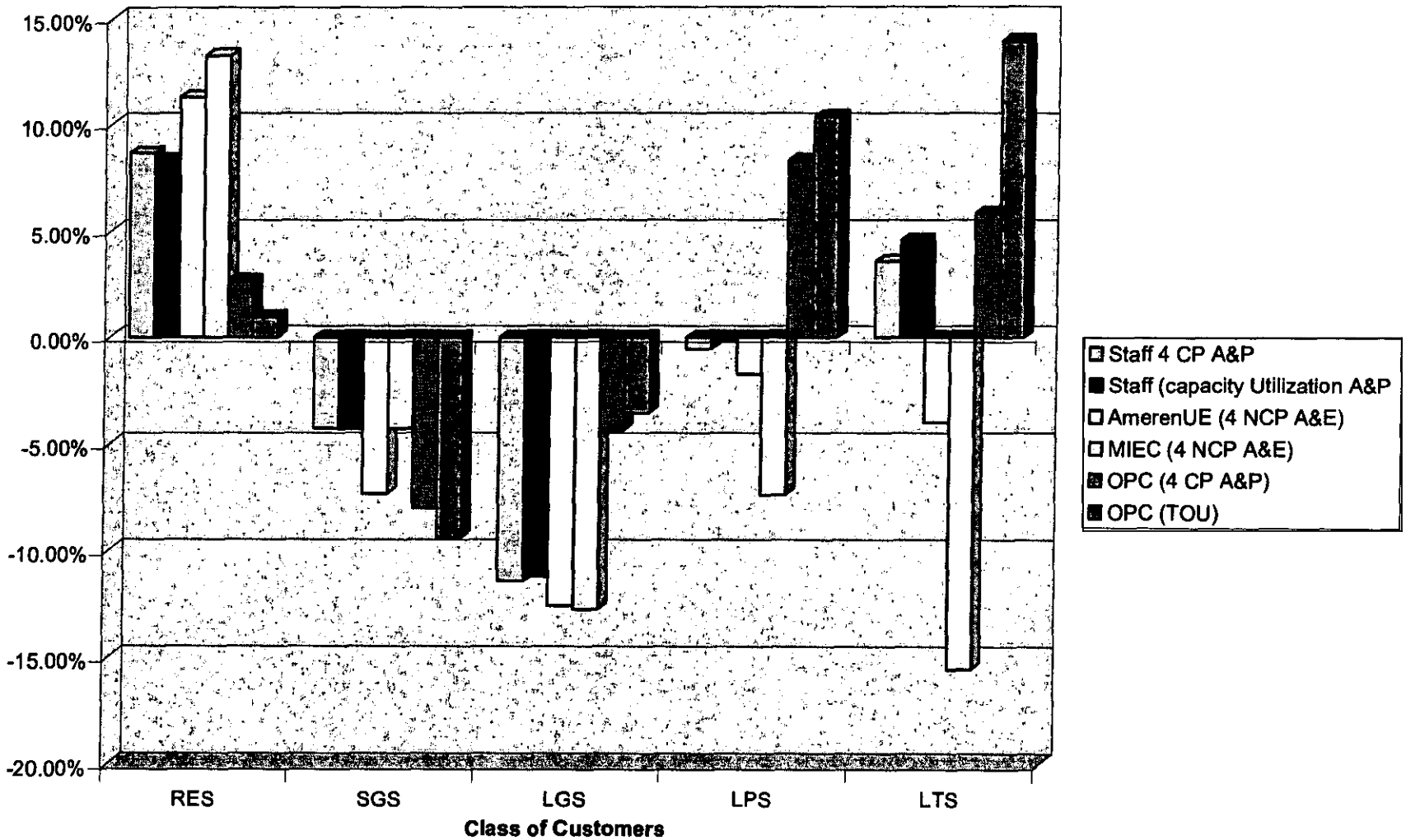
Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

**AmerenUE**
**Case No. ER-2010-0036**
**A Comparison of the Results of the Class Cost-of-Service Studies**
**The Percent Change in Class Revenues Required to Equalize Class Rates of Return**
**(Revenue Neutral)**

| | Missouri Retail | RES | SGS | LGS | LPS | LTS |
|---|---|---|---|---|---|---|
| Staff (4 CP A&P) | 0.00% | 8.67% | -4.24% | -11.40% | -0.54% | 3.57% |
| Staff (Capacity Utilization, 12 NCP A&P) | 0.00% | 8.32% | -4.28% | -11.19% | -0.10% | 4.56% |
| AmerenUE (4 NCP A&E) | 0.00% | 11.28% | -7.31% | -12.53% | -1.70% | -3.97% |
| MIEC (4 NCP A&E) - Revised | 0.00% | 13.27% | -4.26% | -12.72% | -7.35% | -15.52% |
| OPC (4 CP A&P) | 0.00% | 2.68% | -7.99% | -4.33% | 8.32% | 5.83% |
| OPC (TOU) | 0.00% | 0.98% | -9.34% | -3.54% | 10.38% | 13.91% |

## Comparison of Revenue Neutral CCOS Results




Schedule MSS-R-1.2

**Missouri Public Service Commission**
**Case No. ER-2010-0036**
**Illustration of MIEC Proposals - Annualized Revenues**

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| Rate Schedule | Annualized Current Revenues (Millions) | Establishment of LTS Rate June 1, 2005 (Millions) | MIEC Proposal Original (Millions) | MIEC Proposal Revised (Millions) | MIEC Schedule Proposals |
| LTS | $139.2 | $129.3 | $111.6 | $124.8 | Schedule MEB-COS-7, Page 1 of 4 (Illustration $137 million increase) |
| LTS | $139.2 | $129.3 | $109.8 | $122.8 | Schedule MEB-COS-7, Page 2 of 4 (Illustration $100 million increase) |
| LTS | $139.2 | $129.3 | $114.5 | $128.1 | Schedule MEB-COS-7, Page 3 of 4 (Illustration $200 million increase) |
| LTS | $139.2 | $129.3 | $119.2 | $133.3 | Schedule MEB-COS-7, Page 4 of 4 (Illustration $300 million increase) |
| LTS | $139.2 | $129.3 | $111.0 | $111.0 | Schedule MEB-COS-9 |

Column A - Large Transmission Class in MIEC Schedules
Column B - Annualized Revenues in MIEC Schedules
Column C - Staff calculation of billing units in case using June 1, 2005 rates (when LTS Rate established)
Column D - MIEC Proposals using January 6, 2010 filing
Column E - MIEC Proposals using revised amounts
Column F - MIEC Schedule reference