Ameren Exhibit 46.0

ILLINOIS COMMERCE COMMISSION

DOCKET Nos. 09-0306 - 09-0311 (Cons.)

REBUTTAL TESTIMONY

OF

DAVID W. SOSA, Ph.D.

SUBMITTED ON BEHALF

OF

CENTRAL ILLINOIS LIGHT COMPANY
d/b/a AmerenCILCO

CENTRAL ILLINOIS PUBLIC SERVICE COMPANY
d/b/a AmerenCIPS

ILLINOIS POWER COMPANY
d/b/a AmerenIP

(The Ameren Illinois Utilities)

October 23, 2009

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REBUTTAL TESTIMONY OF

DAVID W. SOSA, Ph.D.

Submitted on Behalf of

The Ameren Illinois Utilities

I. INTRODUCTION

A. Witness Identification

Q. Please state your name and business address.

A. My name is David W. Sosa, Ph.D., and my business address is 650 California Street, San Francisco, California, 94108.

Q. By whom are you employed and in what capacity?

A. I am a Vice President with Analysis Group.

Q. Please describe your educational background and relevant work experience.

A. See my Statement of Qualifications, attached as an Appendix to this testimony.

Q. When did you join Analysis Group?

A. I joined Analysis Group in May of 1997.

Q. What has been the nature of your assignments at Analysis Group?

A. My work has involved the application of economic principles to public policy and market questions, primarily in the electric utility and telecommunications industries. I have participated in numerous projects addressing economic issues before the Federal

Communications Commission, the U.S. Department of Justice, the Federal Energy Regulatory Commission ("FERC"), state regulatory commissions, and federal and state courts. I have filed expert testimony before the Nevada Public Utilities Commission, FERC, the Florida Public Service Commission, and the federal courts.

Q. What is your experience with electric and gas utilities?

A. I have testified on electric and gas utility O&M expense and service quality benchmarking, econometric forecasting, and economic principles in ratemaking. In addition, I have conducted economic and financial studies on a wide range of issues including merger benefits, restructuring, affiliate relations, competition and market power.

Q. What companies have you conducted benchmarking studies for?

A. I have conducted benchmarking studies for Nevada Power, Sierra Pacific Power and Florida Power & Light. I have also conducted or evaluated benchmarking studies for Bell Atlantic and GTE (now Verizon), WorldCom and Microsoft.

Q. On behalf of what parties are you sponsoring rebuttal testimony?

A. I am sponsoring rebuttal testimony on behalf of the Ameren Illinois Utilities ("AIUs").

B. Purpose, Scope and Identification of Exhibits

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to analyze and comment on the direct testimony of Citizens' Utility Board ("CUB") and The Office of the Illinois Attorney General ("AG") (collectively "CUB-AG") witness Steven A. Fenrick, CUB-AG Exhibit

1.0. Specifically, I have been asked to evaluate Mr. Fenrick's econometric benchmark study of the AIUs' electric O&M expenses. I also have been asked to review and comment on the peer-group benchmarking approach used by the AIUs' witness Mr. Ronald Amen, and to compare the peer group approach employed by Mr. Amen to the econometric approach employed by Mr. Fenrick.

Q. Dr. Sosa will you be sponsoring any exhibits with your rebuttal testimony?

A. Yes, in addition to my rebuttal testimony, I am sponsoring Ameren Exhibit 46.1.

II. <u>SUMMARY OF CONCLUSIONS</u>

Q. Dr. Sosa, please summarize your conclusions.

A. The peer group benchmarking approach used by Mr. Amen is transparent, reliable, and an appropriate method to compare the AIUs' levels of operation and maintenance ("O&M") expense to other utilities'. The results of Mr. Amen's benchmarking studies are reasonable and will be helpful to the Commission in evaluating the AIUs' expense levels relative to other electric and gas utilities.

In contrast, the econometric benchmarking approach Mr. Fenrick has presented in this proceeding introduces an unnecessary level of complexity and consequent risk of error to what should be a transparent and uncomplicated comparison of utility expenses. In fact, Mr. Fenrick's analysis suffers from substantial errors that render his results biased, imprecise and unreliable, and his conclusions regarding the AIUs' cost efficiency and test year expenses unreasonable. Correcting some of the serious errors in Mr. Fenrick's econometric benchmarking model leads to material changes in his results that are qualitatively similar to the results of Mr. Amen's benchmarking studies. The

examples of econometric benchmarking that Mr. Fenrick cites in his testimony do not support either the model he has presented or his interpretation of the results.

III. <u>ECONOMETRIC BENCHMARKING</u>

Q. What is "benchmarking"?

A. Benchmarking is a measurement technique that compares the business performance and practices of a company to those of other companies.

Q What purpose can benchmarking O&M expenses serve in rate case proceedings such as this?

A. Benchmarking provides regulators with a tool to evaluate operational and financial performance, and can be used to assess indicators of overall company performance as well as the performance of specific activities. By appropriate benchmarking of various aspects of performance, a company or interested party is able to develop a view of how well it is performing relative to its peers. Benchmarking is widely used to evaluate performance, not only in regulatory proceedings, but also by market analysts and companies.

Q. What is the peer group method of benchmarking expenses?

A. The peer group approach is a transparent, reliable and widely-used method of benchmarking financial performance, including utility O&M expenses. There are two principal steps involved in peer group benchmarking. In order to compare the performance of a company to the performance of other companies, it is first necessary to determine whether the cost or performance measure at issue can be directly compared across companies, or whether a common means of measurement must be established. For

example, because A&G costs vary based on the number of customers served, among other factors, this cost measure must be normalized – transformed into a common unit of measurement – before a meaningful comparison can be made between the subject company's performance and the performance of companies in the peer group. One common approach to normalizing utility expenses, such as A&G, is to express expenses on a per-customer basis.

After a common basis of comparison has been established, it is necessary to construct an appropriate panel of companies against which financial or service level performance can be compared – the peer group. The criteria by which companies are selected for inclusion in the peer group will depend upon the objective of the benchmarking exercise. For example, one objective of a benchmarking study may be to evaluate a company's performance relative to the electric industry broadly. In this case, it is necessary to create a peer group that is based on a meaningful screen for comparability and yet includes a large number of companies. It also may be informative to compare the subject company's performance to additional, alternative peer groups comprised of fewer companies that more closely resemble the subject company in certain aspects.

Q. Please discuss your experience with the peer group method of benchmarking O&M expenses.

A. I have conducted several benchmarking studies for electric and gas utilities using the peer group approach, including Sierra Pacific Power, Nevada Power, and Florida Power & Light.

For several Nevada Power and Sierra Pacific Power general rate cases, I have benchmarked the companies' electric and gas non-fuel O&M expenses against a comparable group of utilities. I also have benchmarked various measures of reliability and service quality against the companies' own past performance.

For Florida Power & Light's 2005 general rate case, I prepared a peer group benchmark study of the company's non-fuel O&M expenses, as well as various performance, reliability and service quality measures.

For the Bell Atlantic/GTE merger in 1999, I prepared a peer group benchmark analysis of the merged companies' expected operating expenses relative to the financial performance of several merged electric and telephone utilities.

Q. Have you reviewed Mr. Amen's testimony, and benchmarking studies and results presented in these proceedings?

A. Yes. The benchmarking studies that Mr. Amen has presented in this proceeding are based on the widely-used peer group approach. Mr. Amen's methodology is consistent with this approach and transparent. I find Mr. Amen's benchmarking studies appropriate to evaluate the AIUs' expense performance relative to other electric and gas utilities and his results reasonable.

Q. What is econometric benchmarking?

A. Econometric benchmarking is a statistical comparison, based on a regression analysis, of a company's financial or operating performance relative to other companies.

Q. Does Mr. Fenrick acknowledge that there is a disadvantage to econometric benchmarking?

A. Yes. Mr. Fenrick observes: "The downside of the econometric approach is the need for regression analysis. This increases the complexity of the calculation procedures and limits the transparency of the approach and results."[1]

Q. What is a regression?

A. In principle, a regression is a statistical model based on a mathematical expression of the relationship between 1) a particular outcome (also called a dependent variable) and 2) factors that contribute to that outcome (also called explanatory variables or independent variables). In the case of econometric benchmarking of expenses, this comparison is based on a theoretical relationship between costs and the factors that cause these costs.

Q. Why is the need for regression analysis a "downside" of econometric benchmarking?

A. Regression analysis, as applied, may incorporate the complexity of statistical and economic theory, but it also is subject to the judgment of the researcher. Because of the complexity and limited transparency of regression analysis, the judgments of the researcher can easily be obscured. In other words, it can be challenging for someone unfamiliar with regression analysis and econometrics to evaluate the assumptions behind a regression model and determine whether flaws in the model are causing bias in the results.

Q. Are you familiar with the econometric analysis of utility operating performance?

[1] Fenrick, Steve, "Statistical Evaluation of the O&M Cost Performance of the Ameren Illinois Utilities," September 28, 2009, CUB-AG Ex. 1.2, p. 2-4.

A. Yes. I have prepared econometric forecasts for a range of utility operating and financial metrics.

Q. Have you conducted an econometric benchmarking study?

A. No. Although I have used econometric approaches to study a wide range of economic and financial measures, in all the cases where I have been asked to benchmark firm performance, including numerous investigations of utility O&M expenses, the peer group approach has been the most appropriate approach to evaluate expenses and a more complex approach, such as econometric benchmarking, has not been appropriate.

Q. Why not?

A. With any empirical question, the researcher faces a tradeoff between complexity and accuracy when choosing an analytical technique. If more than one analytical technique may be appropriate to answer a question, a more complex technique should be used only if it improves the accuracy of the analysis relative to a less complex approach. In other words, the analytical technique employed should not be more complex than necessary to answer the question.

Q. Is the peer group appropriate for benchmarking the AIUs' O&M expenses in this proceeding?

A. Yes. The peer group approach is a transparent and reliable approach that will assist the Commission in evaluating the performance of the AIUs relative to other utilities.

IV. MR. FENRICK'S ECONOMETRIC ANALYSIS IS FUNDAMENTALLY UNRELIABLE

Q. Are there customary practices in the economics profession with respect to the formulation of a model of costs?

A. Yes. The formal relationship between economic theory and empirical modeling is important and it is customary in the economics literature to clearly develop and articulate this relationship. In other words, the standard practice for developing an empirical cost model includes first developing a theory of the factors that cause the costs, which is commonly referred to as *cost causation*.

Q. Should this convention apply to econometric benchmarking studies in regulatory proceedings?

A. Yes. In the case of econometric benchmarking of O&M expenses, the model should be based on a formulation of the relationship between O&M expenses and the factors that contribute to those expenses. Failure to formulate an econometric model based on theory can result in specification errors.

Q. What is a specification error?

A. The specification of an econometric model includes the formulation of the mathematical equation and the selection of the appropriate explanatory variables. Two of the most common specification errors are the omission of relevant variables and the inclusion of irrelevant variables.[2]

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[2] For a discussion of specification errors, see Green, W. H., Econometric Analysis, Second Edition. (Macmillan, 1993) §8.4 and Kmenta, J., Elements of Econometrics, Second Edition. (Macmillan, 1986) §10-4.

Q. What is the consequence of a specification error?

A. If an econometric cost model suffers from specification errors because an important explanatory variable has been omitted, the estimates will be biased and it would be inappropriate to use the statistical properties of the model to conclude a causal relationship between included explanatory variables and observed expenses, or draw any conclusions from the model.[3]

Q. Please describe the framework for Mr. Fenrick's econometric model.

A. Mr. Fenrick has used a framework that is based on an econometric model of firm-level cost causation. This is an econometric approach that models a firm's production costs as a function of the firm's output – that is, how much product it produces – and input prices – what the firm pays for the inputs that it uses to produce the output. A researcher using this approach must have a valid theory of what observable factors cause a company's observed costs. In this framework it is customary to identify causal factors of total cost in two broad categories, measures of output associated with the observed total cost and measures of the prices of the inputs that the firm uses in its production process to create the output.

Q. But Mr. Fenrick isn't modeling total cost, is he?

A. No. Mr. Fenrick is modeling A&G, distribution, customer accounts, customer service, and sales expenses. These are considered intermediate costs, the cost of producing intermediate services, or what he has elsewhere referred to as "micro" costs.[4]

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[3] For a discussion of omitted variable bias, see Green, W. H., Econometric Analysis, Second Edition. (Macmillan, 1993) §8.4.
[4] Fenrick, Steve, Lullit Getachew and Mark Lowry, "Benchmarking the Costs of Ontario Power Distributors," March 20 2008, p. 5.

Intermediate services are inputs to the final product, electricity delivered to the end user. In other words, electric utilities aren't in the business of producing A&G services, such as legal and accounting services.

Q. Is it more difficult to model intermediate costs using econometric techniques?

A. Yes. It is generally more difficult to develop reliable econometric benchmarks for intermediate costs, because the analysis must consider not only output levels and input prices, but also other intermediate services that contribute to total costs, illustrating the importance of having a coherent and robust theory of cost causation.

Q. Has Mr. Fenrick presented a reasonable benchmark model of the AIU's O&M expenses?

A. No. As I discussed earlier, Mr. Fenrick has chosen a model from which it is difficult to develop reliable benchmarks, but he has not developed a coherent theory for the causes of the O&M expenses that he examines. That is, Mr. Fenrick has failed to clearly explain the most important factors that drive A&G, distribution, customer accounts, customer service, and sales O&M expenses, and why his models and his variables capture these factors.

Q. What are the consequences of this failure?

A. A careful examination reveals that Mr. Fenrick's models suffer from substantial specification errors. Moreover, Mr. Fenrick has introduced an unnecessary degree of complexity in his analysis. It is difficult for someone unfamiliar with cost theory and econometric techniques to evaluate Mr. Fenrick's analysis and results.

V. MR. FENRICK'S A&G MODEL SUFFERS FROM MATERIAL SPECIFICATION ERRORS

Q. What are the specification errors in Mr. Fenrick's A&G model?

A. One specification error associated with Mr. Fenrick's A&G model is his omission of total sales as an output variable. This is inconsistent with his D&CC model, for which he assumes that number of customers and total sales are reasonable output measures. In his A&G model, Mr. Fenrick assumes that the number of customers and net generation are reasonable measures of output for the A&G function. Net generation is the net amount of electricity generated by vertically integrated utilities. Mr. Fenrick argues that because "no allocation is made between A&G [expenses] incurred due to distribution and generation functions" it is appropriate to model net generation as a measure of output.[5] Mr. Fenrick's modeling approach for A&G expenses is also inconsistent with two econometric studies that he cites in his testimony.[6] These studies used total sales and number of customers as output variables; neither study used net generation as an output variable.[7]

Q. Doesn't Mr. Fenrick argue that his choice of net generation as an output variable is reasonable because his model produces coefficient estimates that have the expected sign and are statistically significant?

A. Yes, but this is not a valid argument. Mr. Fenrick is confusing correlation with causality. It is important in a model of cost causation to distinguish between a factor that

[5] Fenrick, Steve, "Statistical Evaluation of the O&M Cost Performance of the Ameren Illinois Utilities," September 28, 2009, CUB-AG Ex. 1.2 p. 4-2.
[6] "Direct Testimony of Steven A. Fenrick on behalf of The Citizens Utility Board and the People of the State of Illinois," September 28, 2009, CUB-AG Ex. 1.0 p. 7.
[7] See "Direct Testimony of Mark Newton Lowry On behalf of Oklahoma Gas and Electric Company," p. 14-17 and "Rebuttal Testimony of Mark Newton Lowry on behalf of Union Electric Company," Missouri Public Service Commission Case No. Ec-2002-1, p. Schedule 2-14 – Schedule 2-16.

causes costs and a factor that is correlated with costs. If one factor causes cost, then the two are most certainly correlated. But just because two metrics move together does not mean that one caused the other, even if it seems to make sense. The choice of explanatory variables for a cost model must be based on sound economic theory. As one noted economist and econometrician has pointed out, "a statistical relationship, however strong and however suggestive, can never establish a causal connection: our ideas of causation must come from outside statistics, ultimately from some theory."[8] Mr. Fenrick has failed to provide a sound basis in economic theory for the cost models underlying his benchmarks.

One example that illustrates the difference between correlation and causality comes from the medical literature. A 1999 study examining the effects of light exposure on vision concluded that young children who sleep with a light on have a higher risk of becoming nearsighted, the implication being that sleeping with the light on causes nearsightedness.[9] However, a subsequent study found a strong relationship between the incidence of nearsightedness in parents and the development of nearsightedness in their children, and that parents who are nearsighted tend to leave a light on in their children's room at night.[10] The later study demonstrated that a child's nearsightedness is inherited from (or caused by) his or her parents; not caused by sleeping with the light on. The first study simply demonstrated a correlation between nearsightedness and the tendency to leave a light on at night.

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[8] Gujarati, D. Basic Econometrics, Third Edition. (McGraw-Hill, 1995) p. 20, quoting Kendall & Stuart.
[9] CNN, "Night-light may lead to nearsightedness," May 13, 1999. http://www.cnn.com/HEALTH/9905/12/children.lights/index.html.
[10] "Night Lights Don't Lead To Nearsightedness, Study Suggests," Research News: The Ohio State University. http://researchnews.osu.edu/archive/nitelite.htm.

Q. Can you explain why the omission of total sales is not reasonable?

A. Total sales, which is a widely accepted measure of output, captures the "quantit[y] of work performed by utilities."[11] If net generation is used as a measure of output, in the place of total sales, the recorded level of output for utilities that don't own generation is always zero. Therefore, Mr. Fenrick's model fails to reasonably account for the level of activity of distribution-only companies, such as the AIUs.[12] In other words, companies that had little or no net generation during the study period appear to have had no "output." Consequently, Mr. Fenrick's model produces biased estimates.

Q. What is the implication of Mr. Fenrick's omission of total sales on his estimate of the AIUs' A&G costs?

A. Correcting this flaw in his model yields results that are qualitatively similar to the results of Mr. Amen's peer group benchmark for A&G. That is, using total sales, a widely accepted measure of output in econometric benchmarking, in place of net generation, and making no other changes to Mr. Fenrick's A&G model, suggests that the AIUs' A&G expenses compared favorably to Mr. Fenrick's benchmark companies.

Q. Are there other problems with Mr. Fenrick's A&G model?

A. Yes. In his model of A&G expense levels, Mr. Fenrick includes only one variable that is intended to address the effect of input costs on expenses. This "wage level" variable is severely flawed.

Q. Why is Mr. Fenrick's "wage level" variable severely flawed?

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[11] Rebuttal Testimony of Mark Newton Lowry on behalf of Union Electric Company, Missouri Public Service Commission Case No. Ec-2002-1, Schedule 2-14.

[12] I also note that Mr. Fenrick does not present evidence or an explanation that his net generation variable accurately controls for divestiture events during the study period.

A. Mr. Fenrick's "wage level" variable is not contemporaneous with the rest of his data set. Mr. Fenrick's study period is 1994 to 2007. For all 14 years of this period, he uses a single May 2008 wage level for each company for every year included in his analysis. I note that data for 2007 and earlier periods are available. His wage metric implies constant real wages over time and constant relative wages across regions over the 14-year period 1994-2007. Due to this specification, Mr. Fenrick implicitly assumes that changes in wage rates over time and relative changes between regions cannot be a cost factor. Wage levels change over time, even after adjusting for inflation, and across regions of the country.[13] Mr. Fenrick makes no attempt to explain why May 2008 wage levels are appropriate for modeling costs incurred in every year from 1994 through 2007. Moreover, Mr. Fenrick offers no evidence that his "wage level" metric reflects labor costs for the AIUs or any of the other utilities in his study.

Mr. Fenrick also assigns wages levels based on one particular metropolitan area. In the case of AEP Texas Central, for example, Mr. Fenrick uses the wage level for Corpus Christi, Texas where the subsidiary's headquarters are located. However, the parent company AEP's headquarters are in Columbus, Ohio where American Electric Company Service Corporation (AEPSC) is also located. AEPSC provides accounting, administrative, information systems, engineering, financial, legal, maintenance and other services to AEPs subsidiaries, including AEP Texas Central.[14] Thus we can expect that

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[13] See "Real Earnings – September 2009," Bureau of Labor Statistics, October 2009 <http://www.bls.gov/news.release/pdf/realer.pdf>, accessed October 21, 2009; "County Employment and Wages – First Quarter 2009," Bureau of Labor Statistics, October 2009 <http://www.bls.gov/news.release/pdf/cewqtr.pdf>, accessed October 21, 2009; "County Employment and Wages – First Quarter 2008," Bureau of Labor Statistics, October 2008 <http://www.bls.gov/news.release/archives/cewqtr_10172008.pdf>, accessed October 21, 2009.

[14] See AEP From 10-K for Year Ending December 31, 2008, p. 1.

A&G labor costs for AEP Texas Central are affected by wage levels in both Corpus Christi and Columbus, a fact that Mr. Fenrick ignores.

Q. What variables does Mr. Fenrick use to represent general business conditions in his A&G model?

A. Mr. Fenrick includes only one variable that he claims is a measure of general business conditions, the percent of utilities' distribution system underground. Here, Mr. Fenrick claims that the percent of underground distribution circuits is best measured by reported distribution plant in service. However, in a previous econometric benchmarking study, Mr. Fenrick relied on a very different measure of underground distribution, which was based on circuit miles of underground distribution, not plant in service.[15] Mr. Fenrick has not explained why he changed his approach to calculating a measure of underground lines for this case. Mr. Fenrick also has not explained why plant in service, which is an accounting measure that reflects the vintage of capital investments and is subject to depreciation rules, is a reasonable basis for measuring the line miles of a utility's underground distribution circuits. As Mr. Fenrick acknowledged in a 2008 study, econometric benchmarking studies are sensitive to differences in depreciation methodologies and historic investment patterns.[16]

Q. What is the effect of the flaws that you have identified in Mr. Fenrick's A&G model?

A. Mr. Fenrick has failed to include a relevant explanatory variable (total sales) and has included irrelevant variables (wage level and percentage undergrounding) in his

[15] "Benchmarking the Costs of Ontario Power Distributors," March 2008, p. 47.
[16] "Benchmarking the Costs of Ontario Power Distributors," March 2008, pp. 22-23.

model of A&G expenses. As a consequence, Mr. Fenrick's model suffers from substantial specification errors that render his results unreliable.

Q. Have you reviewed the reliability of Mr. Fenrick's A&G expense estimates?

A. Yes. Mr. Fenrick has overstated the results of his A&G model. Notwithstanding the noted bias in Mr. Fenrick's model, I note that he has failed to demonstrate that the AIUs' actual A&G expenses between 2005 and 2007 are statistically significantly different from his projected expenses. Given that Mr. Fenrick's projected A&G expenses are statistically indistinguishable from actual A&G expenses, he has not established that the AIUs are inefficient. See Ameren Exhibit 46.1.

Q. Please explain Ameren Exhibit 46.1.

A. Using Mr. Fenrick's model, I have calculated the 95% confidence interval around his A&G expense predictions, for the years 2005 – 2007. As we can see, the AIU's actual expenses lie within this confidence interval. Therefore, when we account for the uncertainty in Mr. Fenrick's predicted costs, we cannot conclude that there is a difference between actual expenses and Mr. Fenrick's flawed benchmarks. His conclusions are therefore unreliable. For example, Illinois Power Company's actual A&G costs in 2007 were roughly $60.7 million. The 95% confidence interval around Mr. Fenrick's predicted cost for Illinois Power Company in 2007 ranges from $23.2 million to $92.1 million. Because Illinois Power Company's actual cost falls within this range, we cannot conclude that Illinois Power Company's 2007 A&G expenses are different from Mr. Fenrick's flawed prediction.

VI. FLAWS IN MR. FENRICK'S D&CC MODEL

Q. Mr. Fenrick's claims to have benchmarked the AIUs distribution and customer care O&M costs. What types of expenses are included in distribution O&M and customer care O&M?

A. Distribution system O&M expenses include the costs to receive and deliver power to ultimate customers over a utility's system of transformers, substations and wires. These costs typically include the costs associated with maintaining and repairing the local system. Distribution system expenses reflect the age of the system, the geography of the service territory, the density of the utility's customers, and the susceptibility of the system to interruptions, for example, by adverse weather conditions. Underground circuits are less likely to suffer disruption and require repair, resulting, all else equal, in lower distribution O&M expenses. However, underground distribution circuits are more expensive to install, which is not reflected in the utility's O&M expenses.

The customer care function of the utility encompasses revenue cycle services such as metering and billing, as well as customer service activities including call center operation and coordinating service start-up and shut-off. In addition, coordinating demand-side management activities is also part of customer care. At many utilities the customer care function is in various stages of transition. Many traditional customer care functions are migrating to electronically-integrated services such as automatic meter reading and billing. Investments in the technology to support such migration are expensive but reduce customer care costs that are reported as O&M expenses. Measuring only expense levels for utilities that are migrating customer care functions to electronic platforms tends to distort the picture of costs of customer care. Customer care expenses

can vary across utilities, depending on many factors, including customer density, scale of demand-side management activities, degree of retail competition, quality of service, frequency of customer account turnover, and customers' language diversity.

Q. Based upon your description, distribution and customer care seem like very different types of expenses. Does Mr. Fenrick's modeling approach reasonably approximate cost causation for these two types of expenses?

A. It fails to do so. While Mr. Fenrick's modeling approach is based on the implicit assumption that the modeler understands the cost causation process and that the econometric model should be an accurate mathematical representation of cost causation, Mr. Fenrick fails to satisfy these requirements. It is clear from a review of the distribution and customer care functions, that cost causation mechanisms for these two activities are very different. Mr. Fenrick offers no explanation for why they should be modeled jointly.

Q. Does the D&CC model use wage level as an explanatory variable?

A. Yes. I have the same concerns regarding Mr. Fenrick's wage level variable in his D&CC model as in his A&G model. For example, as with A&G, customer care functions are frequently provided to utilities by affiliates of the parent company that may be headquartered elsewhere in the country. Alternatively, customer care functions may be outsourced to distant geographic regions,[17] in which case a wage metric based on the location of the utility's headquarters is inappropriate.

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[17] See "Outsourcing Customer Care Increases Among Municipal Utilities," UtiliPoint Emerging Technologies, August 2003, <http://www.cisworld.com/articles/0308_brock2.htm>, accessed October 21, 2009; "Sierra Pacific California Extends Outsourcing Contract With ORCOM Utility Signs On for Continued Flexibility and Cost Savings," Business Wire, July 22, 2002, <http://findarticles.com/p/articles/mi_m0EIN/is_2002_July_22/ai_89369032/?tag=content;col1>, accessed October 21, 2009.

Additionally, I note that the wage category, published by the U.S. Bureau of Labor Statistics, that Mr. Fenrick uses for his wage level variable in the D&CC model is "Installation, Maintenance, and Repair Occupations."[18] Mr. Fenrick offers no explanation regarding why it is reasonable to assume that wage estimates for this occupation category, which includes, for example, "Automotive Body and Related Repairers" and "Medical Equipment Repairers," are a reasonable reflection of labor costs for the customer care function.

Q. Mr. Fenrick includes net generation as a business condition in his D&CC model. Is this appropriate?

A. No. Mr. Fenrick claims that vertically integrated utilities enjoy economies of scope in the distribution function because owned generation permits "a more seamless path for the transfer of electricity from primary sources to customer end use."[19] The motivation for this assumption is entirely unclear and Mr. Fenrick provides no evidence of its reasonableness or validity. Moreover, he does not claim that there are economies of scope between generation and customer care, nor does he explain why he believes generation activities might cause customer care costs. In addition, it is not at all clear that by including net generation as a business condition variable, Mr. Fenrick has reasonably controlled for the fact that his sample contains both vertically integrated utilities, such as Arizona Public Service, and non-vertically integrated, such as the AIUs'. It is also unclear that by including net generation as a business condition variable, Mr. Fenrick has

[18] See http://www.bls.gov/oes/current/oessrcma.htm.
[19] Fenrick, Steve, "Statistical Evaluation of the O&M Cost Performance of the Ameren Illinois Utilities," September 28, 2009, CUB-AG Ex. 1.2, p. 3-3.

reasonably controlled for impact of generation divestiture, which some companies in his sample, including the AIUs', experienced during the study period.

Q. Doesn't Mr. Fenrick argue that his choice of net generation as an explanatory variable in his D&CC model is reasonable because the coefficient estimate has the expected sign and is statistically significant?

A. Yes, but this is not a valid argument. As I discussed in the context of his A&G model, Mr. Fenrick is confusing correlation with causality. In the absence of a sound and reasonable basis for assuming that net generation is a causal factor in observed D&CC expenses, we cannot determine whether net generation causes costs and therefore whether a model that includes it as an explanatory variable is reliable.

Q. Does Mr. Fenrick use his "percentage undergrounding" variable in his D&CC model?

A. Yes. The criticism of this variable that I offered in the context of Mr. Fenrick's A&G model applies equally to its use in his D&CC model.

Q. Please describe Mr. Fenrick's "percent forested" variable.

A. Mr. Fenrick claims that a variable of his creation, which he calls "percent forested," captures the effect of vegetation on distribution lines.[20] However, his forestation variable is based on county-level estimates of the percentage of forested land prepared by the U.S. Forest Service. Mr. Fenrick offers no evidence that this Forest Service metric is a reasonable measure of the proximity of vegetation to utilities' transmission and distribution lines. Although Mr. Fenrick's model demonstrates

[20] Fenrick, Steve, "Statistical Evaluation of the O&M Cost Performance of the Ameren Illinois Utilities," September 28, 2009, CUB-AG Ex. 1.2 p. 3-5.

correlation between D&CC O&M expenses and his forestation variable, he has not demonstrated that his forestation variable captures cost causation. Without this causal link, Mr. Fenrick's results are coincidental and unreliable.

Q. Does Mr. Fenrick include a measure of gas customers in his D&CC model?

A. Yes. Mr. Fenrick includes the number of gas customers as a business condition variable in his D&CC model. Mr. Fenrick assumes economies of scope in both distribution and customer care from gas operations, but provides no reasonable explanation of the relationship between his "number of gas customers" variable and D&CC O&M expenses.

Q. Have you reviewed the reliability of Mr. Fenrick's D&CC expense estimates?

A. Yes. He has failed to demonstrate that the AIUs' actual D&CC expenses between 2005 and 2007 are statistically significantly different from his projected expenses. Given that Mr. Fenrick's projected D&CC expenses are statistically indistinguishable from actual D&CC expenses, his conclusion that the AIUs are inefficient is unsupported and therefore unreliable. For example, Illinois Power Company's actual D&CC costs in 2007 were roughly $115 million. The 95% confidence interval around Mr. Fenrick's predicted cost for Illinois Power Company in 2007 ranges from $60.4 million to $148.1 million. Because Illinois Power Company's actual cost falls within this range, we cannot conclude that Illinois Power Company's 2007 D&CC expenses are different from Mr. Fenrick's flawed prediction. See Ameren Exhibit 46.1.

VII. MR. FENRICK'S CONCLUSIONS REGARDING AIUs' TEST YEAR EXPENSES ARE UNREASONABLE

Q. Do you agree that Mr. Fenrick's estimates reasonably identify the AIUs' overall cost performance and describe their test year "inefficiencies?"

A. No, I do not. As I have described above, Mr. Fenrick's model suffers from fatal specification errors and its results are biased and misleading as a consequence. Because the results of Mr. Fenrick's model are not reliable, they cannot form the basis for an evaluation of the AIUs' 2008 test year expenses. Thus, his results do not provide useful information regarding the AIUs' past performance or the reasonableness of its projected D&CC and A&G expense levels and should not be used to inform the ratemaking process. Moreover, Mr. Fenrick's model results exhibit wide confidence intervals suggesting that his projected expenses are indistinguishable from actual expenses. I also note that even if Mr. Fenrick's model was not fatally flawed, which it is, he has not presented the results of any statistical tests that would suggest his model has reasonable or reliable predictive power (e.g., out of sample testing).

Q. Do you have any other observations regarding Mr. Fenrick's quantification of "inefficiencies" using his model?

A. Yes. Mr. Fenrick's projection of 2008 A&G expenses is logically inconsistent with his model. He makes the argument that pension and benefits costs represent costs that are subject to influences beyond utilities' control and therefore removes them from A&G expenses for modeling purposes, including the development of his formula for growth in expense levels. However Mr. Fenrick applies his growth rate formula to all A&G expenses including pensions and benefits for the purpose of developing his

expectation of the AIUs' 2008 A&G expenses. This approach effectively assumes that pension and benefit costs, a significant contributor to A&G expenses over which Mr. Fenrick appears to concede utilities have little control,[21] grow at exactly the rate of all other A&G expenses.

VIII. EXAMPLES FROM OTHER JURISDICTIONS DO NOT SUPPORT MR. FENRICK'S APPROACH

Q. At page 7 of his testimony, Mr. Fenrick cites benchmarking studies that have been presented in certain other jurisdictions to support his approach here.[22] Do you agree that the examples he cites support his approach in this proceeding?

A. No. The econometric benchmarking studies that Mr. Fenrick cites were performed by his former employer, Pacific Economics Group, with Mr. Fenrick's apparent participation. This is hardly an indicator of independent validation of Mr. Fenrick's approach. Moreover, the studies Mr. Fenrick references examine total costs, rather than the "micro" or intermediate expenses that he has examined. These studies also do not use the flawed business condition metrics, such as "percent undergrounding" based on plant in service, or "percent forested," that Mr. Fenrick uses in this case.

IX. CONCLUSION

Q. Dr. Sosa, does this conclude your rebuttal testimony?

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[21] For the years 2005-2007 for the AIU companies, pension and benefit expenses represented 20 percent on average (and up to 30 percent for Ameren CILCO) of total A&G expenses.

[22] "In 2009, Florida Power & Light and Oklahoma Gas & Electric each sponsored benchmarking testimony to display superior cost performance relative to the industry. In the early 2000's Ameren Corporation's Missouri utility, AmerenUE, filed benchmarking testimony defending the cost performance of its Missouri electric operations." Fenrick, Steve, "Direct Testimony on Behalf of the Citizens Utility Board and the People of the State of Illinois" September 28, 2009, CUB-AG Ex. 1.0 p. 7. The Florida Power & Light study used a peer group benchmark while the Oklahoma Gas & Electric study included both a peer group benchmark and an econometrically determined benchmark.

A. Yes, it does.

APPENDIX

STATEMENT OF QUALIFICATIONS

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Dr. Sosa specializes in the application of economic principles to public policy and market questions, primarily in the electric utility and telecommunications industries. He has participated in numerous projects addressing economic issues before the Federal Communications Commission, the U.S. Department of Justice, the Federal Energy Regulatory Commission ("FERC"), state regulatory commissions, and federal and state courts. Dr. Sosa has filed expert testimony before the Nevada Public Utilities Commission, FERC, the Florida Public Service Commission, and the federal courts.

Prior to joining Analysis Group, Dr. Sosa consulted to the California Energy Commission and Telcordia. He also taught financial management and microeconomics for several years at the University of California, Davis.

EDUCATION

Ph.D. in Agricultural & Resource Economics, University of California, Davis.
Henry A. Jastro Graduate Fellow.
Dissertation: *Market Failure in Standard Setting: The Case of AM Stereo.*

M.S. in Agricultural & Resource Economics, University of California, Davis.

DEUG in Economics, Université de Grenoble, France.

B.S., Bucknell University.

PROFESSIONAL ASSOCIATIONS

American Economic Association

Federal Communications Bar Association

EXPERT DESIGNATION, TESTIMONY AND REPORTS

May 2008	Direct and rebuttal testimony at hearing on behalf of Sierra Pacific Power Company before the Public Utilities Commission of Nevada, *Docket No. 07-12001* (revenue requirements phase).
May 2008	Pre-filed rebuttal testimony on behalf of Sierra Pacific Power Company before the Public Utilities Commission of Nevada, *Docket No. 07-12001* (revenue requirements phase).
April 2008	Direct and rebuttal testimony at hearing on behalf of Sierra Pacific Power Company before the Public Utilities Commission of Nevada, *Docket No. 07-12001* (cost of capital phase).
April 2008	Pre-filed rebuttal testimony on behalf of Sierra Pacific Power Company before the Public Utilities Commission of Nevada, *Docket No. 07-12001* (cost of capital phase).
December 2007	Pre-filed direct testimony on behalf of Sierra Pacific Power Company before the Public Utilities Commission of Nevada, *Docket No. 07-12001*.
November 2006	Pre-filed direct testimony on behalf of Nevada Power Company before the Public Utilities Commission of Nevada, *Docket No. 06-11022.*
March 2006	Direct and rebuttal testimony at hearing on behalf of Sierra Pacific Power Company (Electric and Gas) before the Public Utilities Commission of Nevada, *Docket Nos. 05-10003 and 05-10005.*
March 2006	Pre-filed rebuttal testimony on behalf of Sierra Pacific Power Company (Electric and Gas), *Docket Nos. 05-10003 and 05-10005.*
October 2005	Pre-filed direct testimony on behalf of Sierra Pacific Power Company (Electric and Gas), *Docket Nos. 05-10003 and 05-10005.*
May 2005	Declaration in *International Equity Investments, Inc., et. al. v. Opportunity Equity Partners, Ltd., et. al. 05 Civ. 2745 (Lak).*
April 2001	Declaration in *MCI Telecommunications Corporation v. US West Communications, Inc.*
November 2000	Testimony at hearing in *Rogers v. Reliable Building Maintenance*, before the Workers' Compensation Appeals Board, State of California.
August 2000	Affidavit on behalf of American Electric Power Marketing, Inc. before the Federal Energy Regulatory Commission, *Docket No. ER96-2495.*

March 2000 Pre-filed direct testimony on behalf of Florida Power & Light Company before the Florida Public Service Commission, *Docket No. 991462-EU.*

PUBLICATIONS

"Regulatory Issues in Deploying Wireless VoIP," *Connections* (June 16, 2005).

Telecom Antitrust Handbook, contributing author (Chicago: American Bar Association, 2005).

"Look to Markets for Next-Gen Success," *Wireless Internet Magazine* (September/October 2001).

"The Economic Impact of Allowing Local Telephone Companies to Enter Long Distance Voice and Data Markets," *Arizona Issue Analysis* (Goldwater Institute, 2001).

"The Evolving Competitive Landscape in Wireless Internet Markets, Wireless Agenda 2001: Conference Proceedings (Washington, D.C.: Cellular Telecommunications & Internet Association, 2001).

"Revisiting the AM Stereo Proceeding: The Wisdom of the 'Marketplace' Decision," in Telephony, the Internet, and the Media (New Jersey: Lawrence Erlbaum Associates, 1998).

"'Chilling' the Internet? Lessons from FCC Regulation of Radio Broadcasting," (with Thomas W. Hazlett), *Michigan Telecommunications & Technology Law Revie*w, vol. 4 (September 25, 1997).

"Was the Fairness Doctrine a 'Chilling Effect'? Evidence from the Postderegulation Radio Market," (with Thomas W. Hazlett) *Journal of Legal Studie*s, vol. 24 (January 1997) pp. 307-329.

PRESENTATIONS

"Commodities, Capex and the Environment: A Looming Cost Recovery Problem for Utilities," State Capital Law Group, Annual Meeting, San Francisco, California, October 3, 2008.

"How to Use Economic and Financial Forecasts Effectively," presented at teleconference hosted by Lorman Education Services, March 13, 2008.

"Forecasting on Trial: Litigation Case Studies," presented at a continuing education forum for attorneys sponsored by Analysis Group, Los Angeles, California, February 20, 2008.

"IP Litigation at the International Trade Commission: The Role of Economic Analysis," presented at a continuing education forum for attorneys sponsored by Analysis Group, San Francisco, California, November 28, 2007.

"Forecasting on Trial: Litigation Case Studies," presentation to the California Society of CPAs, Litigation Section Steering Committee, San Jose, California, October 24, 2007.

"Using a Forecast to Calculate Damages," presented at a continuing education forum for attorneys sponsored by Analysis Group, San Francisco, California, June 12, 2007.

"Telecommunications Convergence: Are We There Yet?" Conference of California Public Utility Counsel, Annual Meeting, Napa, California, October 2005.

"Federal Regulation of Wireless Broadband," Regulatory and Business Issues for New Broadband Services, San Francisco, California, September 2005.

"VoIP over Wireless Broadband: Some Business Implications of Regulation," 7th Annual Broadband Wireless World, Las Vegas, Nevada, April 2005.

"Managing Capital to Survive the 'Telecom Recession,'" PCIA GlobalXChange 2001, Los Angeles, California, September 2001.

"The Future of Wireless Internet," Federal Communications Bar Association Seminar West, Monterey, California, August 2001.

"The Evolving Competitive Landscape in Wireless Internet Markets," Presented at the Cellular Telecommunications & Internet Association's Wireless Agenda 2001, Dallas, Texas, May 2001.

"Competition in Wireless Markets: Implications for Voice and Broadband Services," Presented at the Analysis Group/Economics Seminar Series: Regulation, Competition and the Emergence of Broadband Communications Markets, Menlo Park and San Francisco, California, and Washington, D.C., April and May 2001.

"Wireless Internet: Regulatory and Market Developments," Federal Communications Bar Association Panel Discussion, San Francisco, California, March 2001.

"Wireless: The Commoditization of Telecom Continues," Seattle Wireless Interest Group, Bellevue, Washington, February 2001.

"Explaining Merger Benefits in Newly Deregulated Network Industries," Advanced Workshop in Regulation and Competition, 13th Annual Western Conference, Monterrey, California, July 2000.

"Revisiting the AM Stereo Proceeding: The Wisdom of the 'Marketplace' Decision," 25th Annual Telecommunications Policy Research Conference, Alexandria, Virginia, September 1997.

"Consumer Demand and Technical Standards Setting: The Case of AM Stereo," Berkeley Symposium on Policy and Strategy for Converging Information Industries, Haas School of Business, University of California at Berkeley, June 1997

"The Impact of Radio Deregulation on Format Diversity and Informational Programming," Southern Economic Association Meetings, New Orleans, Louisiana, November 1995.