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Issues Pricing for Off-System Sales,
Off-System Sales
Uncertainty/Volatility
Witness Shawn Schukar
Sponsoring Party Union Electric Company
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2008-0318

DIRECT TESTIMONY

OF

SHAWN E. SCHUKAR

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AmerenUE

**** DENOTES HIGHLY CONFIDENTIAL INFORMATION ****

St. Louis, Missouri
April, 2008

Ameren UE Exhibit No. 27NP
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Date 12-12-08 Rptr KF

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1 DIRECT TESTIMONY

2 OF

3 SHAWN E. SCHUKAR

4
5 CASE NO. ER-2008-_____

6 I. INTRODUCTION

7 Q. Please state your name and business address.

8 A Shawn E Schukar, One Ameren Plaza, 1901 Chouteau Avenue, St Louis,
9 Missouri 63103

10 Q. What is your current position and what are your responsibilities relating
11 to off-system sales for AmerenUE?

12 A Effective January 1, 2008, I became Vice President, Strategic Initiatives, for
13 Ameren Services Company ("Ameren Services") In that capacity, I am responsible for the
14 coordination of policy related activities associated with climate, Regional Transmission
15 Organizations ("RTOs"), including the operation of RTO energy markets, and other strategic
16 activities Prior to becoming Vice President, Strategic Initiatives, I was the Vice President of
17 Ameren Energy, Inc In that role I was responsible for the unit dispatch, energy trading, and
18 wholesale marketing associated with Union Electric Company d/b/a AmerenUE's
19 ("AmerenUE" or "Company") generating units As part of these responsibilities, I managed
20 AmerenUE's off-system sales

21 Q. What is Ameren Services?

22 A Ameren Services provides various corporate, administrative and technical
23 support services for Ameren Corporation ("Ameren") and its affiliates, including AmerenUE
24 Part of that work as it relates to my position is consulting for AmerenUE with respect to its

1 off-system sales, which are largely made into the Day 2 Energy Markets operated by the
2 Midwest Independent Transmission System Operator, Inc (“MISO”), which is the RTO in
3 which AmerenUE participates

4 **Q. Please describe your educational background and work experience.**

5 A I received a Bachelor’s degree in Mechanical Engineering from the University
6 of Illinois in 1984 and a Master’s of Business degree from the University of Illinois in 2001
7 I joined Illinois Power Company (“Illinois Power”) in 1984 as a power plant engineer I
8 subsequently held several power plant positions from 1986 through 1996, including positions
9 in plant performance management, plant operations management, and plant engineering
10 management In 1996 I became responsible for the generation control function, which
11 included the dispatch and short-term energy sales associated with the Illinois Power control
12 area I was responsible for generation control, energy trading and energy marketing from
13 1997 through 1999 I then managed the retail pricing and risk management portions of the
14 business from 1999 through 2000, and transmission operations from 2000 through 2001 I
15 was responsible for the transmission, generation dispatch and gas control functions at Illinois
16 Power from 2001 through 2004 In 2004, I became responsible for the Illinois Power field
17 operations and continued with that responsibility after Ameren’s acquisition of Illinois Power
18 until 2005 In 2005, I became responsible for the short-term management of the generation
19 included in the now-terminated Joint Dispatch Agreement (“JDA”) In 2007, after the JDA
20 was terminated, I became responsible for the dispatch, load management, energy trading, and
21 wholesale energy marketing associated with AmerenUE’s generating units As noted above,
22 in January 2008, I became the Vice President, Strategic Initiatives for Ameren Services

1 **II. PURPOSE AND SUMMARY OF TESTIMONY**

2 **Q. What is the purpose of your direct testimony in this proceeding?**

3 A I am providing testimony in support of the level of off-system sales in the cost
4 of service utilized for the purpose of setting AmerenUE's rates. I also address the volatility
5 of off-system sales due to uncertainty in energy prices, generation performance, and rate
6 regulated load.

7 **Q. Please summarize your testimony and conclusions.**

8 A My testimony addresses the following issues:

9 1 AmerenUE's opportunities to realize off-system sales are greatly dependent
10 on and limited by its load serving obligations, the availability of its generation resources, and
11 the cost of its generating resources relative to the market prices for energy. To the extent the
12 test year is not representative of normal conditions or does not reflect known and measurable
13 changes, adjustments must be made. In this particular case, such adjustments include,
14 (i) weather normalization of load, (ii) normalization of generation outages, (iii) annualized
15 increases in AmerenUE coal and coal transportation costs based on price changes occurring
16 during the test year (specifically, effective January 1, 2008), (iv) normalized electricity
17 prices, and (v) the impact associated with the unavailability of the Company's Taum Sauk
18 facility.

19 2 AmerenUE incorporated all of these adjustments in its PROSYM production
20 cost model (the operation of which is addressed in the direct testimony of AmerenUE witness
21 Timothy D. Finnell) to determine the normalized level of off-system sales to include in the
22 determination of the Company's revenue requirement. Using the results obtained from the
23 operation of this model, I have determined that the appropriate level of normalized off-

1 system sales revenues to use in determining the revenue requirement is \$454.3 million
2 (These off-system sales revenues cover fuel costs associated with off-system sales and, in
3 addition, reduce the Company's revenue requirement by virtue of the profits or margins made
4 on these sales.)

5 3 AmerenUE is exposed to significant uncertainty associated with the level of
6 off-system sales revenues as a result of (i) native load variability, (ii) generation performance
7 and unplanned outages, and (iii) market price volatility

8 An executive summary of my testimony is contained in Attachment A

9 **III. TEST YEAR OFF-SYSTEM SALES**

10 **Q. What are off-system sales?**

11 A Off-system sales are sales of energy, capacity, and ancillary services to
12 customers other than Missouri retail customers and certain Missouri wholesale customers

13 **Q. Have you determined the appropriate level of off-system sales to include**
14 **in AmerenUE's revenue requirement?**

15 A Yes, I have

16 **Q. Please indicate the level of off-system sales revenues that you have**
17 **determined is appropriate to include in AmerenUE's revenue requirement.**

18 A I have determined that the normalized level of AmerenUE off-system sales
19 revenues for inclusion in AmerenUE's revenue requirement in this case is \$454.3 million per
20 year. This includes \$443.2 million per year for energy sales, \$7.6 million per year for
21 capacity sales, and \$3.5 million per year for ancillary services sales. This determination is
22 based on normalization of test year data adjusted for known and measurable changes through
23 June 2008.

1 **Q. How did you determine the normalized off-system sales for the test year?**

2 A The normalized off-system sales of energy were determined by utilizing the
3 Company's PROSYM production cost model (discussed in detail in the direct testimony of
4 Mr Finnell) with inputs including weather normalized loads, normalized generation outages,
5 and normalized gas and electric prices. The fuel cost inputs to the model were also adjusted
6 for known and measurable changes associated with fuel and transportation contracts and for
7 the Company's previous commitment to hold ratepayers harmless of the unavailability of the
8 Taum Sauk Plant. The off-system sales associated with capacity were based on test year
9 capacity sales, adjusted for estimated lost capacity sales opportunities as a result of the
10 unavailability of the Taum Sauk Plant. Finally, the off-system sales associated with ancillary
11 services were determined based on the test year ancillary services transactions adjusted for
12 known and measurable changes in ancillary services contracts.

13 **Q. Why was the normalized level of off-system sales of energy determined by**
14 **modeling rather than utilizing actual test year off-system sales?**

15 A The amount of off-system sales of energy is determined from the amount of
16 generation that is available to produce energy and the portion of the generation that is utilized
17 by the load. Because load is adjusted to reflect normal weather in determining the
18 Company's revenue requirement and because the level of generation available for off-system
19 sales must reflect that load and also be adjusted to account for the unavailability of the Taum
20 Sauk Plant, it is necessary to model the overall system to identify the appropriate off-system
21 sales to use in setting the Company's revenue requirement. In order to assure that off-system
22 sales utilized to determine the cost of service are consistent with normalized conditions, it is
23 necessary to determine the off-system sales based on production cost modeling using

1 normalized loads and generation rather than relying on actual test year off-system sales data
2 If actual off-system sales data were utilized, the off-system sales would not be consistent
3 with the load and generation that are utilized to determine the revenue requirement. For
4 instance, if the weather conditions for a given test year were such that actual load was greater
5 than the amount of weather normalized load utilized to determine the revenue requirement,
6 the actual load would result in a reduction in the total volume of off-system sales and the
7 amount of off-system sales revenues would be expected to be understated relative to the
8 normalized load utilized to determine rates.

9 Additionally, in order to ensure ratepayers are not impacted by the failure of
10 the Taum Sauk Plant, it is necessary to model the overall system including Taum Sauk
11 generation that was unavailable during the test year. Inclusion of Taum Sauk generation with
12 normalized generation outages, weather normalized loads, normalized fuel costs, and
13 normalized market prices provides the appropriate level of off-system sales for the test year,
14 recognizing the impact of the unavailability of the Taum Sauk Plant.

15 **Q. What were the adjustments for known and measurable changes to the**
16 **inputs to the PROSYM production cost modeling that you provided to Mr. Finnell in**
17 **order to determine the appropriate level of off-system sales?**

18 A. I provided Mr. Finnell with forward energy sales volumes that have already
19 been made for 2008 to reduce the volatility in the price received for off-system sales for
20 future periods. Forward energy sales are contracted for sales for delivery of energy at a
21 specified time or period, in this case during 2008. I also provided Mr. Finnell the sale
22 (contract) price for these sales, which was adjusted for the basis differential between the
23 location of the sale and the location of the generating unit that was expected to supply the

1 power for the sale. The inclusion of the forward sales results in some of the energy sales
2 within the model being sold at the forward (contract) prices, adjusted for basis differentials,
3 rather than at the market prices that were used for modeling spot (short-term) sales. The
4 forward sales are made in an effort to mitigate the exposure of AmerenUE and its customers
5 to energy price volatility.

6 **Q. What are the levels of capacity and ancillary services sales that you**
7 **determined was appropriate to include in total off-system sales?**

8 A. The amount of capacity sales and ancillary services sales recognized in 2007
9 and adjusted for known and measurable changes through June 2008 was \$7.6 million and
10 \$3.5 million, respectively.

11 **Q. Can you explain the adjustments that were made to determine the**
12 **appropriate amount of capacity and ancillary services sales?**

13 A. Yes. In the first instance, the outage of the Taum Sauk Plant during the test
14 year period as a result of the facility failure resulted in a lost opportunity to sell capacity. I
15 reflected this by adding \$2.4 million to the capacity sales to recognize the lost opportunity.
16 The addition of \$2.4 million to the \$5.2 million of recognized capacity sales adjusted for
17 known sales through June 2008 results in total capacity sales of \$7.6 million. This level of
18 capacity sales was added to the modeled off-system energy sales revenues to recognize both
19 actual test year capacity sales and the estimated additional capacity sales that could have
20 been made if the Taum Sauk facility had been available.

21 Secondly, the amount of ancillary services sales that was recognized during
22 the test year was based on a sale of ancillary services to the Illinois operating utilities owned
23 by Ameren during the interim period prior to the start of the MISO ancillary services market.

1 The total revenues received from ancillary services sales, as adjusted for known sales through
2 June 2008, was \$13.8 million, which is comprised of \$10.3 million of opportunity associated
3 with energy sales and \$3.5 million for the "reservation fee" associated with holding back the
4 capacity for ancillary services. The production cost model that was utilized to determine the
5 amount of off-system energy sales did not reserve or hold back any unit capability associated
6 with the sale of ancillary services. Since the model did not hold back any unit capability for
7 the sales of ancillary services, the portion of the ancillary services sales associated with
8 energy sales opportunity is already recognized in the off-system energy sales determined in
9 the PROSYM production cost model. Thus, the only portion of the ancillary services sales
10 that was not recognized in the off-system energy sales was the \$3.5 million "reservation fee"
11 which has been added to the total off-system energy sales calculated by the PROSYM
12 production cost model.

13 **Q. How were the capacity sales opportunities associated with the**
14 **unavailability of the Taum Sauk Plant determined?**

15 **A.** If the Taum Sauk Plant had not failed, the capacity associated with the facility
16 would have been available for sale during the whole test year period. However, there was
17 also capacity available from other units during the test year. The only time when there would
18 have been an opportunity for incremental capacity sales (assuming the Taum Sauk Plant was
19 available) was during those periods when AmerenUE had sold all of the excess capacity from
20 the other AmerenUE generating units. The only period of time that AmerenUE sold all of
21 the available excess capacity was during the summer months of July and August. Based on
22 the market price of capacity for that period of approximately \$2.75 per kilowatt (kW)-month,
23 the additional capacity revenue that AmerenUE could have achieved from sales of Taum

1 Sauk capacity was 440 megawatts ("MW") multiplied by the \$2 75 per kW-month for the
2 2 month period This results in \$2 4 million which was added to the actual capacity sales

3 **IV. METHODOLOGY USED TO DETERMINE TEST YEAR OFF-SYSTEM**
4 **SALES OF ENERGY**
5

6 **Q. What production cost model was used to calculate a normalized level of**
7 **off-system sales of energy utilized to set AmerenUE's revenue requirement in this case?**

8 A The \$443 million in annual off-system sales of energy was derived from the
9 same PROSYM model run that was used to determine the normalized production costs
10 utilized by AmerenUE witness Gary S Weiss in calculating AmerenUE's revenue
11 requirement The PROSYM model incorporates load requirements, generation and
12 generation availability, any existing wholesale sales, and hourly market prices As discussed
13 in detail in Mr Finnell's direct testimony, PROSYM is a production cost model that
14 simulates the dispatch of the AmerenUE generation fleet to supply existing commitments
15 including native load and wholesale sales, while buying or selling energy economically As
16 Mr Finnell explains, the model has been calibrated against historical information to ensure
17 that the model accurately reflects the AmerenUE system and economic opportunities
18 associated with the dispatch of the system Mr Finnell's direct testimony demonstrates a
19 very accurate match between modeled results and actual results, validating the use of the
20 model for determining normalized off-system sales

21 **Q. How are off-system sales of energy derived from the PROSYM output?**

22 A PROSYM simulates the dispatch of AmerenUE's system by utilizing the
23 lowest cost resources to meet the hourly load and operating reserves requirements As part of
24 its hourly dispatch, the model identifies opportunities for off-system sales based on the
25 generation that is not being utilized to serve native load that has dispatch costs below the

1 hourly market price. The model also identifies opportunities to buy from the market to
2 reduce the cost to serve native load and offset AmerenUE's generation costs. The simulated
3 off-system sales are determined based on the hourly market price achieved for the megawatt-
4 hours ("MWh") that are sold to the market.

5 **Q. What are the major inputs and assumptions included in the PROSYM**
6 **model run?**

7 A As discussed in more detail by Mr. Finnell, the major inputs include
8 AmerenUE's hourly loads, unit operating characteristics, fuel and emission costs, variable
9 operation and maintenance costs, and hourly market prices for purchases and sales.

10 **Q. Do the inputs and assumptions reflect actual conditions for the test year?**

11 A The inputs are based on test year conditions with adjustments for known and
12 measurable changes and normalization of loads, generation outages, and market prices, as
13 necessary. The inputs also incorporate the Taum Sauk Plant as if it were available for the test
14 year.

15 **Q. Please describe these inputs and how you made adjustments to test year**
16 **conditions.**

17 A I will first explain the market price of energy that I recommended be used to
18 determine the off-system sales and economic purchases cost. I will also explain how fuel and
19 emission costs that were used to dispatch the system were adjusted to be consistent with the
20 market price of energy.

21 **Q. What market prices for energy were utilized to determine the off-system**
22 **sales and economic purchases?**

1 A Normalized market prices were determined based on a two-year average of
2 prices for each month during the period from January 2006 through December 2007. The
3 average market price for that period of time was \$40.47 per MWh.

4 **Q. Why did you normalize the actual test year market prices for the**
5 **determination of off-system sales of energy?**

6 A Since the PROSYM model used weather normalized load and normalized unit
7 performance, it is appropriate to determine test year market prices that are also normalized.
8 If the prices are not normalized for weather and outages, there is a risk that the use of actual
9 off-system sales of energy will not appropriately reflect a normal year.

10 **Q. Please explain how you normalized the market price for the test year.**

11 A I used a two-year weighted average of the locational marginal prices
12 (“LMPs”) at the generator nodes that are associated with off-system sales. LMPs are the
13 prices paid at specific locations within the MISO energy market. The weighted LMPs are
14 determined by multiplying the LMP at each of the generating units by the following weights:

15	Labadie	28%
16	Sioux	17%
17	Meramec	19%
18	Rush Island	29%
19	CTGs	7%

20 This weighting was determined by identifying the AmerenUE generators whose cost was
21 assigned to the actual off-system made during 2007. This weighting ensures that the prices
22 utilized to determine the off-system sales of energy are consistent with the price that would
23 be expected to be recognized when energy sales are made.

1 **Q. Please explain why you chose to utilize a two-year average of the LMPs at**
2 **the generator nodes referenced in the previous question.**

3 A As explained in my answer to the previous question, the utilization of the
4 weighted average of the LMPs at the generation nodes addresses the need to recognize where
5 off-system sales are expected to be made with normalized loads and generation performance
6 However, the weighted averages do not address the impact that generation outages and
7 weather patterns would have on the LMPs for any specific year By utilizing more than one
8 year of LMPs, the impact of weather within the MISO footprint for each month of the year
9 can be averaged to minimize the impacts of warmer than normal or cooler than normal
10 conditions on energy prices within the MISO footprint Schedule SES-EI provides an
11 example of how averaging two years of actual weather at the most significant load centers
12 within the MISO's footprint achieves weather measures that are closer to normal than using
13 just one year of actual weather

14 It is also important that the averaging of the temperatures occur on a monthly
15 basis because of the different effects that warmer (or cooler) weather can have on different
16 periods of the year For example, everything else held constant, LMPs would be expected to
17 be lower if January temperatures are warmer than normal, but higher if August temperatures
18 are warmer than normal As a result of this impact, I asked Mr Finnell to utilize the monthly
19 average price distribution across the 2006 - 2007 period

20 Finally, the use of more than one year provides an averaging effect associated
21 with the impact of generation and transmission system outages Transmission and generation
22 outages can impact the congestion component of the LMPs at the AmerenUE generation
23 nodes By utilizing more than one year of price data, unusual effects of transmission and

1 generation outages in any given year on the AmerenUE generator node LMPs (both positive
2 and negative) can be limited

3 **Q. Why have you not used an average over more than two years?**

4 A I did not average more than 2006 and 2007 because market conditions prior to
5 2006 were highly unusual and in my opinion not representative of normalized market
6 conditions This was particularly true in 2005, when disruptions in coal transportation, the
7 effects of Hurricanes Dennis and Katrina, and the start-up of the MISO's energy markets
8 created highly unusual market conditions

9 **Q. How did you apply the two years of price data to your simulation of the**
10 **normalized test year in PROSYM?**

11 A Prices for each month were set to the average of the two prices in the
12 corresponding months during the period January 2006 through December 2007 For
13 example, the October prices were set at the average of the October 2006 and October 2007
14 prices

15 **Q. What spot-market fuel and emission costs were utilized to determine the**
16 **dispatch of AmerenUE's generating units in the PROSYM model?**

17 A The period used to determine the "dispatch costs" of each generating unit was
18 consistent with the period used to determine the adjusted market prices for power This
19 consistency is necessary because the generating dispatch of AmerenUE and the other market
20 participants depend on both market prices for power and the dispatch price (i e , cost of
21 incremental fuel usage and emissions allowances) For the purpose of modeling the dispatch
22 of the AmerenUE system, the input market prices of coal, gas, emissions, and wholesale
23 energy consequently need to be consistent

1 **Q. What AmerenUE fuel costs were used to calculate the costs of off-system**
2 **sales?**

3 A AmerenUE's coal and nuclear costs were based on the known costs associated
4 with already executed fuel contracts with prices that were effective January 2008
5 AmerenUE's fuel costs for natural gas are based on the actual prices paid for natural gas
6 during the same period of time as the market prices to maintain the consistency noted
7 previously

8 **V. OFF-SYSTEM SALES VOLATILITY AND UNCERTAINTY**

9 **Q. Are AmerenUE's off-system sales uncertain and volatile?**

10 A Yes

11 **Q. Please explain why AmerenUE's off-system sales are uncertain and**
12 **volatile.**

13 A The level of AmerenUE's off-system sales is a function of the amount of
14 available AmerenUE generation that is in excess of that required to serve the AmerenUE
15 native load and the market price of energy at the time that the excess generation is available
16 for sale. The variability inherent in generation availability, native load, and market prices
17 can cause the amount and value of off-system sales to vary significantly from one period to
18 another, both on a short-term and a long-term basis.

19 When off-system sales are determined by modeling, the calculated level of
20 off-system sales is determined from inputs of generation availability or unplanned outage
21 rates, native or retail load levels, and market prices, among other factors. As I will illustrate,
22 differences between the actual level and the modeled level of each one of these variables can

1 create a significant difference between the amount of off-system sales actually achieved and
2 the modeled level of off-system sales

3 The actual native loads for AmerenUE vary as a result of changes in weather
4 and load growth. Schedule SES-E2 shows the actual AmerenUE native load versus the
5 projected weather-normalized loads for the last 9 years. In this illustration, the range of
6 variation between actual and projected weather normalized loads, which is primarily weather
7 related, for the nine-year period was 4.1% (from -1.4% to +2.7%). Based on 41,080,000
8 MWh of retail load and an average normalized market price of \$40.47, the impact of retail
9 load uncertainty can affect the level of off-system sales by an estimated \$68.2 million from
10 year to year.

11 Unplanned generation outages can also cause significant additional
12 uncertainty in off-system sales. The generation equivalent normalized unplanned outage rate
13 utilized for modeling purposes is 8.1%, which is the average for the six-year period 2002
14 through 2007. During this period the generation equivalent unplanned outage rate ranged by
15 6%, from 5.6% to 11.6%. See Schedule SES-E2. Based on the generation output level of
16 49.8 million MWh, this 6% range in plant availability alone results in an off-system sales
17 uncertainty of 2,988,000 MWh or \$120.9 million a year.

18 In addition, the timing associated with unplanned generation outages can have
19 a significant effect on off-system sales. A two-week unplanned outage of a 600 MW unit in
20 February rather than March would reduce the off-system sales by over \$1 million based on
21 the prices utilized in the model. Thus, the timing of generation outages, if different than
22 modeled, can also result in significant changes to the level of off-system sales.

1 Finally, market price uncertainty has a significant impact on off-system sales
2 The expected level of off-system sales is approximately 10.5 million MWh annually. Thus,
3 each \$1.00 change in market prices for energy causes off-system sales revenues to vary by
4 approximately \$10.5 million. Schedule SES-E3 shows the variability in the forward around-
5 the-clock ("ATC") market price at the Cnergy hub for delivery in calendar year 2007, as
6 quoted during 2006. As can be seen from the graph, the forward market price for 2007
7 ranged from a low of \$39.21 per MWh to a high of \$69.07 per MWh, for a total high-low
8 range of \$29.86 per MWh. Even if the price spike in January 2006 was ignored, there is still
9 a \$15.82 per MWh difference between the high and the low forward ATC prices for calendar
10 year 2007. This illustrates that if AmerenUE were able to sell half of the generation
11 available for off-system sales into the forward market, based on just these difference in the
12 prices of forward sales and total off-system sales of approximately 10.5 million MWh, the
13 off-system sales revenue uncertainty from such forward sales could vary from between \$83
14 million (at the \$15.82 per MWh forward price range) to \$157 million (at the \$29.86 per
15 MWh forward price range).

16 Similar off-system sales revenue uncertainty results from uncertainty in spot
17 market prices. Schedule SES-E4 shows the 12-month rolling average of the day-ahead LMPs
18 at the AmerenUE coal fired generating plants. This represents the change in prices that
19 AmerenUE would be exposed to if the plants were able to sell all of their MWhs at the day-
20 ahead LMP. As can be seen, the 12-month rolling average LMP at the AmerenUE coal fired
21 plants (as calculated beginning 12 months from the start of the MISO energy market), has
22 varied \$9.91 per MWh from a low of \$38.27 per MWh to a high of \$48.18 per MWh. Selling
23 the approximately 10.5 million MWh of off-system sales into the day-ahead market, given

1 this uncertainty in the 12-month average of the day ahead market prices, exposes AmerenUE
2 to off-system sales revenue uncertainty of \$104 million

3 As can be seen from these illustrations, AmerenUE is exposed to a significant
4 amount of uncertainty and volatility in the level of off-system sales as a result of price
5 volatility, generation performance, and native load variability

6 This significant uncertainty and volatility in off-system sales revenues is
7 summarized in the following table

Uncertainty Factor	Annual Uncertainty of Off-System Sales Revenues
(1) Retail load	\$68 million
(2) Unplanned Generation outages	\$120 million
(3a) Forward market prices	\$83 - \$157 million
(3b) Spot market prices	\$104 million

8

9 **Q. Please identify other areas that also affect the uncertainty and volatility**
10 **of off-system sales.**

11 A One other area that can affect the level of off-system sales and costs
12 experienced by AmerenUE are system operations Generation and transmission outages
13 within the MISO footprint can cause congestion on the system that either lowers or raises the
14 LMPs at the AmerenUE generators and at the point of delivery for off-system sales As was
15 shown earlier, LMP or price differences can have a significant impact on AmerenUE's off-
16 system sales System operations may also dictate that AmerenUE units are brought on to
17 meet the requirements of the MISO to manage congestion and ramping requirements The
18 operation of these units may be a result of the Reliability Assessment Commitment ("RAC")

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Shawn E Schukar

1 at the MISO. Quite often when a unit is "RAC'd on" (dispatched by the RAC for reliability,
2 not economic, reasons) within MISO, the owner of the unit does not receive enough
3 compensation through the LMP to cover the cost of the unit and MISO provides a payment to
4 the unit's owner to cover the costs. These payments, which are uplifted to deviations in the
5 MISO market and which may include both off-system sales and loads, will further increase
6 the uncertainty in off-system sales revenues beyond the uncertainties I have already
7 discussed above.

8 **Q. Does this conclude your direct testimony?**

9 **A. Yes, it does.**

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Union Electric Company)
d/b/a AmerenUE for Authority to File)
Tariffs Increasing Rates for Electric) Case No. ER-2008-____
Service Provided to Customers in the)
Company's Missouri Service Area.)

AFFIDAVIT OF SHAWN E. SCHUKAR

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Shawn E Schukar, being first duly sworn on his oath, states

1. My name is Shawn E. Schukar. I work in the City of St Louis, Missouri, and I am employed by Ameren Services Company as Vice President, Strategic Initiatives.

2 Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a AmerenUE consisting of 18 pages, Attachment A and Schedules SES-E1 through SES-E4, all of which have been prepared in written form for introduction into evidence in the above-referenced docket

3 I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct



Shawn E Schukar

Subscribed and sworn to before me this 4th day of April, 2008.



Notary Public

My commission expires

Danielle R Moskop
Notary Public - Notary Seal
STATE OF MISSOURI
St Louis County
My Commission Expires July 21, 2009
Commission # 05745027

EXECUTIVE SUMMARY

Shawn E. Schukar

Vice President, Strategic Initiatives, Ameren Services Company

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The purpose of my testimony is to address four areas relating to off-system sales revenues 1) a determination of the normalized level of off-system sales that is appropriate to utilize for the determination of the Company's revenue requirement, 2) an explanation of how the level of off-system sales is dependent on the Company's loads, generation availability, and market energy prices, 3) an explanation of why it is appropriate to determine off-system sales revenues through the use of the PROSYM production cost model, and 4) documenting the significant uncertainty in the level of off-system sales revenues

The appropriate level of off-system sales revenues to utilize in the determination of AmerenUE's revenue requirement is \$454.3 million per year, which includes \$443.2 million per year of off-system energy sales, \$7.6 million per year of capacity sales, and \$3.5 million per year of ancillary services sales. The energy sales values were determined based on modeling of AmerenUE's weather normalized load, normalized generation unplanned outages, normalized gas and electricity prices, and including the Taum Sauk generation facility as if it remained in service. This is appropriate because it is necessary to align the normalized generation unplanned outages and weather normalized loads that are utilized in determining rates with the level of off-system sales revenues that are used as an offset to the Company's revenue requirement for purposes of setting rates. In addition, to ensure that the customer is not affected by the unavailability of the Taum Sauk generation facility, AmerenUE's costs and revenues were modeled as if the Taum Sauk Plant was available.

This includes an adjustment for capacity sales that could have reasonably been expected to have been made had the Taum Sauk generation facility been available during the test year. In addition, an adjustment to energy sales values was made for forward sales of capacity, energy, and ancillary services that have been made for 2008.

The PROSYM production cost model was used for the determination of the off-system sales energy revenues. The key inputs used in the PROSYM model were normalized hourly loads, unit operating characteristics, fuel and emission costs, variable operation and maintenance costs and hourly market prices. For dispatch purposes, the market prices for normalized off-system sales, consistent with the fuel and emissions costs, are monthly energy prices for the period from January 2006 through December 2007, which results in a normalized average energy price of \$40.47. The use of this two-year weighted average, which is based on the locational marginal prices at the generators that had actually made off-system sales during 2007, is appropriate to ensure consistency with normalized loads and unplanned outages.

The level of off-system sales has a significant amount of uncertainty associated with (1) native load variability (which reduces the amount of generation that is available for sales), (2) generation unplanned outage rates, and (3) market prices for power. Based on historical information associated with native load variability, native load variability can cause approximately \$68 million in uncertainty of off-system sales revenues. Unplanned forced outages for the AmerenUE generating plants historically varied by 6%, from 5.6% and 11.6%. This 6% variability in the unplanned outages at AmerenUE generating plants creates uncertainty in AmerenUE off-system sales revenues of approximately \$121 million. Finally,

the uncertainty in spot and forward market prices for energy creates uncertainty in off-system sale revenues of up to \$157 million

EXHIBIT SES-E1

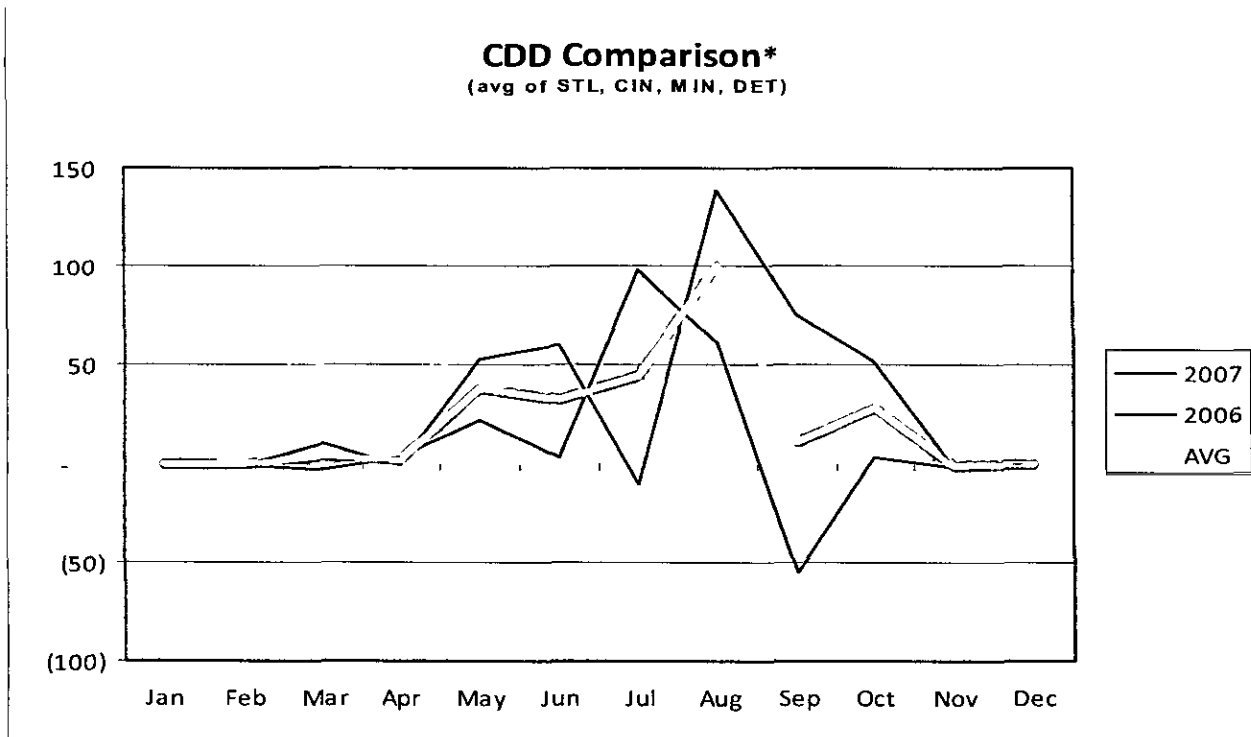
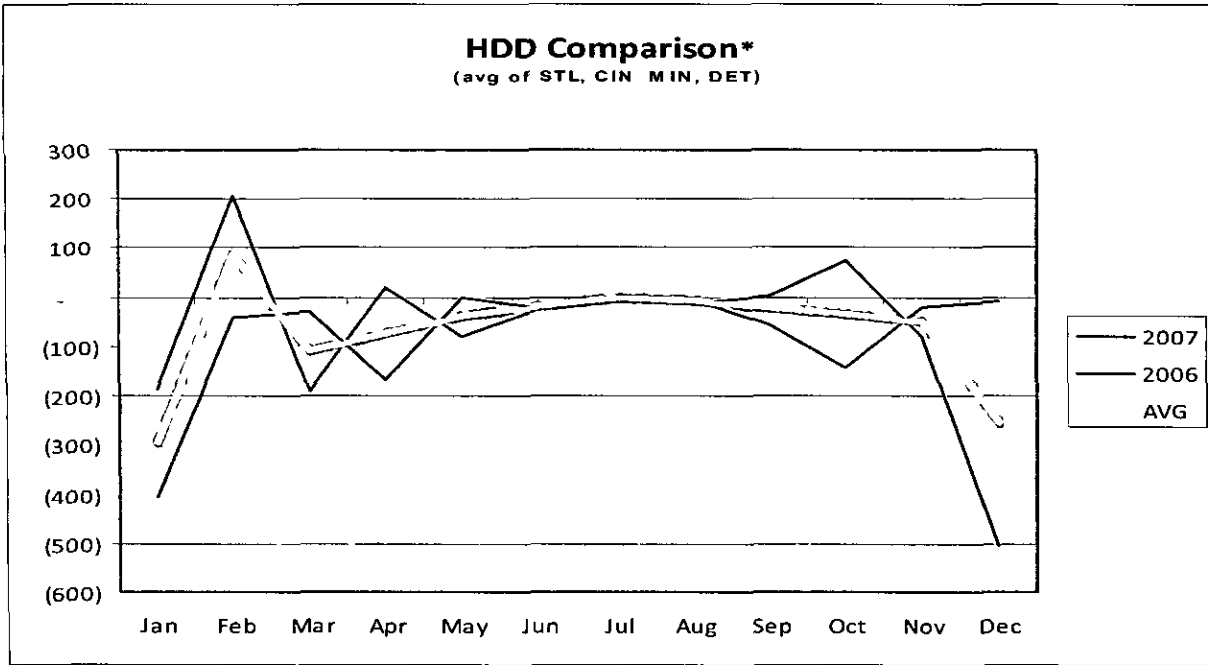


Exhibit SES-E2

Year	% Difference Between Actual Load and Weather Normalized Projected Load
1999	(1.4%)
2000	2.7%
2001	(0.9%)
2002	0.6%
2003	(0.5%)
2004	0.3%
2005	1.8%
2006	(0.4%)
2007	1.3%
Range	(1.4%) – 2.7%

Year	Generation Equivalent Unplanned Outage Rate
2002	11.6%
2003	7.8%
2004	9.2%
2005	5.6%
2006	7.9%
2007	6.7%
Range	5.6% - 11.6%

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Exhibit SES-E3

Exhibit SES-E4

