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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2016-0156

REBUTTAL TESTIMONY

OF

WM. EDWARD BLUNK

ON BEHALF OF

KCP&L GREATER MISSOURI OPERATIONS COMPANY

Kansas City, Missouri
August 2016

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All Such Information Should Be Treated Confidentially
Pursuant To 4 CSR 240-2.135.

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OF

WM. EDWARD BLUNK

Case No. ER-2016-0156

Q: Please state your name and business address.

A: My name is Wm. Edward Blunk. My business address is 1200 Main Street, Kansas City, Missouri 64105.

Q: Are you the same Wm. Edward Blunk who pre-filed Direct Testimony in this matter on behalf of KCP&L Greater Missouri Operations Company ("GMO" or the "Company") for its territories known as St. Joseph Light & Power ("L&P") and Missouri Public Service ("MPS")?

A: Yes.

Q: What is the purpose of your Rebuttal Testimony?

A: My Rebuttal Testimony serves two purposes. First, my Rebuttal Testimony will show that GMO's hedge costs are reasonable and prudent. Second, my Rebuttal Testimony will dispel doubts that may have been sown by the Office of the Public Counsel ("OPC") and Missouri Public Service Commission Staff ("Staff") witnesses regarding GMO's use of natural gas derivatives to hedge natural gas and cross-hedge electricity price risk.

Q: Given that your Rebuttal Testimony focuses on hedging, do you have special experience and expertise with regard to hedging?

A: Yes. While I first became acquainted with hedging in high school, it was my studies in agricultural economics at the University of Missouri that truly introduced me to hedging with futures contracts. That was more than a decade before the NYMEX began trading

natural gas futures. The first futures markets were developed to meet the needs of farmers and agricultural producers, so agriculture has used hedging and similar concepts probably longer than any other industry. I have been involved in hedging coal and coal prices for Kansas City Power & Light Company ("KCP&L") since the early 1980s. I was instrumental in the design and implementation of KCP&L's natural gas hedging program in 2001 and have been involved with its implementation and modifications since then. Following the acquisition of Aquila, Inc., now known as GMO by KCP&L's holding company, Great Plains Energy Incorporated ("GPE"), I have also been instrumental in the design and implementation of GMO's hedging program. Finally, as I mentioned in my Direct Testimony, the Global Association of Risk Professionals has certified me as an Energy Risk Professional.

Q: What is an Energy Risk Professional?

A: Energy Risk Professional ("ERP") is an international designation awarded by the Global Association of Risk Professionals to individuals who work in the oil, coal, natural gas and alternative energy industries. As a certification it is designed to measure and attest to a candidate's knowledge of the major energy markets and gauge their ability to manage the physical and financial risks inherent in the complex world of energy.

Q: Who are the witnesses your Rebuttal Testimony will be addressing?

A: My testimony primarily responds to testimony filed by OPC witnesses John Riley and Charles Hyneman. I also respond to portions of Staff's Revenue Requirement Cost of Service Report ("Report") dealing with hedging. If I refer to OPC, I will be referring to Mr. Riley's testimony. Likewise, if I refer to Staff, I will be referring to Mr. Dana Eaves' testimony as embodied in Staff's Report.

Q: How is your testimony organized?

A: First, I recap the issues from Mr. Riley's and Mr. Hyneman's Direct Testimonies and Staff's Report that I will address. Because Mr. Riley alleges GMO's actions were imprudent, I next discuss my understanding of the Commission's prudence standard. I then use the prudence standard to show how GMO's actions were prudent. Finally, I present my recommendations to the Commission as a result of this case.

I. Summary of Testimony Rebutted

Q: How would you summarize Mr. Riley's allegations regarding GMO's hedging program for purchased power?

A: Mr. Riley alleges that given the implementation of Southwest Power Pool's ("SPP") Integrated Marketplace ("IM") it is imprudent for GMO to continue using natural gas derivatives to cross-hedge power purchases. He asserts that the practice results in unnecessary, unreasonable, and excessive costs which are not prudent given the low-cost and non-volatile natural gas market.

Q: Please identify the points from Mr. Hyneman's Direct Testimony you will be addressing?

A: Mr. Hyneman alleges that GMO's past hedging practices were found imprudent and excessive. He also asserts that the Kansas Corporation Commission ("KCC") has prohibited KCP&L from hedging in its Kansas electric utility service territory.

Q: How would you summarize Staff's allegations regarding GMO's hedging program for purchased power?

A: Staff is not alleging imprudence. Instead, Staff alleges that given SPP's IM and that "natural gas prices have stabilized and are expected to remain stable"[1], GMO's hedging practices no longer provide value to its customers. Staff recommends the Commission order GMO to suspend all of its hedging activities associated with natural gas.

Q: Are either OPC or Staff removing hedging costs from the Company's cost of service or test year dollars?

A: Yes. Staff removed all hedging costs for power and natural gas purchases associated with natural gas derivatives from test year dollars. OPC removed all hedging costs associated with natural gas derivatives but added back a budgeted level of $300,000 of hedging costs for natural gas.

II. Prudence Standard

Q: Given that OPC is charging imprudence, does either Mr. Riley or Mr. Hyneman speak to the Commission's prudence standard regarding the hedging costs they removed from test year dollars?

A: No. While Mr. Riley claims the costs are imprudent, I did not read where either Mr. Riley or Mr. Hyneman addressed the Commission's prudence standard. Staff did not allege that the costs were imprudent. Staff simply removed the test year dollars from permanent rates and the fuel adjustment clause ("FAC") base factor[2] on the grounds those costs were not necessary.

[1] Staff Report, Case No. ER-2016-0156 (July 15, 2016), p. 191.
[2] Staff Adjustment E-47.1, see Staff Report p. 192.

Q: What happens if those historical costs are removed from test year dollars and the FAC base factor?

A: The Company would be denied recovery of presumably prudently incurred costs. Leaving the hedge costs in test year dollars and the FAC base factor will not result in over recovery. If it is decided that hedging is no longer necessary and the Company stops hedging, the FAC would properly reflect the decreasing hedge adjustment as existing hedges expire. Those historical costs should be removed from test year dollars and the FAC base factor only if they are found to be imprudent.

Q: As you understand it, what is the Commission's prudence standard?

A: Although I am not a lawyer, I have reviewed the Commission's statements of the standard, such as on pages 74-77 of the Report and Order in KCP&L's 2010 rate case, Case No. ER-2010-0356 and pages 13-14 of the Report and Order in GMO's Case No. EO-2011-0390. The Commission stated that a utility's costs are presumed to be prudently incurred. That presumption, however, does not survive a showing of inefficiency or improvidence. The reasonableness of the company's conduct is based on information known or knowable at the time a decision was made, and is not based on hindsight. The Commission's responsibility is to determine how reasonable people would have performed the tasks that confronted the company. If a participant in a proceeding creates a serious doubt as to the prudence of an expenditure, then the utility has the burden of dispelling those doubts and proving the questioned expenditure was prudent.

In determining if a company's conduct was imprudent, the Commission looks at whether the utility's conduct was reasonable at the time, under all of the circumstances,

considering that the company had to solve its problem prospectively. The fact that external factors outside the company's control later produce an adverse result does not make a decision imprudent. Moreover, if costs are to be disallowed there must also be a Commission finding of detrimental impact upon customers from the Company's alleged imprudence.

Q: Did either OPC or Staff allege that GMO improperly administered its hedging program or that it was inefficient in its implementation of its hedge program?

A: No. Neither OPC nor Staff charged the Company with inefficiency.

Q: At page 11 of his Direct Testimony, Mr. Hyneman states that GMO's past hedging practices were found to be imprudent and excessive. Have GMO's practices of hedging natural as fuel for electric generation or cross-hedging power purchases with natural gas contracts been found to be imprudent or excessive?

A: No. The Commission has not found GMO's practices of hedging natural gas as fuel for generating electricity or cross-hedging power price risk with natural gas either imprudent or excessive. It appears that Mr. Hyneman is referring to Case No. ER-2007-0004 where as a Staff witness he alleged that Aquila's hedging was imprudent. The issue was settled along with several other issues in a Stipulation and Agreement. There was no finding of imprudence by the Commission. Instead, the Agreement says on page 6, "...Aquila believes that its current hedging practices are prudent...." [3]

[3] Stipulation and Agreement as to Certain Issues, Case No. ER-2007-0004, p. 6

A. At The Time A Decision Was Made

Q: Focusing on the question of improvidence, how can you determine if a company's conduct was reasonable "at the time" a decision was made?

A: The first thing to do is determine when was "at the time" and what were the relevant circumstances.

Q: Why is it important to start with the relevant circumstances "at the time"?

A: Julie Ryan and Julie Lieberman said it well in the February 2012 issue of *Public Utilities Fortnightly*.

> While it's tempting to look at historical hedging based on current information and perfect hindsight, the regulatory standard for what is reasonable and prudent must consider the availability of information and what was known at the time hedging decisions were made.[4]

Implementing a hedge program is much like buying insurance and, as with buying insurance, there is a price to pay for someone else to be responsible for that risk. A hedge program is expected to have a net cost to consumers which makes it vulnerable to *ex post* regulatory review. After the fact second guessing would discourage future hedging.

Q: What "time" do OPC and Staff point to?

A: At page 2, Mr. Riley says, "The purchased power market has changed greatly due to the SPP's Integrated Marketplace and GMO needs to adjust its hedging policies to reflect this change." Staff, likewise at page 190, points to the March 1, 2014, implementation of SPP's IM as a major market change affecting hedging.

[4] "Hedging Under Scrutiny: Planning ahead in a low-cost gas market", Julie Ryan and Julie Lieberman, *Public Utilities Fortnightly*, February 2012, p. 12.

Q: When were the hedges reflected in the test year dollars purchased?

A: Of the 374 hedge contracts reflected in the test year of July 2014 through June 2015, some 224 contracts were purchased before SPP's IM was implemented on March 1, 2014.

Q: Did either OPC or Staff adjust the costs they removed from the test year for those hedges entered before SPP's implementation of the IM?

A: No. Even though both OPC and Staff point to SPP's IM as grounds for removing the costs, neither made an adjustment for costs associated with hedges placed before SPP's IM was implemented March 1, 2014. That is significant given that ** [redacted] ** or almost 80% of OPC's and Staff's ** [redacted] ** adjustment to the test year was for hedges that were placed before the change they say made hedging purchased power unnecessary.

Q: Did the implementation of SPP's IM make hedging power price risk unnecessary?

A: No. The IM did not make hedging power price risk unnecessary. Instead, it increased the need for hedging because power price volatility increased with the implementation of the IM. Given that the purpose of hedging is to mitigate market price volatility, the increase in market price volatility increases the need for hedging.

Q: How did you determine that the implementation of SPP's IM increased power price volatility?

A: The SPP Market Monitoring Unit ("MMU") reported on page 17 of the Spring 2016 State of the Market Report:

> Although overall volatility is higher than experienced in the EIS market, the relative patterns remain similar. The entities in the northern portion of the footprint tend to experience the lowest average prices while they

typically see the most volatility in pricing. Some higher volatility in the Integrated Marketplace can be attributed to scarcity pricing.[5]

I verified that statement with my own calculations. SPP's MMU uses the coefficient of variation as a measure of volatility, so I conducted an analysis of GMO's MPS Division. I compared the coefficient of variations for average daily real-time prices at MPS's price node for the 852 day period from the March 1, 2014 implementation of the IM through June 30, 2016 with the 852 day period of October 31, 2011 through February 28, 2014, the day before implementation. Using that measure, MPS's volatility increased from 43% before the IM to 57% under the IM.

Q: Did the implementation of SPP's IM increase the importance of using natural gas derivatives to cross-hedge power price risk?

A: Yes. As SPP's IM has evolved, GMO's natural gas burn under SPP's dispatch appears to be driven by system security and transmission congestion issues, not load. Consequently, there appears to be greater volume risk regarding natural gas fuel requirements. That exacerbates the uncertainty in whether GMO's load is to be served from natural gas-fired generation or purchased power. One of the benefits of using natural gas derivatives to hedge both natural gas to be used as fuel and cross-hedge power purchases is the same hedge covers our price risk whether we ultimately buy gas or power. Given that the purpose of hedging is to mitigate volatility in the cost of serving our customers, these changes increased the need for hedging power price risk.

[5] SPP Market Monitoring Unit, "State of the Market Report: Spring 2016 March-May 2016", June 24, 2016. https://www.spp.org/documents/39211/spp_qsom_2016spring.pdf, accessed August 10, 2016, p. 17.

B. Under All Of The Circumstances

Q: Another aspect of the prudence standard is "under all of the circumstances". At page 6 of his Direct testimony Mr. Riley also asserts that GMO's hedging program is outdated, rigid, inflexible, and that "the company has to hedge nearly 67% of its near-term natural gas fuel and purchased power requirements regardless of the market conditions." In other words, he alleges GMO's hedging practices do not adjust to the circumstances at hand. Do GMO's hedging practices adjust to changes in market conditions?

A: Yes. There are multiple ways GMO's hedging practices adjust to changes in market conditions and other circumstances relevant to hedging. One way we adjust to market conditions is in how much we hedge. Market conditions determine what percentage of our potential hedge volumes will actually be hedged and how they will be hedged. For example, if prices are high and are trending up, we will use call options to protect us from further upward price movement. If prices are low we will use a combination of futures and call options to lock in those low prices. If prices are flat-lined and there is no volatility in the market, we might not hedge or we might hedge only a small portion of our potential volume.

Another way our hedge program adjusts to market conditions is how the various hedge triggers are tuned. Our hedge consultant is constantly monitoring the market and from time to time will adjust the parameters that help us determine if prices are high or low. Whether a price is high or low is a function of one's perspective. When we place the hedges we do not know what prices will be in the future. We only know what they have been. A price that appears low today may appear high tomorrow.

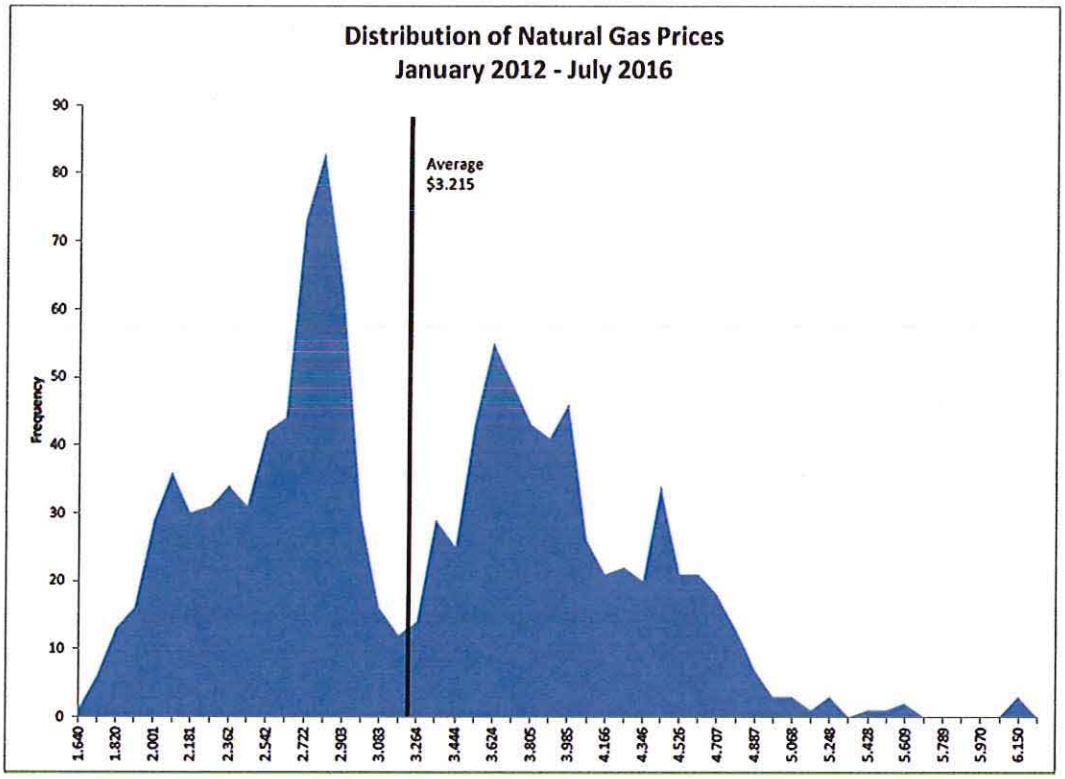
A third way that our hedge program adjusts to circumstances is by adjusting the potential hedge volumes in response to changes in our view about GMO's future requirements. Our view about those future requirements is influenced by our expectations regarding future market conditions and how those circumstances will affect our generation.

Q: Are there other circumstances or considerations relevant to the prudence of hedging?

A: Yes. The reason for hedging is to mitigate customer risk in severe upside markets. Upside cost outcomes tend to require customers to make costly adjustments relative to prior expectations. Hedge losses, while still potentially costly, occur in declining markets when the cash costs are more favorable than prior expectations, thus moderating the expense. Consequently customers derive greater value from upside cost mitigation than they forego from hedge losses.

The following chart shows another way there can be greater risk and cost from upward price movement than downward price movement. History repeatedly shows that commodity prices including natural gas prices have the potential to go much further from the mean when going up than when going down. For example, in the period January 2012 through July 2016, the price for natural gas averaged $3.215 but ranged from $1.64 to $6.15/MMBtu. On the upside, the price almost doubled but on the downside it only decreased about 50%.

Figure 1.



Q: OPC's Mr. Riley alleges on page 8 of his Direct Testimony that GMO's cross-hedging purchased power is unnecessary because it is not aware of other Missouri electric utilities that cross-hedge power price risk. Staff also asserts that GMO is the only Missouri IOU that hedges price risk for purchased power. Do other Missouri utilities hedge power price risk?

A: Yes. Ameren Missouri uses derivatives to manage risk of changes in market prices for natural gas and power.[6] Empire District Electric also hedges a portion of their power price risk.[7] KCP&L hedges market price risk for power it sells to SPP. In other words, all four of Missouri's electric utilities hedge some portion of their power price risk. Both

[6] Ameren Corp., 2015 Annual Report, Dec. 31, 2015, p. 66, from http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NjE0MTA3fENoaWxkSUQ9MzI4MTMyfFR5cGU9MQ==&t=1, accessed Aug. 10, 2016.

[7] The Empire District Electric Co., 2015 Annual Report, Dec. 31, 2015, p. 54, from https://www.snl.com/IRWebLinkX/file.aspx?iid=3005475&fid=33503526&osid=9&o=3, accessed Aug. 10, 2016.

KCP&L and GMO use natural gas derivatives to cross-hedge power price risk, so at least half of the electric utilities in Missouri cross-hedge power price risk.

Q: Do other utilities hedge power price risk?

A: Yes. I recently reviewed the 2015 annual reports of the investor-owned members of SPP regarding their discussion of their hedging activities. Of the nine investor-owned members of SPP[8], six discuss hedging power price risk and another two discuss using derivatives to hedge a component of power price risk. It is clear, therefore, that the vast majority of investor-owned SPP members hedge power price risk.

Q: Do other utilities cross-hedge power price risk?

A: Yes. Cross-hedging power price risk with natural gas is a relatively common practice. For example, in 2014 Dynegy reported that it used natural gas swaps as "cross-commodity correlated hedge for our power revenue."[9] In a letter to David Stawick, Secretary of the Commodity Futures Trading Commission from the electric trade associations of the Edison Electric Institute, Electric Power Supply Association, National Rural Electric Cooperative Association, Large Public Power Council, and American Public Power Association stated,

> It is not uncommon for load-serving energy companies to hedge multiple commodity risks, such as an electric utility hedging the commercial risks of its input (natural gas as fuel) and output (electric generation/deliverable electric energy). **Cross-commodity hedging is also commonplace.**[10] **[emphasis added]**

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[8] All companies and subsidiaries reported in one annual report were considered part of one company.

[9] Dynegy Inc., 2014 Annual Report, p. 85, from http://www.dynegy.com/sites/default/files/Dynegy_2014_Annual_Report.pdf, accessed Aug. 10, 2016.

[10] The "Electric Trade Associations," letter to David Stawick, Regarding: Comments on Joint Proposed Rules and Proposed Interpretations on Further Definition of "Swap," "Security-Based Swap," "Security-Based Swap Agreement"; Mixed Swaps; Security-Based Swap Agreement Recordkeeping (17 CFR Part 1) RIN No. 3038-AD46. July 22, 2011,pp. 34-35, accessed Aug. 10, 2016, https://www.publicpower.org/files/PDFs/CFTCDefinitionSwapCommentLetter07222011.pdf.

Q: Do any of the other Missouri electric utilities face the same market price risk for purchased power that GMO does?

A: No. GMO has significantly greater exposure to market price risk for power purchases than any of the other utilities in Missouri. As reported on FERC Form 1 for 2015, GMO purchased 3.3 million MWh or 37% of its total energy requirement from SPP at market prices. Empire purchased less than 15% or about 0.8 million MWh and KCP&L 1.1 million or 5% of their total energy requirements at SPP market prices. Union Electric purchased less than 5% or about 2.1 million MWh of its total energy requirements from MISO at market prices. In other words, GMO's exposure to market prices for purchased power is significantly greater than any of the other electric utilities in Missouri.

Q: At page 7 of his Direct Testimony, Mr. Riley points out that GMO hedges power and natural gas price for MPS customers but not L&P customers. Do MPS customers face the same market price risk that L&P customers face?

A: No, MPS and L&P do not face the same levels of market price risk. MPS buys significantly more power than L&P. The Section 7 reports[11] show that from January 2010 through May 2016, MPS spent ** [redacted] ** for non-firm short-term purchased power while L&P only spent ** [redacted] **. In other words, MPS's purchased power price risk was about 3.7 times greater than L&P's purchased power price risk. Likewise L&P only spent ** [redacted] ** for natural gas for the electric side of its business while MPS spent ** [redacted] ** or 10.6 times as much for natural gas. Again, MPS's exposure to market price risk for energy is significantly greater than L&P's exposure to market price risk for energy.

[11] FAC information filings required by 4 CSR 240-3.161(7) referred to herein as the Section 7 filings or reports.

C. Had To Solve Problem Prospectively

Q: How do GMO's hedging practices aid the Company in solving the problem of price volatility prospectively when market prices are driven by external factors outside the Company's control?

A: GMO's hedge strategy is market sensitive. By that I mean, the hedge program is guided by current market trends and pricing environment.

Q: Mr. Riley alleges on page 6 of his Direct Testimony that GMO's hedging practices did not adapt to the current natural gas and power pricing environment. How do GMO's hedging practices adapt to the current environment?

A: When market prices are high and threatening to go higher, GMO's strategy is to take action to protect against higher prices. When prices are low, we look for opportunities to lock in or capture some of those low prices. In a market with very little price movement, we might hedge less than 15% of our exposure. The tenor of the current pricing environment also affects how far out we might hedge. If it looks like current prices are very low, we might lock in some of those prices as far as three years out. If prices are high, we only take protective action for one year.

D. No Detrimental Impact

Q: In your response to the question about the Commission's Prudence Standard you referred to the Commission evaluating whether there was harm to customers from the Company's actions. In the case at hand, was there any harm caused by GMO using natural gas futures contracts to hedge the price of electricity?

A: No. When both sides of the hedge transaction are considered—the physical market and the futures market—and the fact that GMO had to solve its problem prospectively then

there is no detrimental impact of the Company's cross-hedging activities on customers. The hedge cost that OPC and Staff point to is offset by a gain on the physical market side of the hedge. As a result, there is no detrimental impact of using natural gas futures contracts to hedge the price of electricity. It would be incorrect to consider only one side of hedge transactions in evaluating its prudence.

Rejection of the derivative side of the hedges would represent a complete reversal of the Commission's position in Case Nos. ER-2005-0436, ER-2007-0004, ER-2009-0090, ER-2010-0356 and EO-2011-0390 and be in stark contrast with its other expressions about the need to protect customers from energy market induced rate volatility. In essence rejecting the derivative side of hedges that worked would be to reject hedging altogether.

Q: What do you mean by considering "both sides of the hedge transaction"?

A: Hedging is a risk management strategy that transfers risk without buying insurance. It employs various techniques but, basically, involves taking equal and opposite positions in two different markets as offsets to one another. The Energy Information Administration defines hedging as:

> Taking a position in a futures market opposite to a position held in the cash market to minimize the risk of financial loss from an adverse price change; a purchase or sale of futures as a temporary substitute for a cash transaction that will occur later.[12]

In other words, there are two parts to a hedge. The gain or loss in one market offsets the loss or gain in another market. To look at the gain or loss in only one of those markets misrepresents the true effect of the hedge.

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[12] Energy Information Administration, *Derivatives and Risk Management in the Petroleum, Natural Gas, and Electricity Industries*, October 2002, p. 84, available at: http://www.eia.gov/oiaf/servicerpt/derivative/pdf/srsmg(2002)01.pdf, accessed Aug. 10, 2016.

What may be a bit confusing about this is that the gain or loss in the cash or physical market is not identified as a gain or loss on the Company's income statement. Instead, the income statement just reflects the actual purchase cost or sale revenue. On the other hand, the accounting standards for hedging activities and derivative instruments such as futures contracts require that all derivatives be recognized at fair value on the balance sheet, either as assets or liabilities, unless they meet the criteria for the "normal" purchase and sale exception. The changes in the fair value of recognized derivatives are recorded each period in current earnings or other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction and the type of hedge transaction. Company witness Darrin Ives discusses the issues of hedge accounting in greater detail in his Rebuttal Testimony starting about page 14.

Q: Please illustrate how these two sides of a hedge work together.

A: When constructing a hedge, two transactions occur which can be described as: (1) buy what you sell (or will need), and (2) sell what you buy. Table 1 illustrates how this works using natural gas futures to cross-hedge electricity prices. For the sake of this illustration, I assume a market implied heat rate of 10 MMBtus/MWh, which is the same as 10,000 Btus/kWh. I also assume we are in the month of February looking ahead a few months to August. August is typically a warm month and we are likely to buy 1 MWh of power to serve our load. The power price for August is expected to be $30.00/MWh. Natural gas futures with August delivery in our example are selling at $3.00/MMBtu. Given our 10 MMBtus/MWh heat rate, $3/MMBtu gas times 10 MMBtu/MWh heat rate equals $30.00/MWh power. To lock in that price of power and avoid any price spikes, we buy 10 MMBtus of August natural gas futures at $3.00/MMBtu.

As we move from February to August in my example, unexpected things happen such as mild spring-like weather continuing into July. This causes significantly less demand for electricity and less demand for natural gas resulting in a surplus of natural gas. Consequently the prices for natural gas fall. Because natural gas is frequently the marginal fuel for power, power prices also fall. The natural gas futures for August settle at $2.00/MMBtu and we experience a loss of $1.00/MMBtu or $10.00/MWh in equivalent power. On the other hand, we are able to buy power for August at $20.00/MWh which is $10.00/MWh less than was likely in February. In effect, we experience a gain of $10.00/MWh. The $10.00 gain in the physical market less the $10.00 loss in the futures market equals no net change. The result is as if we had purchased in February the power at our expected price for August. In other words, the net effect is the same as if we had used forward contracts to lock in the price. The only difference is that the gain or loss from the derivative transaction is recorded in the Company's books.

Table 1: Illustration of Hedge Mechanics with Derivative Loss

	A	B	C	D
		Physical Market	Futures Market	Net Impact
1	February	NEED: 1 MWh power for August forecast price is $30.00/MWh	BUY: 10 MMBtus August natural gas futures at $3.00/MMBtu = $30.00	
2	August	BUY: 1 MWh power for August at $20.00/MWh	SELL: 10 MMBtus August natural gas futures at $2.00/MMBtu = $20.00	
3	**Change**	GAIN: $10.00	LOSS: $10.00	$10.00 - $10.00 = **$0.00**

Q: Using your illustration in Table 1 above, please explain what OPC and Staff are recommending.

A: Using the numbers in my example in Table 1, neither OPC nor Staff has taken issue with the $10.00 gain in the physical market shown in cell B3. Neither OPC nor Staff has recommended that the physical market gain be disallowed. Instead, OPC and Staff are arguing that the loss on the futures market shown in cell C3 is imprudent or unnecessary.

Q: Do hedges always result in a loss?

A: No. There would be a gain if the prices went up after the hedge was placed. Using different numbers, Table 2 illustrates the hedge gain of $15.00, but like Table 1 the net impact of the hedge is $0.00.

Table 2: Illustration of Hedge Mechanics with Derivative Gain

	A	B	C	D
		Physical Market	Futures Market	Net Impact
1	February	NEED: 1 MWh on-peak power for August forecast price is $30.00/MWh	BUY: 10 MMBtus August natural gas futures at $3.00/MMBtu = $30.00	
2	August	BUY: 1 MWh on-peak power for August at $45.00/MWh	SELL: 10 MMBtus August natural gas futures at $4.50/MMBtu = $45.00	
3	**Change**	LOSS: $15.00	GAIN: $15.00	-$15.00 + $15.00 = **$0.00**

Q: Can you determine the success or failure of a hedging program by only looking at the transactions in just the futures market?

A: No. You cannot determine the success or failure of a hedging program by only looking at the futures market transactions.

Q: Did either OPC or Staff remove the physical market change shown in cell B3 of your illustrations?

A: No. The physical market change shown in cell B3 is somewhat speculative because it is based on expectations. Moreover, it is not observable in the Company's books. What is observable in the Company's books is the purchase shown in cell B2. Neither OPC nor Staff took exception to actual expenses being lower than expected for our physical or cash transactions.

Q: Why isn't the physical market change identified as such in the Company's actual expenses that are recorded in the FAC related accounts?

A: If you will notice that the first word in cell B1 is "NEED" and the price is a "forecast price." NEED and forecast price represent expected transactions given our obligation to serve our customers

Q: Are the accounting standards different for derivative instruments versus transactions that will result in physical delivery?

A: Yes. Contracts for commodities that will be physically delivered in quantities expected to be used or sold in the ordinary course of business (including certain purchases and sales of power and fuel) meet the "normal" purchase and sales criteria and are not recognized on the balance sheet. Revenues and expenses from these contracts are reported on the income statement as the commodities are received or delivered. Mr. Ives discusses this in his Rebuttal Testimony.

Q: You said the net effect of hedging with futures is the same as using forward contracts. How does using futures contracts differ from using forward contracts?

A: While both effectively lock in prices and shield you from price movement, using futures creates separate accounting events. The gain or loss from buying and selling futures contracts that is used to offset the physical market price movement is recorded in the Company's books because there was a purchase and a sale of the futures contract. On the other hand, expectations do not create an accounting event. Consequently the physical market price movement is not recorded in the Company's books, only the ultimate purchase is recorded.

Q: Given that you would effectively pay the same price for power or natural gas using futures contracts as forward contracts, why do you use natural gas futures contracts and options to cross-hedge electricity price risk?

A: I discussed multiple benefits of using NYMEX natural gas futures contracts and options to cross-hedge electricity price risk or hedge natural gas price in my Direct Testimony at pages 27 and 28. One benefit I did not discuss is how the overall cost of the hedge program using natural gas futures contracts can be less expensive than if GMO had used forward contracts to hedge power price risk.

Q: Why would the cost of hedging be higher using electricity forward contracts rather than cross-hedging with NYMEX natural gas futures contracts?

A: There are multiple reasons why the cost of cross-hedging electricity price risk with NYMEX natural gas futures and options can be lower than using bilateral contracts for electricity. Perhaps the largest component of that cost difference would be the premium for term. GMO may place a hedge up to three years before the delivery month. The

more illiquid the market the more likely there will be a premium for term. That is, when there is not an abundance of sellers, the few sellers that might exist will consider the risks they face in the price they will sell at. The further into the future they are committing, the more price risk they see. Consequently sellers will embed in their price a premium for longer term as compensation for that greater risk.

Another cost associated with a market such as the bilateral electricity market that lacks a liquid secondary market, is the cost of adjusting commitments. GMO's expected requirements change from time to time. As those expectations change, the Company adjusts its hedge volumes. Because of the unique elements of each deal, GMO could suffer a significant loss should it need to reduce the volume hedged with electricity forward contracts.

In addition to those more obvious costs, the expected cost of hedging would be higher as the counterparty risk would be higher. The longer the term or the further into the future the commitment, the higher the probability that a counterparty will default before or during the term of the deal.

III. Reasonable Cost

A. 10 Percent Of Expense Hedged

Q: Mr. Riley also alleges that GMO's hedge costs are unreasonable at pages 8 through 12 of his Direct Testimony. Does Mr. Riley specify what he believes is a reasonable level of hedge costs?

A: Yes. At page 12, Mr. Riley states, "OPC believes a reasonable level of hedging costs is approximately 10 percent of the cost of the expense being hedged."

Q: Is Mr. Riley the only one to espouse that 10 percent is a "reasonable level" of hedging costs?

A: No. I have heard others in the industry hold up 10 percent as a rule of thumb for an expected level of hedge costs.

Q: How do GMO's hedge costs for purchased power compare to Mr. Riley's "reasonable level" of 10 percent?

A: GMO's hedge costs[13] from January 2010 through May 2016 have been significantly less than 10 percent of the purchased power expense that was hedged.

Q: How did you determine that GMO's hedge costs are significantly below Mr. Riley's "reasonable level" of 10 percent?

A: GMO uses the same program and the same hedges to mitigate both purchased power and natural gas price risk. Volumes for hedges related to (a) natural gas used as fuel to generate electricity and (b) natural gas used to cross-hedge power purchases are aggregated before hedges are placed. Because those projected volumes are aggregated before hedges are positioned, we cannot tell whether a specific hedge transaction is for fuel or power. Costs that are identified in this proceeding as purchased power hedge costs are based on my after-the-fact calculations apportioning hedge adjustments between hedges placed to protect expected natural gas burns and hedges placed to protect purchased power. I based those apportionments on projections used to develop the quantities that may be hedged.

To determine the percent of purchased power expense that was hedged, I compared those apportioned hedge costs to the Non-Firm Short-Term Energy costs for

[13] Hedge costs can be defined many ways. Perhaps the most common and likely the most extreme definition of "hedge costs" refers to the hedge adjustment plus option premiums. Because that is the definition OPC and Staff are using, I will work with it, even though I disagree that it the true cost of hedging.

MPS reported by the Company in its FAC information filings required by 4 CSR 240-3.161(7) sometimes known as the Section 7 filings.

Q: How did GMO's hedge costs compare to Mr. Riley's "reasonable level" of 10 percent?

A: From January 2010 through May 2016 MPS's non-firm short-term purchased power expense was ** [redacted] ** and its hedge costs for purchased power was ** [redacted] **. In other words, MPS's costs for cross-hedging its purchased power were only 5.7% of its purchased power expense. That is significantly less than 10%.

Q: Staff's Report shows hedge costs for 2009. Why did you exclude 2009 from your analysis?

A: The Stipulation and Agreement as to Certain Issues in Case No. ER-2007-0004 provided that

> "...hedge contracts in place on March 27, 2007 for the period June 1, 2007 through December 31, 2009 will be subject to the provisions of any fuel cost recovery mechanism approved by the Commission in this case. However, the ultimate settlement values will not be subject to challenge as to prudence disallowance relative to Aquila's original decisions to enter into these hedge positions."[14]

B. Hedge Budget

Q: Mr. Riley also referred to the 10 percent level in his recommendation at page 12 of his Direct Testimony, lines 21-24, to establish a hedging budget. What is your understanding of OPC's proposal?

A: Hedge costs and gains (hedge adjustments plus option premiums and broker fees) would be removed from the FAC and 10 percent of the cost of the expense being hedged would

[14] Stipulation and Agreement as to Certain Issues, Case No. ER-2007-0004, p. 5

be put in base rates. OPC is also recommending to only hedge natural gas expected to be used as fuel for generation.

Q: Are there any benefits of a hedging budget?

A: Yes. The idea of reviewing and approving or disapproving a hedge program before it is implemented can be of great value. Ken Costello, Senior Institute Economist for the National Regulatory Research Institute put it this way:

> Commissions should establish guidelines up front. These guidelines can act as general policy statements on different aspects of hedging, including cost recovery, which constitutes a prudent decision on the part of the utility, and the necessary elements of an acceptable hedging strategy. In hedging with financial derivatives, utilities need to know from their regulators what are the "rules of the game." Otherwise, they will be reluctant to hedge even when it would be in the interest of the consumers. Especially in an environment where rules are vague and all direct gains of hedging go to consumers, utilities understandably would have little incentive to hedge.
>
> State commissions also need to strike a proper balance between "signing off" on a hedging strategy and micro-managing the execution of the plan. Commissions lack the necessary information to direct a utility's hedging activities on a daily basis or to advise a utility on every decision. This does not preclude a commission from evaluating the execution of a hedging strategy. But as an overall policy, it would be preferable for commissions to convey, prospectively, clarity to utilities than to partake in costly and contentious hindsight reviews that frequently turn into "Monday morning quarterbacking." Hedging is one those activities, similar to the purchasing of insurance, where by design it is expected to result in a net loss to consumers. Consequently, hedging is vulnerable to ex post regulatory interpretation. But, in view of the intent to avoid large losses or harm—a "peace of mind-type" benefit—hedging with the result of higher prices to consumers or lower profits to a utility can still be regarded as successful and prudent.
>
> In sum, commissions should not tell utilities how to hedge; second-guessing lies counter to the traditional prudence standard and, more important, discourages utility hedging. Yet, a commission has a legitimate and useful role to play in evaluating the reasonableness of (1) a utility's

hedging strategy, prospectively, and (2) the execution of the strategy itself.[15]

Q: Do you have any concerns with OPC's proposed hedging budget?

A: Yes. I have multiple concerns regarding OPC's hedging budget as proposed by Mr. Riley. My number one concern is that it excludes hedging purchased power.

Q: Why does excluding purchased power concern you?

A: As I discussed earlier, as Mr. Riley also alludes to at page 11, and Staff at page 190, GMO's market exposure for purchased power is significantly greater than its exposure for natural gas to be used as fuel. Moreover, under SPP's IM, the risk really is purchased power. GMO no longer serves its own load from its generation. All of GMO's generation is sold to SPP. All of GMO's load is served from generation purchased from SPP. Given that the purpose of hedging is to mitigate volatility in the cost of serving our customers (our load), these changes increased the need for hedging power price risk relative to the need for hedging natural gas price risk.

Q: Do you have other concerns regarding a hedging budget?

A: My first concern deals with what numbers are we trying to budget. The loss or gain from the futures transaction is not the cash cost of hedging. Even though OPC, Staff, and I have colloquially referred to it as hedge cost a more accurate description is hedge adjustment. That gain or loss on the futures side of a hedge is driven by external market factors beyond any company's control. If the budget is a short-term constraint, it could require removing hedges during an adverse market move should the mark-to-market value exceed the budget. Markets go up and down and positions with a mark-to-market loss one day may have a mark-to-market gain another day. Consequently positions

[15] Ken Costello, Senior Institute Economist, National Regulatory Research Institute, "Regulatory Questions on Hedging: The Case of Natural Gas", *Electricity Journal* at 51 (May 2002).

removed to stay within budget start to look more like speculative trades rather than hedges.

My second concern with a hedge budget is how it could result in a higher cost hedge program. If someone is given a "not to exceed" budget, perhaps the surest way to live inside that budget is to buy options and to limit the option premiums to the budget amount. Under such a strategy, a significant portion of the exposure could end up unhedged and you could pay more in option premiums than you might have been able to manage with a more flexible program.

Q: If the Commission adopts OPC's proposed hedging budget, what should the budgeted amounts be?

A: The budget should be 10 percent of the annual average purchased power and natural gas expense, which would be ** [redacted] ** for GMO as a whole, with ** [redacted] ** budgeted for MPS and ** [redacted] ** for L&P.

Q: How did you determine those amounts?

A: Those are the annual average amounts from 2010 through 2015 for non-firm short-term purchased power plus the average natural gas commodity costs as reported in the Section 7 filings. I included L&P because of the recent change where for environmental reasons the Lake Road Plant's Unit 4/6 has been converted from burning coal to only burning natural gas. With that conversion to natural gas, L&P will have greater exposure to power market prices because less of its generation will be sold to SPP and will not offset power purchases.

Q: Mr. Riley stated at page 12 of his Direct Testimony that "the KCC does not allow KCPL to engage in hedging activities in Kansas. However, prior to being acquired

by Great Plains Energy ("GPE"), GMO (then Aquila, Inc.) was allowed to engage in natural gas hedging activities in Kansas." Mr. Hyneman also alleges that the KCC has not allowed KCPL to engage in hedging. Is this accurate?

A: No. I am KCP&L's hedging witness and it was my testimony that established KCP&L's position before the KCC. To say the KCC does not allow KCP&L to hedge does not accurately represent the situation. Whether KCP&L should or should not hedge Kansas volumes was not presented to the KCC as an issue requiring a decision. At page 6 of my Rebuttal Testimony in KCC Docket No. 07-KCPE-905-RTS[16] is the following question and answer:

> Q: In your Direct Testimony you described KCPL's natural gas hedge program. Is KCPL seeking approval of its natural gas hedging program?
> A: No, it is not.

KCP&L did not ask the KCC to approve its hedge program, and the KCC has never approved or disapproved KCP&L's hedge program. The KCC did not decide to disallow KCP&L's hedging.

IV. Market Prices Are Still Volatile

Q: Both OPC and Staff allege that the natural gas market is now stabilized and non-volatile. How would you characterize the natural gas market?

A: Below are two charts. Figure 2 shows daily natural gas prices from April 1990 through July 2016, and Figure 3 shows 20-day volatility of those prices. Figure 2 shows that while natural gas prices are lower than they were from 2003 through 2008 they are still higher than they were before 2002. Figure 3 shows that price volatility still ranges from

[16] Available at http://estar kcc.ks.gov/estar/ViewFile.aspx/20070824154601.pdf?Id=783fcbb0-36b2-4707-81ed-c76f46c275cb, accessed August 10, 2016.

20-80%. Thus, contrary to the Staff and OPC assertions, prices have not stabilized and remain volatile.

Figure 2

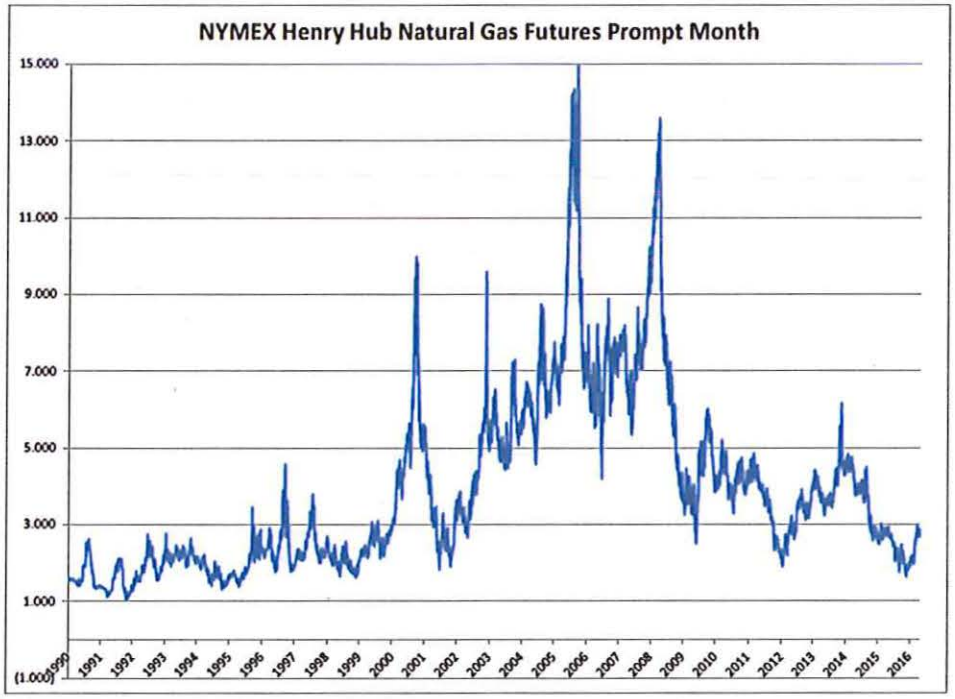
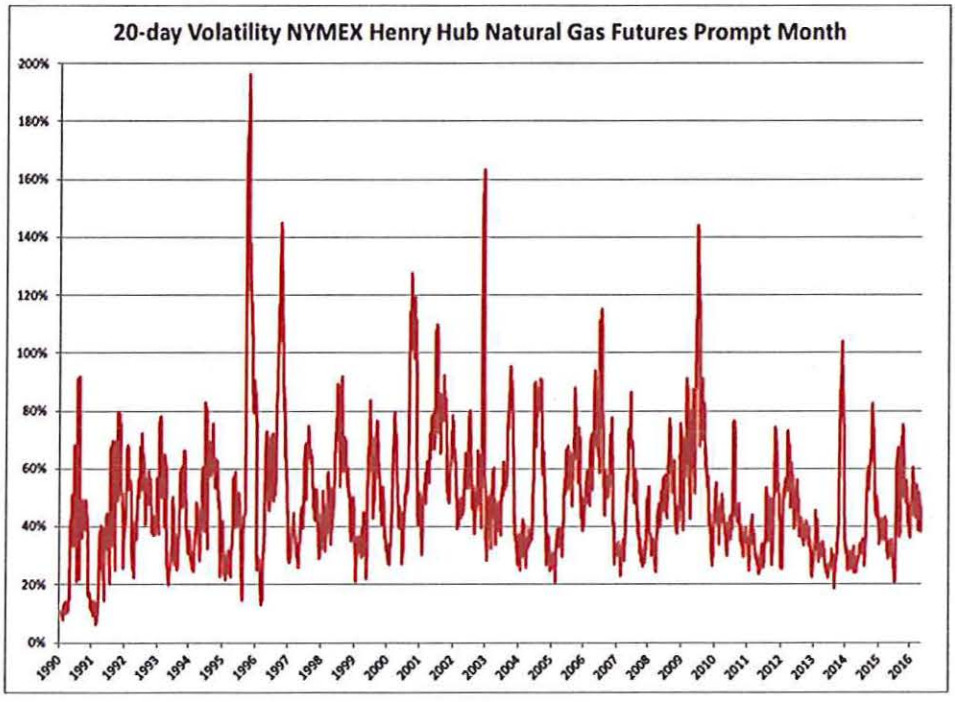


Figure 3



V. Recommendation

Q: Do you have any recommendations for the Commission regarding hedging?

A: Yes. First, I recommend that the Commission reject OPC's and Staff's proposed disallowance of GMO's hedging costs. Ken Costello, Senior Institute Economist of the National Regulatory Research Institute, put it this way:

> **Hedging is one of those activities, similar to purchasing of insurance, where by design it is expected to result in a net loss to consumers. Consequently, hedging is vulnerable to *ex post* regulatory interpretation.** But, in view of the intent to avoid large losses or harm – a 'peace of mind-type' benefit – hedging with the result of higher prices to consumers or lower profits to a utility can still be regarded as successful and prudent. … [S]econd-guessing lies counter to the traditional prudence standard and discourages utility hedging. [emphasis added][17]

Second, if the Commission accepts Staff's recommendation to order GMO to suspend all of its hedging activities (cross-hedging and natural gas fuel hedging) associated with natural gas, then the Commission should allow GMO to recover hedging costs incurred through November 30, 2016 the end of the current accumulation period through the FAC. Allowing GMO to recover hedging costs incurred through November 30, 2016, would allow GMO to close out its current hedge positions in an orderly fashion. If those costs are recovered through the FAC as they currently are, they will not be over-recovered.

If the Commission accepts Staff's recommendation to order GMO to suspend all of its hedging activities, it could set the Company up for a prudence challenge, as well as eliminate one of GMO's best risk mitigation tools. Natural gas prices appear to be at long-term lows, suspending hedge activity now could result in another hindsight charge regarding prudence in a few years when prices increase and there are no hedge gains to

[17] *Regulatory Questions on Hedging: The Case of Natural Gas*, by Ken Costello Senior Institute Economist, National Regulatory Research Institute, February 2002, p. 16.

offset the rise in market prices. Moreover, GMO has much greater exposure to power market prices than natural gas prices and cross-hedging is perhaps our best risk mitigation tool for power market prices. To remove cross-hedging from GMO's arsenal of risk mitigation tools would severely handicap the Company's ability to manage power market price risk in the future.

Q: Does that conclude your testimony?

A: Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of KCP&L Greater Missouri Operations	)	
Company's Request for Authority to Implement	)	Case No. ER-2016-0156
A General Rate Increase for Electric Service	)	

AFFIDAVIT OF WILLIAM EDWARD BLUNK

STATE OF MISSOURI)
) **ss**
COUNTY OF JACKSON)

William Edward Blunk, appearing before me, affirms and states:

1. My name is William Edward Blunk. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Generation Planning Manager.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of KCP&L Greater Missouri Operations Company consisting of thirty-one (31) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby affirm and state that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

William Edward Blunk

Subscribed and affirmed before me this 15th day of August, 2016.

Nicole A. Wehry
Notary Public

My commission expires: Feb 4, 2019

NICOLE A. WEHRY
Notary Public - Notary Seal
State of Missouri
Commissioned for Jackson County
My Commission Expires: February 04, 2019
Commission Number: 14391200