Exhibit No.: Issue(s): Witness/Type of Exhibit: Sponsoring Party: Case No.:

FAC Riley/Direct Public Counsel EO-2017-0065

### **DIRECT TESTIMONY**

### OF

### **JOHN S. RILEY**

Submitted on Behalf of the Office of the Public Counsel

### **EMPIRE DISTRICT ELECTRIC COMPANY**

CASE NO. EO-2017-0065

\*\*

Denotes Highly Confidential Information

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that has been Redacted

May 19, 2017

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

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In the Matter of the Sixth Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of The Empire District Electric Company

Case No. EO-2017-0065

### AFFIDAVIT OF JOHN S. RILEY

### STATE OF MISSOURI )

) COUNTY OF COLE )

John S. Riley, of lawful age and being first duly sworn, deposes and states:

SS

1. My name is John S. Riley. I am a Public Utility Accountant III for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

John S. Riley, C.P.A. Public Utility Accountant III

Subscribed and sworn to me this 19<sup>th</sup> day of May 2017.

JERENE A. BUCKMAN My Commission Expires August 23, 2017 Cole County Commission #13754037

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Jerene A. Buckman Notary Public

My Commission expires August 23, 2017.

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### **DIRECT TESTIMONY**

### OF

### JOHN S. RILEY

#### THE EMPIRE DISTRICT ELECTRIC COMPANY

#### CASE NO. EO-2017-0065

#### **INTRODUCTION**

### Q. Please state your name and business address.

A. John S. Riley, PO Box 2230, Jefferson City, Missouri 65102.

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

A. I am employed by the Missouri Office of the Public Counsel ("OPC") as a Public Utility Accountant III.

### Q. Please describe your educational background.

A. I earned a B.S. in Business Administration with a major in Accounting from Missouri State University.

#### 0 Q. Please describe your professional work experience.

A. I was employed by the OPC from 1987 to 1990 as a Public Utility Accountant. In this capacity I participated in rate cases and other regulatory proceedings before the Public Service Commission ("Commission"). From 1994 to 2000 I was employed as an auditor with the Missouri Department of Revenue. I was employed as an Accounting Specialist with the Office of the State Court Administrator until 2013. In 2013, I accepted a position as the Court Administrator for the 19<sup>th</sup> Judicial Circuit until April, 2016 when I joined the OPC.

Q.	Are you a Certified Public Accountant ("CPA") licensed in the State of Missouri?
A.	Yes. I am also a member of the Institute of Internal Auditors ("IIA")
Q.	Have you previously filed testimony before the Missouri Public Service Commission
	("Commission" or "PSC")?
A.	Yes I have.
	<b>RECOMMENDATION AND SUMMARY OF TESTIMONY</b>
Q.	What is the purpose of your direct testimony?
A.	The purpose of my testimony is to demonstrate that Empire District Electric Company's
	("Empire" or "Company") hedging policies and practices are imprudent and have harmed
	ratepayers by subjecting them to substantial and unnecessary hedging losses during the 18
	month prudence review timeframe.
Q.	Does OPC have a recommendation for the Commission?
A.	Yes. OPC recommends the Commission find Empire's hedging policy imprudent for the
	time period of March 2015 through August 2016 and order Empire to return to its
	customers, \$13,104,811.18 <sup>1</sup> along with interest in the first FAC rate change following the
	effective date of the Commission's order in this case.
Q.	How should the Commission judge the Company's conduct?
A.	The Commission's prudence standard described below has been in place now for over 20
	years.
	[A] utility's costs are presumed to be prudently incurred However, the presumption does not survive "a showing of inefficiency or
<sup>1</sup> Tot alloc	al calculations were \$16,785,521.65 prior to Missouri jurisdictional and FAC ations.

improvidence."...[W]here some other participant in the proceeding creates a serious doubt as to the prudence of an expenditure, then the applicant has the burden of dispelling these doubts and proving the questioned expenditure to have been prudent....

 $\dots$ [T]he company's conduct should be judged by asking whether the conduct was reasonable at the time, under all the circumstances, considering that the company had to solve its problem prospectively rather than in reliance on hindsight. In effect, our responsibility is to determine how reasonable people would have performed the tasks that confronted the company.<sup>2</sup>

The key take-away from this quote is that the Company's fuel hedging practices must have been "reasonable" and must be judged "prospectively" based on circumstances at the time.

### **Q.** Why are these important considerations?

A. The prudence standard really comes down to determining what course of action should a utility adopt that affects its future operation and its customers, when it takes into consideration all the facts available at the time. OPC's evidence will show that given the facts that were known or should have been known by Empire at that time, a reasonable utility would not have engaged in the hedging practices that caused heavy monetary losses in Empire's natural gas purchases.

Q. OPC witness Charles Hyneman states in his testimony that the first standard to be met in a prudence audit case is serious doubt of prudence. Would you summarize what raises serious doubt regarding the prudence of Empire's hedging costs in the prudence audit period in this case?

A. First, the natural gas market has not been advantageous for electric utility natural gas hedging for several years and is expected to continue this way for quite a while longer.

<sup>2</sup> State ex rel. Associated Natural Gas Co. v. Public Service Commission of State of Missouri, 954 S.W.2d 520, 528-529 (Mo. Ct. App. 1997).

 Secondly, Empire's rigid hedging policy resulted in ratepayers paying \$13.1 million more in fuel costs during the audit period than they would have paid if Empire did not engage in natural gas hedging activities. Finally, as outlined in OPC witness Hyneman's direct testimony, the prudency of natural gas hedging has been addressed in other states at least as far back as 2010.

Recently, the Kentucky Public Service Commission ("PSC") denied a request of Columbia Gas of Kentucky and Atmos Energy Corporation to continue their gas cost hedging programs. In ending the practice, Kentucky PSC found that current conditions and the outlook for future natural gas supplies and prices are sufficiently different from those in 2001 and therefore dispel concerns regarding the potential adverse impact of price volatility on customers' bills.<sup>3</sup> The Kentucky PSC ended the utilities' hedging programs, finding that continued low and stable gas prices obviate the need for hedging and that it is no longer reasonable to customers.

Additionally, KCP&L – Greater Missouri Operations Company ("GMO") agreed in its recent rate case to discontinue its hedging practices. And lastly, the Kansas Corporation Commission does not allow Empire to recover hedging costs from Empire's Kansas customers.

### **Q.** Please summarize why Empire's hedging is imprudent.

A. At the time natural gas purchasing decisions were made for the time period of this prudence audit, Empire's hedging policy was inflexible and was not responsive to the low cost natural gas forecasts provided by the U.S Energy Information Administration ("EIA") and consultants hired by Empire to provide natural gas forecasts specifically for Empire. Because hedging costs were included in the FAC, Empire experienced very little, if any, harm from these practices. Its rigid policy resulted in over \$13 million of costs being charged to its customers in just this one FAC audit period.

<sup>&</sup>lt;sup>3</sup> Enerknol Research Dec. 21,2015 "Regulators Reconsider Utility Hedging Policies Given Shifts In Natural Gas Flow

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### SERIOUS DOUBT

### Q. Would you characterize the market for natural gas during the prudence review period?

A. During the audit period, spot market natural gas prices were the lowest they had been in this century.

# Q. You have stated that it is important to know what decisions were based on to determine prudence. Would you describe the natural gas market prior to this audit period?

A. From 2004 through 2009, the average price of natural gas never fell below \$5 MMBtu.<sup>4</sup>
From February of 2010 through today, the average price of natural gas went above \$5 for
only one month in the entire seven years. That one month was the "Polar Vortex" of
February 2014 where the spot price on the Henry Hub reached \$6 but fell \$1.10 the
following month. The average price was in a steady decline that very cold winter until it
hit a bottom of \$1.73 MMBtu in April, 2016.

### 15 **Q.** What type of hedging is prudent in an environment with dropping or stable prices?

16 A. As prices are falling or staying fairly constant, typical utility hedging is an expensive 17 proposition with little or no benefit. If a company is hedging just because a certain volume level dictates (as is the case with Empire), then it would be much more likely that 18 the price paid for the derivative or forward contract will be higher than the spot price on 19 the current open market. If prices go down or stay close to the same when the contract 20 comes due, then ratepayers will have paid more for the future natural gas purchase than 21 22 the going market price. Unless a company is betting on the price of natural gas going 23 down, there really isn't any hedging that is suitable for this pricing environment.

<sup>&</sup>lt;sup>4</sup> Prices bases on the Monthly average at the Henry Hub terminal listed on the U.S. Energy Information Administration ("EIA") website.

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Generally speaking, the market behavior since 2011 has not supported hedging natural gas to protect against price spikes in the price of natural gas.

### Q. Was Empire aware of this declining price market?

 A. Yes. Declining natural gas prices were evident several years before the March 2015 through August 2016 prudence review period when Empire was making decisions impacting this prudence audit period.

As I stated previously, natural gas prices have been on a downward trend since the last price spike in 2008. That was when the convergence of several economic and weather related factors forced natural gas to peak at nearly \$13/MMBtu. This prompted oil companies to drill more wells causing supply to outpace demand. Empire officials acknowledged the downward price trend when it responded on July 3, 2013, well before this prudence audit period, to Staff questions in Docket No. EW-2013-0101: *Working Docket to Address the Hedging Practices of Electric Utilities Used to Mitigate the Rising Costs of Fuel:* 

Staff Question 12: How have changes in the natural gas market since 2009 affected the benefits, for both utilities and their customers, of hedging natural gas?....

Empire's Response: As the natural gas prices have declined, both Empire and its customers have benefitted from the price declines – the customers through lower electric bills, and Empire through a lower overall revenue requirement. In addition to the lower fuel costs for Empire and its customers, the decline in natural gas prices has resulted in lower spot power prices, which have also been flowed through the FAC to the benefit of Empire's Customers.

The price decline accelerated since the "Polar Vortex" of February of 2014 as more and more natural gas entered the market. Attached as JSR-D-1 is a summary page of historical natural gas prices published by the U.S. Energy Information Administration

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("EIA"). The EIA gathers information on most fuels consumed in the U.S. They publish weekly reports on many changes in commodity statistics.

Among other statistics, the EIA reports on fuel prices, number of oil rigs in production, weather expectations, coal shipped, and their expectations concerning short and medium term prices of these tracked commodities. There is one compelling data point that the EIA tracks every week that plays a significant role in whether gas prices will stay low – and that is the weekly natural gas storage report. This is a report of the current level of natural gas in storage across the country. There is a strong correlation between natural gas prices and the five year average in natural gas storage. A recent article by the investment information technology company Market Realist explained why natural gas prices have been low for an extended period of time. One take away from the analysis is quoted below:

Natural gas prices are impacted by the spread between the natural gas inventories and their five-year average. Over the last ten years, whenever natural gas inventories have been higher than their five-year average, prices have fallen.

In contrast, between December 2013 and April 2014, when inventory levels fell short of the five-year average by the highest amount in the past ten years, natural gas prices rose to \$6.14 per million British Thermal units.

The downturn in natural gas prices since June 2008 could be linked to higher inventories compared to the five-year average<sup>5</sup>

It is interesting to note that the 2016 injection season began in April with record-high start of the season natural gas storage levels and ended in October with an end-of-month record. Natural gas storage levels reached an all-time high in November.<sup>6</sup> Average monthly prices

<sup>&</sup>lt;sup>5</sup> Robert Scott, Analyzing Natural Gas Inventories and Prices – Market Realist p.

<sup>4</sup> of 9, http://marketrealist.com/2017/03/markets-strong-natural-gas-lagging/,

<sup>&</sup>lt;sup>6</sup> EIA article "Underground Natural Gas Working Storage Capacity" April 3,

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for natural gas in 2016 were the lowest in this century. The Market Realist also pointed out that natural gas inventories fell below their five-year average in December 2016 for the first time in 19 months and the average price rose above \$3 for the first time in over two years.

### Q. Can inventory levels predict the price of natural gas?

A. No. Inventory levels cannot predict prices but they can give an indication that so long as there is record or near record storage levels, price spikes are suppressed. But high inventory levels by themselves will not keep market prices from rising and falling. It is not unusual, and in fact, generally expected that natural gas prices rise and fall throughout the year due to weather and expected customer usage patterns. More and more electric utilities have turned to natural gas generation plants to replace coal-fired systems and the majority of peaking capacity is natural gas fired. Consequently, the months of July and August see higher natural gas prices, as do the peak winter months. Prices tend to be lower in the Fall and Spring. There is no surprise in this market behavior.

### Q. Is this annual expected rise and fall of natural gas prices evidence of a need for extensive hedging?

A. No. If you look at the annual gas prices from 2000 through 2010, you find that the average annual price for that timeframe was \$5.69. From 2011 through 2016 the average annual price was \$3.33. That is a 41.47% drop in price. As pointed out earlier in this testimony, the high volatility and upward pricing pressure has not existed since 2008 and so long as the natural gas market continues to bump up against record storage levels this excess capacity can absorb sudden demand needs and we can expect prices to remain subdued with little chance of spiking anytime soon.

Attempting to hedge prices in this type of market environment has no benefit that is worth the financial risk to the customer. The market prior to the prudence audit period was not demonstrating any risk that needed to be addressed through costly hedging. Pricing forward

contracts, swaps and futures at 30% over then current market prices may help a company predict its future natural gas budget, but it certainly wasn't helping the ratepayer.

### Q. You have stated Empire's hedging policy is rigid. What is your understanding of the Company's policies governing hedging?

A. Empire has in place an Energy Risk Management Policy, which is attached as JSR-D-2 that provides the rules and guidelines that govern the Company's actions in managing their power and natural gas commodity risk. It has had this policy in place, mostly unchanged, since 2001. By all indications, the Company has strictly adhered to these guidelines since they were developed in 2001.

### 0 Q. Would you summarize the Company's hedging practices?

A. Essentially, the company places natural gas hedging transactions based on a percentage of their expected natural gas volume needs for a given timeframe. Their hedging is based on volume need, not price risk. The Commission's Staff quoted from the hedging strategy section of the Company's Energy Risk Management Policy manual and included it in its prudence report in this case. It is important to display it here again so the Commission can understand how inflexible and costly this practice has been.

Very telling in this section of its Risk Management report is that Empire begins its hedging strategy section with a description of its FAC which includes the detail that hedging costs are included in its FAC.

### 4. HEDGE STRATEGY

### **Electric Segment**

Prior to September 1, 2008, the electric segment's Missouri retail rates were not subject to a fuel cost adjustment clause. Effective September 1, 2008 regulators granted a fuel adjustment clause (FAC) for recovery/refund of 95% of prudent fuel expenses versus a base rate established in rate case ER-2008-0093 and any future rate cases.

The Missouri FAC allows Empire to recover 95% of under-recovered prudent fuel expenses and return to customers 95% of any over-recovered prudent fuel expenses versus a base rate. Costs eligible for the FAC will be the total fuel costs as allocated to Missouri for fuel consumed in generating units, including the costs associated with fuel hedging programs; purchased power costs excluding demand costs; and the net of ARR/TCR/FTR activity as well as emission allowance costs and revenue. These costs will be off-set by sales activity in the SPP Integrated Marketplace.

Actual costs will be accumulated during the 6 month Accumulation Period, These costs will be used to determine the Cost Adjustment Factor (CAF) that will be filed with the Missouri Public Service Commission and upon their approval will be applied to retail customer billings during the appropriate Recovery Period.

Empire's strategy description then describes that the focus of Empire's hedging strategy is to address volatility of prices to provide for predictable fuel and purchased power costs for Empire over a multi-year period and to allow for management of the Company's risk positions.

The electric segment's strategic focus addresses the volatility of natural gas prices by attempting to protect against volatile natural gas costs for the electric segment's plants. The electric segment will apply risk management strategies in an attempt to lessen the risks associated with variances in the volume of fuel consumed relative to budgeted fuel consumption volume.

The electric segment's specific hedge strategy goals are to provide for predictable fuel and purchased power costs over a multi-year period and to provide a framework to allow for management of its risk positions.

Next in its strategy, Empire provides the objectives of the strategy. Again the strategy focuses on mitigating impacts and being able to estimate fuel costs. This is the only time minimization of cost is mentioned and then it is tempered with minimization of volatility:

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 While the next section has a heading that suggests it will now provide an overview of its "hedging targets" it in fact describes how an expected natural gas burn will be determined. An overview of the electric segment's hedging targets for natural gas is outlined below:

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The hedging strategy then describes the hedging tools that may be used by Empire.

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Finally Empire lays out its hedging targets.

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This section states the "intention" of the strategy is to protect the customers *from volatility in the marketplace*. There is no mention of minimization of costs for the customers in Empire's hedging strategy nor the mention of the only valid purpose of an electric utility hedging program – to protect against natural gas price spikes. When minimization of costs is mentioned earlier in the hedging strategy, it is clear that it is referring to minimizing costs to the electric segment of Empire.

### Q. Wouldn't that minimize costs to the customer too?

A. Not necessarily. Because of the FAC, minimizing the cost to the electric segment of Empire
is done by minimizing the difference between the actual natural gas cost and the natural gas
costs included in Empire's base electric utility rates.

### Q. Why does the Company base its hedging strategy on volume as opposed to natural gas market risks?

A. Empire started hedging natural gas long before the Commission addressed hedging to mitigate upward natural gas price spikes for Missouri's gas companies.<sup>7</sup> Empire was attempting to combat regulatory lag and provide price certainty. Its Energy Risk Management Policy dated August 21, 2003 and quoted below provides a different opening paragraph to its <u>Hedge Strategy</u> section than the current, January 14, 2015 written policy:

2003:

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<sup>7</sup> 4 CSR 240-40.018 Natural Gas Price Volatility Mitigation(1)(A)originally filed May, 2003 also 4 CSR 240-20.090 Electric Utility Fuel and Purchased Power cost Recovery Mechanisms filed June, 2006

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In 2003, the Company hedged for regulatory lag and price certainty to help manage its risks. Empire was not focused on protecting the ratepayer from price spikes, rather it was focused on what it could recover in a rate case given regulatory lag. Now that the Company has a FAC, these opening paragraphs have been replaced with a description of the FAC but nothing within the policy is different.<sup>8</sup> As Mr. Blake Mertens, Vice President of Energy Supply and Delivery Operations for Empire Electric attest to in his surrebuttal in Case No. ER-2016-0023:

### **Q.** Does Empire have a comprehensive hedging policy in place?

A. Yes. Empire first implemented its Energy Risk Management Policy ("RMP") in 2001.
 While slight modifications have been made throughout the years largely to update organizational or nomenclature changes, the most substantive of which was prior to the SPP IM going live to reflect changes in daily processes and reflect transmission congestion rights procurement practices, our natural gas hedging policy and practices have remained consistent.<sup>9</sup>

# Q. How is Empire having the same policy concerning natural gas purchases for over the past 16 years imprudent?

17 A. The question of prudency comes in when it is realized that the Company has not changed its business policies or its practices regarding hedging while the regulatory environment 18 and natural gas volatility and prices have changed significantly. The Company now has 19 an FAC. Gas prices and volatility are at lows and are predicted to stay low for several 20 more years. The Southwest Power Pool ("SPP") has initiated the Integrated Market in 21 2014 garnering a mention in the opening paragraphs of the hedging strategy, yet the 22 Company keeps plowing ahead with the same hedging strategy when it should have 23 24 stepped back and reviewed the business climate and natural gas forecasts. As the 25 Commission points out within the prudence standard: "our responsibility is to

<sup>&</sup>lt;sup>8</sup> Please review the Hedging Strategy Section quoted on page 7 of this testimony

<sup>&</sup>lt;sup>9</sup> Mertens surrebuttal, page 2, first question

determine how reasonable people would have performed the tasks that confronted the company"<sup>10</sup> (emphasis added)

The facts show that, due to the Company's inflexible and unreasonable hedging strategy that resulted in millions of dollars in excessive natural gas costs, Empire conducted its natural gas purchases in an imprudent way. Given the fact that Empire's 2003 hedging strategy was to defeat regulatory lag, a reasonable person would never had made those transactions if they had not had the ratepayer as their backstop when predictions showed lower gas prices in the future.

### Q. How can the OPC make this argument when the Company has been adhering to this policy for 16 years?

A. First of all, the Company never initiated this policy to save the ratepayer any money. It did not begin hedging to prevent ratepayer shock, pain or to protect the ratepayer from gas cost volatility. As I pointed out before, Empire implemented this policy (2001) prior to the Commission formalizing concerns about price spikes (2003) and when Empire was allowed an FAC (2008). The Company policy has never changed and its hedging practices have never changed. \*\*

\*\* If a company like Empire is hedging greater than \*\* \*\* of its gas needs then its hedging program is a budgeting forecaster, not a price spike mitigator.

Secondly, without highly volatile natural gas prices, this method of hedging becomes very transparent for its simplicity and cost to the ratepayer. When the hedging strategy section of the RMP is reviewed it is clear that this hedging method is a "lock and leave" approach where there is no real strategy and no loss limits or market considerations to

<sup>10</sup> Quote from page 2 of this testimony. *State ex rel. Associated Natural Gas Co. v. Public Service Commission of State of Missouri*, Western District Court of Appeals summarization

guide the decision making. The policy is non-discretionary and should be considered imprudent on its execution alone.

### **Q.** Could you explain the "lock and leave" strategy?

A. In the case of Empire's policy, the company has a predetermined minimum percentage of its expected volume that it will hedge. As this portion of its Hedging Strategy section illustrates:

The electric segment will utilize the following procurement guidelines:

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Empire's policy is to hedge four years ahead for any given period by hedging a set amount of volume for years 1, 2, 3 and 4. As these instructions point out, the prescribed percentages should be transacted by the year end. After reviewing its records I have found that the Company practice is to lock in purchases for year one much earlier than year end. There are no considerations other than volume and no instructions for adverse market conditions, budgets or losses. There is flexibility to hedge more volume but not less so at least the minimum amount is **locked** in and **left** in place to accept the prevailing market conditions. The problem is that the market conditions, that may have been favorable for hedging when this policy was first set in place in 2001, were not favorable

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for this kind of programmatic hedging once the market settled and prices began declining. The results became even more exasperated by purchasing years in advance.

# Q. Empire's hedging strategy seems pretty straight forward and they have been executing this strategy for 16 years. What specifically makes this an imprudent practice?

A A finding of imprudence is due to the combination of natural gas price decline with extremely long range (four years or greater) gas purchases at prices well above current and forecasted prices. As I pointed out earlier in testimony, prices have been declining for years and the major factor for this is the increased production causing near record storage. Merriam Webster's Dictionary defines imprudent as "not prudent: lacking discretion, wisdom, or good judgment, an imprudent investor"<sup>11</sup>

Empire recognized that prices were declining at least as early as 2009<sup>12</sup> yet it was still placing hedges 18-36 months in advance. In a prime example of the Company's lock and leave hedging strategy: in December of 2011, Empire hedged over \*\*

\*\* (see Schedule JSR-D-3). I am mindful that the prudence standard imposes "... reasonable at the time, under all the circumstances, considering that the company had to solve its problem prospectively rather than in reliance on hindsight", but in December of 2011, natural gas was \$3.17.<sup>13</sup>

Natural gas had not been above \$5.00 since February of 2010. At the time, storage levels were 12% above the 5 year average. The monthly average price for gas in 2011 had been falling nearly every month and December was the lowest average price of the year. The

<sup>&</sup>lt;sup>11</sup> Merriam-Webster Dictionary, https://www.merriam-webster.com/dictionary/imprudent.

<sup>&</sup>lt;sup>12</sup> See quote from EW-2013-0101

<sup>&</sup>lt;sup>13</sup> \$3.17 was the monthly average price on the Henry Hub reported by EIA

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December 2011 EIA Short Term Energy Outlook report revised the upcoming 2012 spot prices downward from their predictions from a few months before.<sup>14</sup>

A reasonable person under these circumstances would not purchase gas for a price not seen in almost two years, to be delivered more than three years down the road. At the time, Empire paid \$5,494,400 for fuel that in 2015 (more than two years later) would have cost \$2,565,400. The loss of \$2,929,000 doubled the price and left it to the ratepayer to foot the bill for decisions that lacked discretion, wisdom or good judgment while Empire enjoyed an FAC that ran those costs, along with interest, through to the ratepayer in less than six months.<sup>15</sup> This indeed was cost minimization to Empire because it absorbed very little of this cost.

This is not an isolated incident. OPC attached the Company's gas summary reports for every month of the prudence review as JSR-D-4. These reports show the Company lost money in every month it hedged.<sup>16</sup>

# 14 Q. What was the full impact of the financial hedging losses for the prudence review period?

A. OPC concurs with Staff witness Ashley Sarver and finds that the financial hedging losses
were \$10,712,168 but OPC disagrees with Staff's calculations concerning the total
amount of hedging losses and the calculation of the true amount of natural gas fuel costs
during the 18 month period.

### 20 Q. How did OPC calculate fuel costs?

A. OPC doesn't question any of the Staff calculations but would rather point out that there is
a difference between actual natural gas fuel and other costs that may be accounted for as

<sup>&</sup>lt;sup>14</sup> December2011 EIA Short Term Energy Outlook page 1

<sup>&</sup>lt;sup>15</sup> \$2.54 was used from the June 30, 2015 Company Gas Position Summaries to calculate the differences

<sup>&</sup>lt;sup>16</sup> Empire did not hedge in 1 of the 18 months.

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a natural gas fuel expense. Hedging transactions are specific to just the cost of the natural gas commodity. The Company does not hedge firm transportation, commodity charges or miscellaneous fees. Hedging gains or losses should be reviewed against only natural gas commodity costs.

In the Sixth Prudence Review of Costs, Staff summarized the hedging review with:

...a hedging loss on natural gas derivatives of 10,712,168. This represents approximately fifteen percent of Empire's total natural gas cost of 69,301,828 for the review period.<sup>17</sup>

The \$69 million represents all natural gas fuel costs lumped together. When all of the non-fuel expenses are subtracted, the actual natural gas fuel costs are \$49,677,485. When financial hedging losses are compared to actual fuel costs, the cost of hedging is 21.56% of natural gas fuel costs. This 21.56% premium paid by Empire's ratepayers is just the premium paid on financial hedges and does not include the premium paid on physical hedges.

### 15 Q. Has OPC calculated a higher amount of total hedging losses than Staff?

16 A. Yes. Financial hedges are the losses that are actually recorded in FERC Account 547 but 17 the Company did more than NYMEX Swaps and Futures. In most months the Company 18 also hedged the price of natural gas through forward contracts. They negotiated contracts sometimes several years in advance just like they did with the financial derivatives. The 19 20 financial hedging and physical hedging are broken out in separate sections on the Gas Position Summary Reports that are attached to this testimony. Financial hedging is 21 22 recorded on the general ledger, however, physical hedges are not required to be 23 separated.

> To isolate the cost of physical hedges, I used the Company's answer to Staff data request number 31 to calculate the cost of physical hedging for each month in the review period. I have attached the spreadsheet as Schedule JSR-D-5. In this spreadsheet, the Company

<sup>17</sup> Page 16 of the Staff Report

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separated the true cost of natural gas by subtracting derivative losses and transportation charges. Dividing that total by the amount of natural gas consumed provides the natural gas cost/MMBtu. To calculate the cost of physical hedges, I inserted the spot market price that the Company paid in each month just below the cost/MMBtu line. This amount was generated from the monthly gas purchase report the Company submits each month as part of its FAC reporting requirements. Multiplying the spot price with the amount consumed provides the completely unhedged cost of natural gas for each month. Subtracting the "cost at spot price" from the "net actual commodity cost" determines the physical hedging total for each month. The sum of the physical hedging for the prudence review period is \$6,073,353. Adding the physical hedges with the financial hedging losses and the total amount of hedging losses for the 18 month prudence period is \$16,785,521 of which \$13,104,811 is attributable to Missouri ratepayers.

I explained earlier that the actual fuel cost from Staff's \$69 million fuel expense was \$49,677,485. The physical hedging of \$6,073,353 is included in the \$49 million because physical hedging is not required to be separated from the purchase price. The actual unhedged cost of natural gas for the period should be \$43,604,132. Staff reported that hedging losses represented 15% of Empire's total natural gas cost. When in actuality, Empire's hedging losses which were passed to the customers through the FAC represent 38.5% of actual natural gas fuel costs.<sup>18</sup>

### 20 **Q.** Can you summarize the argument for imprudence?

A. Empire's hedging is inefficient, ineffective, inflexible and very much imprudent.
 Empire developed its hedging policies in 2001 in a volatile natural gas market. The natural gas market has changed significantly but Empire's hedging strategy, by its own admission, has not changed at all.

<sup>18</sup> \$16,785,522/\$43,604,132

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When considering all the information that the Company had or should have had at its disposal, coupled with the rigid, 16 year old hedging policy that has not changed with the market's low gas prices and the adoption of an FAC, the Commission should find these transactions imprudent and return these imprudent hedging costs back to its customers with interest.

Q. Does this conclude your direct testimony?

A. Yes it does.



This series is available through the EIA open data API and can be downloaded to Excel or embedded as an interactive chart or map on your website.

					не	nry Hub	Naturai	Gas Sp	ot Price (	Dollars p	ber willio	n Btu)
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1997	3.45	2.15	1.89	2.03	2.25	2.20	2.19	2.49	2.88	3.07	3.01	2.35
1998	2.09	2.23	2.24	2.43	2.14	2.17	2.17	1.85	2.02	1.91	2.12	1.72
1999	1.85	1.77	1.79	2.15	2.26	2.30	2.31	2.80	2.55	2.73	2.37	2.36
2000	2.42	2.66	2.79	3.04	3.59	4.29	3.99	4.43	5.06	5.02	5.52	8.90
2001	8.17	5.61	5.23	5.19	4.19	3.72	3.11	2.97	2.19	2.46	2.34	2.30
2002	2.32	2.32	3.03	3.43	3.50	3.26	2.99	3.09	3.55	4.13	4.04	4.74
2003	5.43	7.71	5.93	5.26	5.81	5.82	5.03	4.99	4.62	4.63	4.47	6.13
2004	6.14	5.37	5.39	5.71	6.33	6.27	5.93	5.41	5.15	6.35	6.17	6.58
2005	6.15	6.14	6.96	7.16	6.47	7.18	7.63	9.53	11.75	13.42	10.30	13.05
2006	8.69	7.54	6.89	7.16	6.25	6.21	6.17	7.14	4.90	5.85	7.41	6.73
2007	6.55	8.00	7.11	7.60	7.64	7.35	6.22	6.22	6.08	6.74	7.10	7.11
2008	7.99	8.54	9.41	10.18	11.27	12.69	11.09	8.26	7.67	6.74	6.68	5.82
2009	5.24	4.52	3.96	3.50	3.83	3.80	3.38	3.14	2.99	4.01	3.66	5.35
2010	5.83	5.32	4.29	4.03	4.14	4.80	4.63	4.32	3.89	3.43	3.71	4.25
2011	4.49	4.09	3.97	4.24	4.31	4.54	4.42	4.06	3.90	3.57	3.24	3.17
2012	2.67	2.51	2.17	1.95	2.43	2.46	2.95	2.84	2.85	3.32	3.54	3.34
2013	3.33	3.33	3.81	4.17	4.04	3.83	3.62	3.43	3.62	3.68	3.64	4.24
2014	4.71	6.00	4.90	4.66	4.58	4.59	4.05	3.91	3.92	3.78	4.12	3.48
2015	2.99	2.87	2.83	2.61	2.85	2.78	2.84	2.77	2.66	2.34	2.09	1.93
2016	2.28	1.99	1.73	1.92	1.92	2.59	2.82	2.82	2.99	2.98	2.55	3.59
2017	3.30	2.85	2.88	3.10								

#### Henry Hub Natural Gas Spot Price (Dollars per Million Btu)

Schedule JSR-D-1

## EO-2017-0065

**Empire District Electric** 

Schedule JSR-D-2

has been deemed

"Highly Confidential"

in its Entirety

The Empire District ELECTRIC Company													
Gas Position Summary as of December 31, 2011													
	January	February	March	Apr-Dec	Jan-Dec	Year 2013	Year 2014	Year 2015	Year 2016	Net			
	2012	2012	2012	2012	2012	40% min	20% min	10% min	0% min	All Years			
Budget DTh (3)	559,136	486,011	379,467	4,781,112	6,205,726	8,338,329	7,850,700	10,249,828	-	32,644,583			
Expected DTh (3)	573,561	634,152	337,725	4,864,967	6,410,405	7,937,162	8,515,810	9,283,249	9,699,357	41,845,982			
Policy minimum hedged DTh (2)	344,137	380,491	202,635	2,918,980	3,846,243	3,174,865	1,703,162	928,325	-	9,652,594			
Policy maximum hedged DTh	573,561	634,152	337,725	4,864,967	6,410,405	6,349,730	6,812,648	7,426,599	7,759,486	34,758,867			
Amount Hedged from Upside Volatility Dth	410,000	200,000	100,000	3,221,000	3,931,000	3,460,000	1,700,000	1,010,000	-	10,101,000			
percentage	71%	32%	30%	66%	61%	44%	20%	11%	0%	24%			
Average Cost per Dth hedged	7.170	6.133	7.295	6.363	6.459	6.079	5.514	5.439	0.000	6.068			
Net All Positions \$ (1)	(1,684,860)	(647,700)	(437,400)	(10,232,088)	(13,002,048)	(7,797,560)	(2,224,875)	(919,720)	-	(23,944,203)			
PHYSICAL HEDGES													
Purchased Dth	100,000	200,000	100,000	2,111,000	2,511,000	2,020,000	460,000	-	-	4,991,000			
Purchased \$	729,500	1,226,500	729,500	12,920,215	15,605,715	12,933,800	2,420,575	-	-	30,960,090			
Purchased \$/DTh	7.295	6.133	7.295	6.120	6.215	6.403	5.262	0.000	0.000	6.203			
Market \$	298,900	578,800	292,100	6,490,657	7,660,457	7,572,510	1,834,640	-	-	17,067,607			
Market \$/Dth (on Southern Star Pipeline)	2.989	2.894	2.921	3.075	3.051	3.749	3.988	0.000	0.000	3.420			
Difference (\$) versus current market	(430,600)	(647,700)	(437,400)	(6,429,558)	(7,945,258)	(5,361,290)	(585,935)	-	-	(13,892,483)			
FINANCIAL HEDGES													
Swap/Futures Dth Purchased	310,000	-	-	1,110,000	1,420,000	1,440,000	1,240,000	1,010,000	-	5,110,000			
Net Cost, \$/Dth	7.130	0.000	0.000	6.824	6.891	5.625	5.607	5.439	0.000	5.935			
Market \$/Dth (at Swap location)	3.084	0.000	0.000	3.398	3.330	3.933	4.285	4.528	0.000	3.968			
Difference (\$) versus current market	(1,254,260)	-	-	(3,802,530)	(5,056,790)	(2,436,270)	(1,638,940)	(919,720)	-	(10,051,720)			

Note 1: Market data using NYMEX Close Prices as of December 30, 2011.

Note 2: Policy minimums are 12/31/2011 targets.

Note 3: For 2011 through 2015, Budgeted Dth are from FINAL FPP Budget for 2011 (Planning & Regulatory, 9/28/2010). For Dec 2011, Expected Dth were revised to Updated Outage schedule scenario (P&R 1/31/2011). For 2012-2016, Expected Dth are from PRELIMINARY F&PP scenario (Planning & Regulatory as of 10/13/2011).

Note 4: Empire currently has no positions utilizing "options" and therefore the options section of this report is not shown.

Note 5: Storage and Park&Loan balance and usage are estimates based on most current information available.

Storage I	Estimates
Balance Dth	667,149
WACOG \$/Dth	4.367

# EO-2017-0065

**Empire District Electric** 

Schedule JSR-D-4

has been deemed

"Proprietary"

in its Entirety

#### EO-2017-0065 DR 0031

#### Natural Gas Costs March 2015 - August 2016

······································	Mar-15		Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	-
Total Consumed - MMBTU	916,85	54	222,659	268,657	1,242,552	1,442,694	1,223,154	869,591	599,446	796,983	440,618	597,699	757,364	832,003	1,144,181	1,505,891	2,115,056	1,945,303	1,927,961	
Total Cost	\$3,387,281.8	87 \$	1,272,889.69	\$1,738,915.73	\$4,764,616.69	\$6,965,292.32	\$6,146,807.28	\$3,174,925.43	\$1,921,173.76	\$2,632,883.85	\$2,723,663.65	\$2,598,424.16	\$2,311,986.99	\$1,747,597.65	\$2,638,182.40	\$4,369,629.17	\$6,317,200.23	\$7,194,427.22	\$7,395,930.06	\$ 69,301,828.15
Less:																				
(Gain)/Loss on Derivatives	134,743.2	28	170,200.71	321,334.24	529,205.00	2,204,861.36	1,962,497.82	147,777.20	-	206,951.00	1,168,463.85	739,103.70	386,806.78	201,600.00	-	127,378.97	229,222.67	1,077,502.51	1,104,519.40	\$ 10,712,168.49
Firm Transportation	476,256.6	64	352,320.06	546,647.97	569,347.48	518,730.86	573,252.93	557,767.18	519,453.18	488,351.37	508,546.29	429,327.79	318,526.79	189,063.79	305,648.63	524,762.02	528,929.78	473,757.11	527,464.73	
Commodity Transportation	40,323.9	91	6,260.45	6,260.45	6,515.30	43,152.70	34,383.26	26,422.41	23,612.42	12,797.21	15,474.22	11,143.27	19,230.53	18,987.58	28,656.83	33,416.24	31,323.02	60,324.75	44,096.70	
Other Costs	238.3	31	763.79	1,189.50	2,310.49	1,590.09	822.49	1,492.10	11,393.61	9,720.28	2,098.04	1,965.68	1,074.18	325.20	1,116.18	517.06	2,574.16	2,203.10	244.52	
Net Actual Commodity Cost	\$2,735,719.7	73 \$	743,344.68	\$ 863,483.57	\$3,657,238.42	\$4,196,957.31	\$3,575,850.78	\$2,441,466.54	\$1,366,714.55	\$1,915,063.99	\$1,029,081.25	\$1,416,883.72	\$1,586,348.71	\$1,337,621.08	\$2,302,760.76	\$3,683,554.88	\$5,525,150.60	\$5,580,639.75	\$5,719,604.71	\$ 49,677,485.03
Cost/ Mmbtu	¢ 200	01 ¢	2 2 2 0	¢ 2.214	¢ 2042	¢ 2.000	¢ 2.022	¢ 2000	¢ 2.200	¢ 2.402	¢ ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	¢ 0.071	¢ 2.005	¢ 1.609	¢ 2.012	¢ 2446	¢ 2612	¢ 2.960	¢ 2.067	
Spot Purchases from Gas Purchse Rpt	\$ 2.54	46 \$	2.319	\$ 2.676	\$ 2.561	\$ 2.690	\$ 2.640	\$ 2.480	\$ 2.153	\$ 1.976	\$ 2.342	\$ 2.325	\$ 1.806	\$ 1.520	\$ 1.732	\$ 1.807	\$ 2.383	\$ 2.562	\$ 2.562	
Cost at Spot Price	\$2,334,310.2	28 \$	516,346.22	\$ 718,926.13	\$3,182,175.67	\$3,880,846.86	\$3,229,126.56	\$2,156,585.68	\$1,290,607.24	\$1,574,838.41	\$1,031,927.36	\$1,389,650.18	\$1,367,799.38	\$1,264,644.56	\$1,981,721.49	\$2,721,145.04	\$5,040,178.45	\$4,983,866.29	\$4,939,436.08	
Physical Hedging Costs	\$ 401,409.4	45 \$	226,998.46	\$ 144,557.44	\$ 475,062.75	\$ 316,110.45	\$ 346,724.22	\$ 284,880.86	\$ 76,107.31	\$ 340,225.58	\$ (2,846.11)	\$ 27,233.55	\$ 218,549.33	\$ 72,976.52	\$ 321,039.27	\$ 962,409.84	\$ 484,972.15	\$ 596,773.46	\$ 780,168.63	\$ 6,073,353.16
Total Cost of Fuel at spot prices Total Hedging Costs																				\$ 43,604,131.88 <b>\$ 16,785,521.65</b> 38 50%
Proof:																				00.0076
Cost - Gas & Commodity Charges	2,948,684.2	24	701,070.28	869,844.87	3,661,003.66	4,203,280.97	3,620,038.08	2,477,432.88	1,402,541.18	1,945,777.22	1,030,880.66	1,432,510.27	1,604,381.70	1,354,576.29	2,196,903.52	3,817,213.45	5,567,307.76	5,612,610.59	5,751,903.50	
Cost - Gas & Commodity Chg (Adj)	(172,640.6	60)	48,534.85	(100.85)	2,750.06	36,829.04	(9,804.04)	(9,543.93)	(12,214.21)	(17,916.02	13,674.81	(4,483.28)	1,197.54	2,032.37	134,514.07	(100,242.33)	) (10,834.14)	28,353.91	11,797.91	
	2,776,043.6	64	749,605.13	869,744.02	3,663,753.72	4,240,110.01	3,610,234.04	2,467,888.95	1,390,326.97	1,927,861.20	1,044,555.47	1,428,026.99	1,605,579.24	1,356,608.66	2,331,417.59	3,716,971.12	5,556,473.62	5,640,964.50	5,763,701.41	
From Above:	40.000	~ ~	0.000.45	0 000 45	0.545.00	40 450 70				10 707 04	15 171 00		10 000 50	40.007.50		~ ~ ~ ~ ~ ~ ~		00 00 1 75	44 000 70	
Line 14 Commodity Transport	40,323.9	91 72	6,260.45	6,260.45	6,515.30	43,152.70	34,383.26	26,422.41	23,612.42	12,797.21	15,474.22	11,143.27	19,230.53	18,987.58	28,656.83	33,416.24	31,323.02	60,324.75	44,096.70	
Line 17 Commodity Cost	2,735,719.7	64	740,044.08	860 744 02	3 663 753 72	4,190,957.31	3,575,850.78	2 467 888 05	1 300 326 07	1 027 861 20	1,029,081.25	1 4 10,883.72	1,000,348.71	1 356 608 66	2,302,760.76	3 716 071 12	5,520,150.60	5,000,039.75	5 763 701 41	-
	2,170,043.0		743,005.13	003,744.02	3,003,733.72	4,240,110.01	3,010,234.04	2,401,000.95	1,000,020.97	1,327,001.20	1,044,000.47	1,420,020.99	1,003,379.24	1,000,000.00	2,001,417.09	5,710,971.12	3,330,473.02	3,040,904.00	3,703,701.41	=
Difference - Should be zero	0.0	00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	