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Issue(s):	FAC
Witness/Type of Exhibit:	Riley/Surrebuttal
Sponsoring Party:	Public Counsel
Case No.:	EO-2017-0065

SURREBUTTAL 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 ****

July 28, 2017

HC

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

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)
) ss
COUNTY OF COLE)

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

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 surrebuttal 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 28th day of July 2017.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI
JERENE A. BUCKMAN
My Commission Expires
August 23, 2017
Cole County
Commission #13754037

Jerene A. Buckman
Notary Public

My Commission expires August 23, 2017.

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SURREBUTTAL TESTIMONY

OF

JOHN S. RILEY

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EO-2017-0065

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. Are you the same John S. Riley that filed direct and rebuttal testimony in this case?

A. Yes I am.

Q. What is the purpose of your surrebuttal testimony?

A. Due to Company witnesses' contradictory and misleading rebuttal testimony, I find it important to reiterate the major points that OPC has developed in arguing that the Empire District Electric Company's ("Empire" or "Company") hedging policy and practices are imprudent due to inflexible and rigid purchasing mandates and have harmed ratepayers with unnecessary hedging costs that have been shouldered by the customers. Company witnesses spend a great deal of print nitpicking my testimony for error instead of laying out a convincing argument that its hedging is prudent. It appears to me that the Company's tactic is to distract the Commission from the bigger picture.

Q. Please state and explain each argument that OPC has against Empire's hedging policy and practices.

A. First, the policy is too rigid and inflexible for the low price and low volatility natural gas environment that has existed since 2011. As pointed out in direct testimony, Empire's hedging policy was never intended to protect ratepayers from upward price volatility but the goal was to provide budgetary certainty to the Company between rate cases. Empire's policy of purchasing natural gas contracts and derivatives five years in advance only because an out-of-date, 16-year old hedging strategy is dictating your actions is imprudent and has caused ratepayers harm. OPC contends that the Company should not have hedged for this prudence review period at all.

Secondly, the Company knew prices were declining and did not adjust the type of purchases, the amount of purchases, or the timing of those purchases, and the ratepayer suffered harm because of the Company's disregard for the market's changing conditions. I have quoted sources from as far back as 2011 that indicated natural gas inventory levels were elevated and as a result the natural gas prices would be coming down, or as in the case of the Energy Information Administration (EIA) graph on page 9 of my rebuttal testimony, prices would not reach the Company's hedged price for more than a decade. Even more telling is the Company's own updates to the Commission that point out declining prices, and Company witnesses recognizing that hedging in that market environment would produce losses, yet Empire did not alter its hedging practices.

Third, Company personnel readily admit they do not adjust its hedging strategy for changes in market dynamics which has caused over $13 million in losses that the ratepayer has been subsidizing through the fuel adjustment clause ("FAC").

The Commission should find that a reasonable person would behave in a manner that would reflect decision making that would personally affect them, would not have hedged in that market.

REBUTTAL OF BLAKE MERTENS

Q. How have Company witnesses contradicted their own arguments that Empire's hedging has been prudent?

A. In Mr. Mertens rebuttal testimony, he questions my assertion that continued inventory levels near or above the five-year average has suppressed prices and will prevent price spikes. Mr. Mertens is arguing against the fundamental economics of supply and demand. Near record inventory levels is just an indication that supply is outpacing demand. It is generally accepted that an oversupply of a product will cause producers to cut prices to increase demand and help reduce inventory levels. If inventory levels stay high, prices will continue to stay low.

Q. Please explain the contradiction.

A. As was pointed out on page 10 and 11 of my rebuttal testimony; the Company updated its integrated resource plan ("IRP") in March 2012, three years before this prudence review period. Empire explained that fuel price estimates have been significantly reduced due to the increased gas production from horizontal gas drilling. The contradiction occurs when Mr. Mertens attempts to rebut my position, but his own Company uses OPC reasoning when updating the annual IRP that was presented to the Commission:

> The added production has boosted natural gas supplies in storage facilities underground to levels that are about **40 percent higher than the five-year average, according to the Energy Department. According to the U.S. Energy Information Administration (EIA)** Short-Term Energy Outlook (February 7, 2012), natural gas spot prices averaged $2.67 per MMBtu at the Henry Hub in January 2012, down $0.50 per MMBtu from the December 2011 average and the lowest average monthly price since 2002. **Abundant storage levels, as well as ample supply, have contributed to the recent low prices.** EIA expects the Henry Hub spot price will begin to recover after this winter's inventory draw season ends and will average $3.35 per MMBtu in 2012 and

> $4.07 per MMBtu in 2013. One of the factors contributing to recent downward movements in natural gas prices has been unusually warm weather throughout much of the United States during the winter of 2011-2012, which has the effect of depressing natural gas demand for space heating. **Natural gas working inventories continue to set new record seasonal highs and ended January 2012 at an estimated 2.86 trillion cubic feet (Tcf), about 24 percent above the same time last year**[1] (Emphasis added).

The Company's updated IRP points out that above-average storage levels and excess supply is the reason for the lower prices. Empire also mentions the information comes from the EIA, the most authoritative agency when it comes to information regarding energy related matters and the report even mentions *Short-Term Energy Outlook* publications that I refer to in my rebuttal testimony. Mr. Mertens contends that my reliance on storage volume is an unacceptable method in forecasting future prices yet his Company lowered its pricing estimates for the very same reasons that I provided.

Q. Mr. Mertens includes a Table BAM-2 in his rebuttal testimony that he contends indicates that these were the forecasted prices for 2015 listed on the NYMEX Futures Exchange five years prior to the prudence review period and that this is a better indication of the expected prices for the periods in question. Do you agree?

A. No. The NYMEX Futures market is simply a market created to transfer price risk. Just because the word "Future" is in the description of the market it does not mean it is an accurate forecast of future prices. This is another instance of Empire witnesses contradicting each other's testimony.

Q. Please explain the contradiction.

A. Mr. Mertens provided no footnotes or references to the authenticity of his table which I reproduced below, but the table does raise two interesting questions.

[1] EO-2012-0294, 2012 Integrated Resource Plan Annual Update Report, Page 6 and Riley Rebuttal, page 10 line 25 through line 10 Page 11

Futures Months	1/29/2010	2/26/2010	3/31/2010	4/30/2010	5/28/2010	6/30/2010	7/30/2010	8/27/2010	9/30/2010	10/29/2010	11/26/2010	12/31/2010
1/1/2015	7.405	7.200	7.060	7.094	6.972	6.739	6.264	6.376	5.929	5.933	6.122	5.983
2/1/2015	7.385	7.175	7.025	7.054	6.927	6.694	6.209	6.331	5.884	5.888	6.082	5.938
3/1/2015	7.170	6.955	6.825	6.854	6.727	6.494	6.029	6.156	5.709	5.713	5.912	5.760
4/1/2015	6.570	6.365	6.345	6.384	6.247	6.049	5.594	5.821	5.344	5.348	5.562	5.402
5/1/2015	6.525	6.320	6.305	6.349	6.212	6.019	5.569	5.806	5.334	5.333	5.549	5.390
6/1/2015	6.590	6.380	6.365	6.407	6.270	6.077	5.604	5.836	5.362	5.355	5.573	5.410
7/1/2015	6.665	6.455	6.440	6.479	6.340	6.147	5.656	5.881	5.404	5.390	5.613	5.452
8/1/2015	6.730	6.520	6.505	6.544	6.403	6.210	5.704	5.929	5.452	5.430	5.653	5.492
9/1/2015	6.765	6.555	6.540	6.577	6.436	6.243	5.729	5.954	5.477	5.450	5.673	5.512
10/1/2015	6.870	6.660	6.645	6.679	6.538	6.345	5.814	6.034	5.557	5.528	5.748	5.587
11/1/2015	7.125	6.910	6.895	6.929	6.776	6.580	6.014	6.224	5.742	5.708	5.926	5.757
12/1/2015	7.400	7.185	7.175	7.209	7.038	6.840	6.234	6.434	5.947	5.910	6.141	5.972

	2015 NYMEX Henry Hub Futures as of											
Futures Months	1/28/2011	2/25/2011	3/31/2011	4/29/2011	5/27/2011	6/30/2011	7/29/2011	8/26/2011	9/30/2011	10/28/2011	11/25/2011	12/31/2011
1/1/2015	5.871	5.966	6.244	6.167	6.137	5.889	5.797	5.688	5.567	5.484	5.118	4.733
2/1/2015	5.838	5.936	6.224	6.142	6.117	5.855	5.765	5.653	5.532	5.450	5.083	4.705
3/1/2015	5.706	5.826	6.134	6.057	6.042	5.771	5.683	5.570	5.447	5.364	4.998	4.622
4/1/2015	5.431	5.576	5.864	5.757	5.757	5.486	5.423	5.311	5.217	5.154	4.775	4.444
5/1/2015	5.421	5.566	5.879	5.777	5.775	5.501	5.436	5.321	5.227	5.164	4.783	4.454
6/1/2015	5.441	5.586	5.909	5.807	5.815	5.536	5.469	5.349	5.255	5.192	4.811	4.481
7/1/2015	5.481	5.626	5.954	5.850	5.860	5.576	5.505	5.384	5.290	5.227	4.848	4.518
8/1/2015	5.514	5.661	5.994	5.882	5.897	5.609	5.535	5.408	5.312	5.249	4.870	4.538
9/1/2015	5.531	5.676	6.009	5.892	5.912	5.624	5.546	5.415	5.319	5.256	4.875	4.541
10/1/2015	5.601	5.746	6.069	5.944	5.962	5.672	5.588	5.445	5.349	5.286	4.905	4.576
11/1/2015	5.743	5.881	6.224	6.089	6.114	5.810	5.723	5.575	5.472	5.408	5.017	4.671
12/1/2015	5.948	6.091	6.464	6.329	6.364	6.042	5.957	5.798	5.697	5.635	5.244	4.881

First, why is a utility buying hedges over *four* years into the future? Before KCPL and GMO suspended their natural gas hedging programs, the companies extended hedging transactions out to 36 months. Neither Liberty Utilities nor Ameren Missouri hedge longer than three years out[2]. Empire Electric is the only Missouri utility that I know of that hedges past three years. Empire's hedging policy calls for a minimum of 10% hedged for the year 2015 by December 31 of 2011, yet Empire was buying 2015 futures in October of 2010. OPC has already argued that the Company's policy is imprudent, but Company's practice of buying futures even farther out than its own policy parameters is even more speculative, and may be an imprudent purchase regardless of any price or cost impact.

[2] Referencing Liberty and Ameren Hedging Presentations

Second, Mr. Mertens argues that OPC should consider the "forward curve" of the futures market as the indicator of what prices will be in the future. As I stated before, the NYMEX futures market is a transfer of price risk and not a forecaster of future prices. The reason why a "forward curve" is a poor predictor of natural gas prices four or five years down the road is due to a lack of liquidity in the market that far into the future. I will explain market liquidity and the speculative nature of forward prices by using Mr. Doll's NYMEX table AD-2 on page 6 of his rebuttal testimony.

Commodity Futures Price Quotes For
Natural Gas (NYMEX)
(Price quotes for NYMEX Natural Gas delayed at least 10 minutes as per exchange requirements)
Also available: electronic Session Quotes
Trade Natural Gas now with:

REFRESH DATA

Click for Chart	Current Session								Prior Day		Opt's
	Open	High	Low	Last	Time	Set	Chg	Vol	Set	Op Int	
Jul'17	-	3.082	3.021	3.037	18:01 Jun 16	3.037	-0.019	119322	3.056	141820	Call Put
Aug'17	-	3.102	3.042	3.060	18:01 Jun 16	3.060	-0.018	76977	3.078	227329	Call Put
Sep'17	-	3.087	3.034	3.047	18:01 Jun 16	3.047	-0.017	31022	3.064	181116	Call Put
Oct'17	-	3.108	3.057	3.070	18:01 Jun 16	3.070	-0.016	24075	3.086	177414	Call Put
Nov'17	-	3.172	3.124	3.136	18:01 Jun 16	3.136	-0.014	12159	3.150	72402	Call Put
Dec'17	-	3.304	3.263	3.272	18:01 Jun 16	3.272	-0.011	7801	3.283	65253	Call Put
Jan'18	-	3.387	3.349	3.356	18:01 Jun 16	3.356	-0.010	11994	3.366	108998	Call Put
Feb'18	-	3.367	3.327	3.337	18:01 Jun 16	3.337	-0.011	3699	3.348	45716	Call Put
Mar'18	-	3.308	3.266	3.275	18:01 Jun 16	3.275	-0.012	8748	3.287	76466	Call Put
Apr'18	-	2.904	2.878	2.882	18:01 Jun 16	2.882	-0.015	11441	2.897	84096	Call Put
May'18	-	2.869	2.844	2.847	18:01 Jun 16	2.847	-0.015	3557	2.862	34940	Call Put
Jun'18	-	2.896	2.872	2.876	18:01 Jun 16	2.876	-0.014	847	2.890	20420	Call Put
Jul'18	-	2.923	2.905	2.904	18:01 Jun 16	2.904	-0.013	2065	2.917	25336	Call Put
Aug'18	-	2.929	2.908	2.911	18:01 Jun 16	2.911	-0.014	1119	2.925	16999	Call Put
Sep'18	-	2.903	2.884	2.888	18:01 Jun 16	2.888	-0.015	1275	2.903	17061	Call Put
Oct'18	-	2.920	2.900	2.904	18:01 Jun 16	2.904	-0.016	2383	2.920	39682	Call Put
Nov'18	-	2.960	2.952	2.952	18:01 Jun 16	2.952	-0.017	1040	2.969	20479	Call Put
Dec'18	-	3.095	3.082	3.084	18:01 Jun 16	3.084	-0.015	983	3.099	21878	Call Put
Jan'19	-	3.182	3.172	3.170	18:01 Jun 16	3.170	-0.016	2021	3.186	11206	Call Put
Feb'19	-	3.163	3.154	3.146	18:01 Jun 16	3.146	-0.016	690	3.162	3505	Call Put
Mar'19	-	-	-	3.096	18:01 Jun 16	3.080	-0.016	820	3.096	4808	Call Put
Apr'19	2.720	2.720	2.720	2.726	18:01 Jun 16	2.726	-0.009	473	2.735	4655	Call Put
May'19	2.684	2.684	2.684	2.681	18:01 Jun 16	2.681	-0.009	18	2.690	1551	Call Put
Jun'19	-	-	-	2.716	18:01 Jun 16	2.709	-0.009	-	2.718	1406	Call Put
Jul'19	-	-	-	2.746	18:01 Jun 16	2.739	-0.009	-	2.748	1205	Call Put
Aug'19	-	-	-	2.760	18:01 Jun 16	2.753	-0.009	16	2.762	1160	Call Put
Sep'19	-	-	-	2.753	18:01 Jun 16	2.746	-0.009	-	2.755	1115	Call Put
Oct'19	-	-	-	2.778	18:01 Jun 16	2.771	-0.009	-	2.780	2149	Call Put
Nov'19	-	-	-	2.853	18:01 Jun 16	2.846	-0.009	-	2.855	1345	Call Put
Dec'19	-	-	-	3.001	18:01 Jun 16	2.991	-0.009	2	3.000	1350	Call Put

Liquidity in the NYMEX natural gas market can be explained as the amount of buying and selling (volume) of contracts for any given timeframe. The timeframe is usually a month. Reviewing the schedule above, you can see that there is a large amount of volume in the early months of 2017. There is a great deal of buying and selling. These are very *liquid* timeframes. A high amount of liquidity fortifies the going price for natural gas in that month - there is buying and selling in a narrow price range so the price is well established. As can be seen towards the bottom of this schedule, after Apr'19, there is less and less volume (liquidity) as the timeframe gets farther and farther from the current month. With very few buyers and sellers; the expected price is less certain and is subject to unproven price support.

The contradiction here is that Mr. Mertens contends that his schedule demonstrates the expected price for 2015 natural gas way back in 2010. Mr. Doll's schedule tells us that there is very little liquidity after 24 months and, therefore, not enough buyers and sellers 50 or 60 months in the future to accurately forecast the future price. To say that the forward curve for January 2015 natural gas was $6.74 MMBtu is purely speculative because there is not an active market for natural gas that far into the NYMEX Futures Market[3]. Mr. Mertens' own tables demonstrate that the NYMEX is a poor predictor of future prices by noting that in January 2010 the price for January 2015 natural gas was $7.40 but in January of 2011, the futures price for January 2015 natural gas was $5.87. That is a 21% drop in one year.

It is interesting to note that Mr. Mertens argues that the Company was not imprudent because it was purchasing at a price that was listed on the NYMEX futures market. OPC has already pointed out that the future curve is not a good indicator of future prices so OPC wants to reiterate that Empire's policy should have the flexibility to avoid and not purchase at inflated prices, hence our contention that Empire's policy and practices are imprudent.

[3] I used the June 2010 month end $6.739 from Mr. Mertens table as the reference for the January 2015 pricing.

REBUTTAL OF AARON DOLL

Q. Empire witness Aaron Doll's rebuttal testimony at the top of page 2 describes Empire's hedging as a "ladder approach" that "provides maximum level volumetric thresholds... with the ability to procure above the bands if desired." Mr. Doll states "this structure allows for strategic input to vary amount of natural gas hedged." Is this description concerning?

A. Yes. Mr. Doll appears to be saying Empire's approach is a one-way ladder that can only be climbed upward with more hedges and more expense to the ratepayer. In other words, the flexibility touted by Mr. Doll allows only for *more* hedging and not less hedging. This is another indication that Empire's inflexible hedging will never result in less hedging even where hedging less than Empire's strict programmatic approach is clearly the prudent decision.

Q. Mr. Doll responded to your direct testimony example where Empire hedged 1 million Dekatherm at $5.44/MMBtu. He stated that the transactions in question were acquired in five transactions, not one transaction. Assuming Mr. Doll is correct, does this change the point you made in direct testimony with this example?

A. No, but I do need to make a slight correction to my direct testimony I mentioned the 2011 December Gas Position Report because the Company's hedging policy requires that a minimum of 10% of the 2015 expected gas burn be hedged by the end of December 31, 2011. I should have used the word "by" instead of "in December of 2011" when referring to the gas purchased at $5.44/MMBtu. The Company had 11% of the 2015 gas requirements hedged by the end of December 31, 2011. An incorrect word choice does not change the fact that the Company employs a "lock and leave" strategy that hedged well in advance of the settlement date even though it acknowledge that natural gas prices were falling. Empire experienced hedging losses in every month of the prudence review period, which were then passed through to the customers, because the hedging policy required the Company to hedge.

Q. Mr. Doll responds to your example of the 1 million Dekatherm purchase by including a table that he says shows Empire was "in the money" at the time of the transactions as indicated by the forward curves leading up to the hedge transaction dates (p.3). What does Mr. Doll mean when he says Empire was "in the money" and do you agree with his testimony?

A. I'm not completely sure what Mr. Doll is describing. The term "in the money" is defined by Investopedia.com as "**In the money** means that a call option's strike price is below the market price of the underlying asset or that the strike price of a put option is above the market price of the underlying asset. Being **in the money** does not mean you will profit, it just means the option is worth exercising."

Another way to describe the phrase is **"in the money"** refers to an option contract that, if it were exercised today, would be worth more than $0.

If I understand Mr. Doll's statement correctly, then I would agree that it is a self-fulfilling prophecy.

Q. Please explain.

A. Both Mr. Doll and Mr. Mertens have argued that the forward curve is the appropriate future price to use when placing hedges. To place hedge purchases at the forward curve price and then later argue that your purchase was "in the money" at the time of the transaction can hardly be challenged. Of course it is in the money. The point that needs to be emphasized is that purchasing contracts at the forward curve price four or five years in advance is nothing more than a bet. The Company is not placing hedging transactions that far in advance to protect the ratepayer. It has pointed out in the Hedging Section of the Risk Management Policy ("RMP") that it makes these transactions for budgetary certainty and regulatory lag.[4] It could care less what price is locked up in 2010 or 2011 for natural gas that will be delivered in 2015 because the ratepayer will reimburse them through the FAC no matter how bad a bet the Company made.

Let us review some of the transactions that Mr. Doll has referred to above and see how the Company disregards prudent purchases for the sake of forecasting certainty. Below is a table from Empire's October 2010 *Company Gas Position Report*. These were purchases made in October for various dates but the last two are for periods within the prudence review period. It is my understanding that these are financial swaps placed with either Wells Fargo or Bank of America. Swaps are financial transactions that exchange a floating price for a constant price to come due on a particular date (swapping cash flows). It is my understanding that swaps are more negotiable due to the more individual nature of the transaction as opposed to purchasing futures on the NYMEX futures market. The far column on the right in the below table is the Market Price which I believe is the forward curve that Mr. Doll and Mr. Mertens contend is the price that should be relied on to determine if a hedge is "in the money." The interesting fact concerning this table is that Empire's 10/29/2010 purchases for June and July of 2015 were purchased above the Market Price. The Market Price is approximately 30 cents more than what the Company will actually pay when it buys natural gas from the Southern Star Pipeline.[5]

[4] 2003 RMP, opening paragraph of the Section 4 Hedging Strategy
[5] Information gathered from the "market details" tab on the monthly Gas Position Reports

Transaction Date	Delivery Date	Settlement Date	Trade Ticket	Supplier	DTh	Av. Price	Contract $	Basis (1=Nymex, 2=S Star, 3=PEPL)	Market Price
10/19/2010	1/1/2013	12/27/2012	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.623
10/19/2010	2/1/2013	1/29/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.579
10/19/2010	3/1/2013	2/26/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.421
10/19/2010	4/1/2013	3/27/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.106
10/19/2010	5/1/2013	4/26/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.091
10/19/2010	6/1/2013	5/29/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.111
10/19/2010	7/1/2013	6/26/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.151
10/19/2010	8/1/2013	7/29/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.186
10/19/2010	9/1/2013	8/28/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.206
10/19/2010	10/1/2013	9/26/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.281
10/19/2010	11/1/2013	10/29/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.453
10/19/2010	12/1/2013	11/26/2013	BB29E	Wells Fargo	70,000	5.36	375,200	1	5.655
10/21/2010	6/1/2014	6/26/2014	BB31E	B of A	100,000	5.24	524,000	1	5.238
10/21/2010	7/1/2014	7/29/2014	BB31E	B of A	200,000	5.285	1,057,000	1	5.274
10/21/2010	8/1/2014	8/27/2014	BB31E	B of A	200,000	5.33	1,066,000	1	5.309
10/29/2010	**7/1/2015**	**6/26/2015**	**BB32E**	**B of A**	**200,000**	**5.50**	**1,100,000**	**1**	**5.390**
10/29/2010	**8/1/2015**	**7/29/2015**	**BB32E**	**B of A**	**200,000**	**5.50**	**1,100,000**	**1**	**5.430**

This begs the question, why did the Company negotiate a natural gas price above the Forward Curve? Why would the Company be compelled to make that arrangement four years and eight months before the settlement date when Henry Hub spot price for that day was $3.36 MMBtu? The answer is that the Empire only cares about price certainty and not whether it is prudent to make the transaction from an end-user's perspective.

Q. Mr. Doll is critical of your references to Henry Hub spot prices rather than the futures price (pp. 4-5). He states your analysis is flawed because Empire does not have fixed transportation contracts at Henry Hub, and instead sources its fixed contracts from the Southern Star Central Gas Pipeline ("SSCGP"). Has he confused the issue?

A. Yes. References to the Henry Hub pipeline interchange are rarely used to indicate an actual delivery of natural gas. Rather, the Henry Hub is the benchmark daily natural gas settlement price. Normally, the natural gas purchased or sold at Henry Hub through a NYMEX futures contract is financial in nature and the transaction is unrelated to an electric utility's actual purchase of natural gas to fuel its generation plants.[6] The average monthly spot price at Henry Hub helps illustrate this point. If it is October of 2010 and the current spot price is $3.36, should Empire unquestionably purchase natural gas for $5.50 to be settled in July of 2015? OPC argues that there was nothing in that present moment to indicate that a hedge needed to be made for 63.7% more than the current price four years and eight months into the future.

Mr. Doll does bring up an interesting point. Empire purchases its gas from the SSCGP which normally has a cheaper price, usually 20 to 30 cents cheaper than Henry Hub quoted settlement prices. However, financial gains and losses on swaps/futures contracts are determined using the Henry Hub price for settlement purposes. OPC has calculated financial losses of $10,712,168.00 based on the Henry Hub settlement price. If losses were calculated on the SSCGP prices, the loss would be even greater due to the even lower pricing activity from that pipeline.

Q. Mr. Doll argues that hedging losses that equal 38.5% of the cost of natural gas during the 18 month prudence review period does not accurately reflect the impact of the Company's hedging program. How do you respond?

[6] NYMEX began using Henry Hub Natural Gas Futures in April, 1990. From the CME Group article "Henry Hub Natural Gas Futures: Global Benchmark"

A. Mr. Doll's answer to that question on page 10, line 11 of his rebuttal testimony is probably the most descriptive yet simple explanation that anyone could use to describe Empire's hedging philosophy: **"Empire utilizes hedges to lock in prices."** For the Company it has never been about protecting the ratepayer from upward price volatility and it has never really been about how much the Company actually pays for natural gas. It has always been about budgetary certainty and recovering its costs in rates.

Now having to respond to Mr. Doll's contention that the Commission should review the Company's hedging results over the life of the program is ironic.

Q. Please explain the irony.

A. When OPC submitted data requests to the Company asking for information concerning what information the Company relied on prior to the prudence period to formulate its hedging purchases for the prudence review timeframe, Empire objected to providing any information that was outside of the 18 month prudence review period. Now Mr. Doll seeks to have the Commission review the Company's entire history of financial hedging gains and losses. What I see as extremely frustrating is that Mr. Doll added this history lesson while judiciously leaving out key physical hedging losses so that the results look more favorable than the actual facts.

Q. What were the losses that Mr. Doll left out of his table?

A. The annual physical hedge totals were omitted from Mr. Doll's calculations. OPC understands that this docket is a prudence review for an 18 month timeframe from March 2015 through August of 2016, but Company witnesses are attempting to sway the Commission with a feel good story implying that Empire only lost $3.1 million in 15 years. Schedule JSR-S-1 has a more complete listing of gains/losses. When the physical hedging losses are included in the calculations, Empire lost approximately $41 million.[7] In fact since

[7] Month end Gas Position Reports were used to tabulate the monthly losses.

the Company was granted a FAC in September 2008 the losses from both physical and financial hedging losses are in excess of $95 Million. That alone is $11.5 million annually that the ratepayers have been saddled with since the FAC was granted to the Company.

Q. Claiming a $41 million loss is quite a bit different than Empire's assertion that it only had a $3.1 million lose over 15 years. Can you explain how you determined the physical hedging losses that are listed on your schedule?

A. Yes. In response to OPC data request 1327, Empire provided weekly Gas Position Reports from 2002 through 2016. I include in my direct testimony, as Schedule JSR-D-4 month-end reports for the prudence review period. I reviewed the month-end reports for every month from the beginning of 2003 through February 2015. To include all of the month-end reports to this testimony would be voluminous but to get an understanding of the format of the report you can view some selected reports in Schedule JSR-S-2.

Gas Position Reports list the total hedged amount for the month and then breakout physical hedging (forward contracts) and financial hedging (swaps and futures) into sections. The Physical Hedges section lists the amount purchased in Dekatherms ("Dth"), total cost of the purchase, price paid per Dth and the market price per Dth. The final line in the section is the difference between the contract price and the month end market price. This is the gain or loss calculated as of the date at the top of the report. The reports are always projecting the gains or losses for three months in advance. A December 31, 2015 report list January, February and March 2016 totals as of the known market price as of December 31.

What I did then is tabulate the listed amount of gain or loss for each month end for each year and listed the year-end totaled. To illustrate, I used the December 31, 2003 report to determine the gain/loss for January 2004. I used January 2004 to record the total for February, February month end for the March total and continue the process through November 2003 to determine the physical gain/loss for 2003. I did the same steps for each month and year from 2003 through February 2015 and then September through December

2016. The monthly totals for the 18 month prudence review period were calculated in the spreadsheet in Schedule JSR-D-5 from my direct testimony.

Q. How accurate are your annual totals?

A. Because I used the Company's prior month-end market prices there will be some variations in actual gain/loss due to the change in market price when the contract actually came due during the month. For example, the December 31, 2004 report lists a market price of $5.833 per Dth. The Southern Star pipeline price in January was listed on the January report as $5.763/Dth. So the actual gain/loss in the month of January when the contract came due would be adjusted by .07/Dth ($5.833 less $5.763) from the December month-end total. So in every month there will be some adjustment up or down when the contract is actually executed.

To have complete confidence in the gain/loss I would have to match the Southern Star Pipeline price for the day of the contract execution with the price/Dth set out in the contract much like I did with the prudence review months. That won't be necessary because OPC is not formulating an adjustment outside the prudence review period. This exercise was only completed because the Company interjected an incomplete picture of its hedging history in testimony. When the dust settled, an estimated $37.5 million had been lost to physical hedging transactions from 2003 through 2016.

Q. How should the Commission view the 38.5% hedging loss totals?

A. The 38.5% represent the losses within the prudence review period. There is no reliance on hindsight in OPC's arguments that Empire's hedging is imprudent. Since April of 2015 OPC has been arguing that the Company's hedging practices have been imprudent.[8] Having losses represent 38.5% of the cost of natural gas demonstrates that Empire Electric is ineffective as well as imprudent.

[8] ER-2016-0023, Company hedging policy was officially questioned in April, 2015 during an issues meeting with Staff and Company. Testimony was filed May 2, 2015

Q. Do you have any final remarks concerning Mr. Doll's rebuttal of your testimony?

A. Yes. Both Mr. Doll and Mr. Mertens display a table of what they contend is the October 2010 futures prices for NYMEX 2015 natural gas. They provide a weak argument that the forward curve is the price that should be relied on to determine future price estimates. They do not provide any justification or historical reference to show that the forward curve is accurate. They do not provide any facts demonstrating the reasonableness of using forward curves for future pricing. A quick review of the Company's Gas Position reports will reveal that NYMEX pricing for July 2015 prices in October of 2010 were $5.50. In October 2011 - $5.23, in 2012-$4.32, in 2013-$4.02, in 2014-$3.71 and finally in October 2015 the price was $2.34. The Company cannot make a case for the accuracy of pricing by using NYMEX forward curve prices. The EIA predicted lower prices, less volatility and were constantly updating their evaluations with the latest information throughout 2011, 2012 and 2013. The Company should have relied on those predictions and used a more flexible hedging plan to take advantage of the price reductions occurring in the natural gas market instead of programmatic order placement that cost the ratepayers over $13 million.

<u>**REBUTTAL OF ROBERT SAGER**</u>

Q. Mr. Robert Sager testifies primarily about the Risk Management Policy ("RMP") and the Risk Management Oversight Committee ("RMOC"). What is your takeaway from this discussion?

A. Mr. Sager misses the point of the case. He fails to argue that the Company has a prudent hedging plan; instead Mr. Sager spends a great deal of time explaining how the RMP is reviewed and has evolved as if the RMP is the focal point of this case. It is not. The OPC does not take issue with the RMP in general. Our argument is with Section 4, <u>HEDGING STRATEGY</u> pages 9 through 11 which OPC contends, with the exception of the opening paragraph, has not changed since 2003. The RMP may have gone through an evolution but the hedging section of the RMP is stagnant and has remained stagnant despite significant changes in the gas markets.

Q. Mr. Sager says he doesn't understand how you can refer to Empire's hedging strategy as "rigid" or "inflexible". How do you respond?

A. Empire has a hedging strategy that has not been revised since 2003 despite major changes in the volatility of the natural gas market. Within this hedging strategy, the only mention of monitoring is the "expected gas burn". There is no mention of any gas market scenarios, whether that would be disruptions, weather phenomenon, or abrupt forecast changes one way or the other. The only change mentioned is gas consumption and nothing else is listed that would alter the buying requirements.

Company personnel have a simple set of rules to follow when it comes to natural gas purchasing:

- Hedge a minimum of 10% of year four **expected gas burn**
- Hedge a minimum of 20% of year three **expected gas burn**
- Hedge a minimum of 40% of year two **expected gas burn**
- Hedge a minimum of 60% of year one **expected gas burn**

(Emphasis added)

These minimum percentages must be in place by December 31of each year. Nowhere in this section does it allow for purchases of less than these annual requirements. If the Company recalculates its expected gas burn and it indicates that it will burn more fuel than the Company previously expected, then Company personnel must hedge the appropriate amount to reach the new required percentage. Webster's defines "rigid" as: "Precise and accurate in procedure. Deficient in or devoid of flexibility."[9] The above quoted guidelines can hardly be described in any other way than rigid and inflexible.

[9] Merriam Webster's Collegiate Dictionary, tenth edition

Q. Mr. Sager contends (p. 5 lines 12-14) that "one of the strengths of Empire's hedging policy is that it allows for flexibility within the strategy based on market conditions without requiring constant revision to the policy." Is this similar to Mr. Doll's characterization that was discussed earlier in this testimony?

A. It is similar in that the only flexibility is to hedge more not less. What is bothersome about this statement is that there is no place within the hedging section of the RMP that Mr. Sager can point to that backs up his contention that hedging is based on market conditions. Empire absolutely does not place hedges based on market conditions. As Empire attested to in Docket EW-2013-0101 with its answer to Staff Question 10: Should utilities have a budget for their hedging programs? Why, or why not?

> Empire's response: It would depend upon the structure of the hedging program. For example, **Empire's historical hedging program has involved the dollar cost averaging of a predetermined percentage of its future natural gas requirements (as forecasted by our fuel and purchased power and customer demand budgeting processes) over multiple years.** This type of program does not involve the use of specific annual budgets for hedging. (Emphasis added)

The Company reinforces that stance with its answer to Staff Question 11: How active should electric utilities be in changing hedging positions or strategy based on new market conditions and new information?

> Empire's Response: Market conditions and new information should be monitored by the electric utilities, **but the hedging program should be designed to avoid wholesale changes in positions or strategy based on speculative forecasts of prices or future events.** (Emphasis added)

What these answers confirm is that Empire hedges for natural gas *volume* requirements without consideration of market conditions when making its hedging purchases which is why ratepayers are footing the bill for $13.1 million in this prudence review period.

Q. Mr. Sager states that you and OPC witness Charles R. Hyneman do not provide any examples of the rigidity or inflexibility of the Company's hedging policy. Can you point out any transactions that substantiate your claim?

A. Every transaction is geared toward satisfying the required year-end percentage level of the RMP and a review of Empire's purchases indicates the company is satisfying its hedging requirements. The first page of Schedule JSR-S-2 lists the Company's Gas Position Report for September 2012. In keeping with the requirements set out in the Hedging Section of the RMP, the Company must, by December 31, 2012, have 60% of the expected burn for 2013, 40% of 2014, 20% of 2015, and 10% of 2016 expected gas burns hedged. In September the hedging amounts were 51%, 25%, 15% and 4% respectively. By the end of October 2012, hedging purchases brought the percentages up to the year-end requirements of 60%, 40%, 20% and 10%. An interesting note to these 2012 year-end totals is that the Company recalculated its expected burn for 2014 and increased its expectations causing the year-end percentage to drop from 40% to 39%. However, by October 2013 the required percentage of 60% for 2014, 40% for 2015, 20% for 2016 and 10% for 2017 had all been met. Again in 2014, the percentages in September were 63% for 2015, 43% for 2016 but only 17% for 2017 and only 6% for 2018. As expected, in October the 2017 and 2018 percentages jump to 20% and 11% respectively. Every year, the Company meets its 60, 40, 20, 10 goals. It does not deviate from this rigid, inflexible requirement regardless of what the market conditions are at the time.

Q. Has the OPC satisfied the requirements under the Commission's prudency standard by raising serious doubt over the prudency of Empire's hedging practices?

A. Yes. OPC has not only raised serious doubt, but has demonstrated that a reasonable person would not have engaged in the hedging practices that Empire Electric has steadfastly followed. The Company has disregarded the changes in the natural gas markets and has not adjusted its hedging policy to reflect the stability in the gas markets. The Company's imprudence has caused $13.1 million in unnecessary losses that the Commission should return back to the ratepayer through the FAC.

Q. Are there any changes to your direct or rebuttal testimony that you would like to correct at this time?

A. Yes. My Schedule JSR-D-5 in direct testimony was the preliminary spreadsheet that calculated the Company's hedging losses during the prudence audit timeframe. Steps were taken to calculate the Missouri jurisdictional portion of the losses, however, I inserted the original spreadsheet in as my schedule instead of the calculated Missouri losses. I'm including the corrected schedule as Schedule JSR-S-3.

Q. Does this conclude your surrebuttal testimony?

A. Yes it does

Physical and Financial losses 2002-2016

Year	2002	2003	2004	2005	2006
Physical		$ 5,084,983.00	$ 1,229,600.00	$ 8,752,603.00	$ (2,503,258.00)
Financial	$ 1,017,390.00	$ 10,245,457.00	$ 12,177,140.00	$ 8,369,693.00	$ 1,286,382.00
Total	$ 1,017,390.00	$ 15,330,440.00	$ 13,406,740.00	$ 17,122,296.00	$ (1,216,876.00)

Year	2007	2008	2009	2010	2011
Physical	$ (8,372,741.00)	$ 3,970,950.00	$ (6,563,572.00)	$ (8,274,337.00)	$ (8,589,190.00)
Financial	$ 1,466,655.00	$ 6,043,016.00	$ (16,103,732.00)	$ (5,984,150.00)	$ (904,230.00)
Total	$ (6,906,086.00)	$ 10,013,966.00	$ (22,667,304.00)	$ (14,258,487.00)	$ (9,493,420.00)

	2012	2013	2014	2015	2016
Physical	$ (8,980,546.00)	$ (5,904,295.00)	$ (569,302.00)	$ (3,061,314.00)	$ (3,692,123.00)
Financial	$ (5,374,710.00)	$ (3,114,847.00)	$ (1,233,467.00)	$ (7,993,467.00)	$ (3,803,464.00)
Total	$ (14,355,256.00)	$ (9,019,142.00)	$ (1,802,769.00)	$ (11,054,781.00)	$ (7,495,587.00)

			Sept - Dec 2008
Physical	$ (37,472,542.00)		$ (1,720,646.00)
financial	$ (3,906,334.00)		$ (3,541,810.00)
	$ (41,378,876.00)		$ (5,262,456.00)

Hedging losses since FAC authorized in Sept 2008 $ (95,409,202.00)

Tabulated from month end Gas Position Reports

The Empire District ELECTRIC Company Gas Position Summary as of September 30, 2012									
	October 2012	November 2012	December 2012	Oct-Dec 2012	Year 2013 60% min	Year 2014 40% min	Year 2015 20% min	Year 2016 10% min	Net All Years
Budget DTh (3)	223,259	230,227	647,967	1,101,453	7,937,162	8,515,810	9,283,249	9,699,357	36,537,031
Expected DTh (3)	223,259	230,227	647,967	1,101,453	9,418,160	9,886,003	9,476,120	9,650,633	39,532,369
Policy minimum hedged DTh (2)	133,955	138,136	388,780	660,872	5,650,896	3,954,401	1,895,224	965,063	13,126,456
Policy maximum hedged DTh	223,259	230,227	647,967	1,101,453	7,534,528	7,908,802	7,580,896	7,720,506	31,846,186
Amount Hedged from Upside Volatility Dth	125,000	100,000	410,000	635,000	4,780,000	2,500,000	1,410,000	400,000	9,725,000
percentage	**56%**	**43%**	**63%**	**58%**	**51%**	**25%**	**15%**	**4%**	**25%**
Average Cost per Dth hedged	**6.396**	**7.295**	**7.132**	**7.013**	**5.368**	**5.041**	**5.031**	**4.185**	**5.294**
Net All Positions $ (1)	(459,450)	(419,000)	(1,463,650)	(2,342,100)	(7,691,190)	(2,291,550)	(1,036,350)	114,200	(13,246,990)
PHYSICAL HEDGES									
Purchased Dth	125,000	100,000	100,000	325,000	2,020,000	460,000	-	-	2,805,000
Purchased $	799,450	729,500	729,500	2,258,450	12,933,800	2,420,575	-	-	17,612,825
Purchased $/DTh	**6.396**	**7.295**	**7.295**	**6.949**	**6.403**	**5.262**	**0.000**	**0.000**	**6.279**
Market $	340,000	310,500	340,000	990,500	7,360,950	1,795,525	-	-	10,146,975
Market $/Dth (on Southern Star Pipeline)	**2.720**	**3.105**	**3.400**	**3.048**	**3.644**	**3.903**	**0.000**	**0.000**	**3.617**
Difference ($) versus current market	(459,450)	(419,000)	(389,500)	(1,267,950)	(5,572,850)	(625,050)	-	-	(7,465,850)
FINANCIAL HEDGES									
Swap/Futures Dth Purchased	-	-	310,000	310,000	2,760,000	2,040,000	1,410,000	400,000	6,920,000
Net Cost, $/Dth	**0.000**	**0.000**	**7.080**	**7.080**	**4.611**	**4.992**	**5.031**	**4.185**	**4.895**
Market $/Dth (at Swap location)	**0.000**	**0.000**	**3.615**	**3.615**	**3.844**	**4.175**	**4.296**	**4.471**	**4.059**
Difference ($) versus current market	-	-	(1,074,150)	(1,074,150)	(2,118,340)	(1,666,500)	(1,036,350)	114,200	(5,781,140)

Note 1: Market data using NYMEX Close Prices as of September 28, 2012.
Note 2: Policy minimums are 12/31/2012 targets.
Note 3: For 2012 through 2016, Budgeted Dth are from FINAL F&PP Budget for 2012 (Planning & Regulatory, 1/30/2012).
For 2013 through 2016, Expected Dth are from Prelim. F&PP Budget for 2013 (Planning & Regulatory, 10/1/2012).
Note 4: Empire currently has no positions utilizing "options" and therefore the options section of this report is not shown.

Storage Estimates	
Balance Dth	528,975
WACOG $/Dth	4.013
Inj / Wthdr MTD	123,388

The Empire District ELECTRIC Company Gas Position Summary as of October 26, 2012								
	November 2012	December 2012	Nov-Dec 2012	Year 2013 60% min	Year 2014 40% min	Year 2015 20% min	Year 2016 10% min	Net All Years
Budget DTh (3)	230,227	647,967	878,194	7,937,162	8,515,810	9,283,249	9,699,357	36,313,772
Expected DTh (3)	230,227	647,967	878,194	9,418,160	9,886,003	9,476,120	9,650,633	39,309,110
Policy minimum hedged DTh (2)	138,136	388,780	526,916	5,650,896	3,954,401	1,895,224	965,063	12,992,501
Policy maximum hedged DTh	230,227	647,967	878,194	7,534,528	7,908,802	7,580,896	7,720,506	31,622,927
Amount Hedged from Upside Volatility Dth	100,000	410,000	510,000	5,680,000	4,000,000	1,910,000	1,000,000	13,100,000
percentage	**43%**	**63%**	**58%**	**60%**	**40%**	**20%**	**10%**	**33%**
Average Cost per Dth hedged	**7.295**	**7.132**	**7.164**	**5.144**	**4.741**	**4.928**	**4.410**	**5.012**
Net All Positions $ (1)	(407,300)	(1,416,960)	(1,824,260)	(7,286,850)	(2,222,195)	(1,007,640)	117,200	(12,223,745)
PHYSICAL HEDGES								
Purchased Dth	100,000	100,000	200,000	2,020,000	460,000	-	-	2,680,000
Purchased $	729,500	729,500	1,459,000	12,933,800	2,420,575	-	-	16,813,375
Purchased $/DTh	**7.295**	**7.295**	**7.295**	**6.403**	**5.262**	**0.000**	**0.000**	**6.274**
Market $	322,200	352,900	675,100	7,537,620	1,775,270	-	-	9,987,990
Market $/Dth (on Southern Star Pipeline)	**3.222**	**3.529**	**3.376**	**3.731**	**3.859**	**0.000**	**0.000**	**3.727**
Difference ($) versus current market	(407,300)	(376,600)	(783,900)	(5,396,180)	(645,305)	-	-	(6,825,385)
FINANCIAL HEDGES								
Swap/Futures Dth Purchased	-	310,000	310,000	3,660,000	3,540,000	1,910,000	1,000,000	10,420,000
Net Cost, $/Dth	**0.000**	**7.080**	**7.080**	**4.450**	**4.673**	**4.928**	**4.410**	**4.688**
Market $/Dth (at Swap location)	**0.000**	**3.724**	**3.724**	**3.933**	**4.228**	**4.400**	**4.527**	**4.170**
Difference ($) versus current market	-	(1,040,360)	(1,040,360)	(1,890,670)	(1,576,890)	(1,007,640)	117,200	(5,398,360)

Note 1: Market data using NYMEX Close Prices as of October 26, 2012.
Note 2: Policy minimums are 12/31/2012 targets.
Note 3: For 2012 through 2016, Budgeted Dth are from FINAL F&PP Budget for 2012 (Planning & Regulatory, 1/30/2012).
For 2013 through 2016, Expected Dth are from Prelim. F&PP Budget for 2013 (Planning & Regulatory, 10/1/2012).
Note 4: Empire currently has no positions utilizing "options" and therefore the options section of this report is not shown.

Storage Estimates	
Balance Dth	622,459
WACOG $/Dth	3.892
Inj / Wthdr MTD	93,758

The Empire District ELECTRIC Company Gas Position Summary as of December 31, 2012 REVISED									
	January 2013	February 2013	March 2013	Apr-Dec 2013	Year 2014 40% min	Year 2015 20% min	Year 2016 10% min	Year 2017 0% min	Net All Years
Budget DTh (3)	872,150	698,430	474,707	7,749,436	10,330,978	9,746,619	9,934,163	10,500,875	50,307,358
Expected DTh (3)	872,150	698,430	474,707	7,749,436	10,330,978	9,746,619	9,934,163	10,500,875	50,307,358
Policy minimum hedged DTh (2)	523,290	419,058	284,824	4,649,662	4,132,391	1,949,324	993,416	-	12,951,965
Policy maximum hedged DTh	872,150	698,430	474,707	7,749,436	8,264,782	7,797,295	7,947,330	8,400,700	42,204,831
Amount Hedged from Upside Volatility Dth	450,000	350,000	200,000	4,680,000	4,000,000	1,910,000	1,000,000	-	12,590,000
percentage	**52%**	**50%**	**42%**	**60%**	**39%**	**20%**	**10%**	**0%**	**25%**
Average Cost per Dth hedged	**4.742**	**4.989**	**6.278**	**5.146**	**4.741**	**4.928**	**4.410**	**0.000**	**4.925**
Net All Positions $ (1)	(644,620)	(593,790)	(604,050)	(7,592,880)	(2,919,895)	(1,351,660)	(74,800)	-	(13,781,695)
PHYSICAL HEDGES									
Purchased Dth	130,000	130,000	130,000	1,630,000	460,000	-	-	-	2,480,000
Purchased $	880,400	880,400	880,400	10,292,600	2,420,575	-	-	-	15,354,375
Purchased $/DTh	**6.772**	**6.772**	**6.772**	**6.314**	**5.262**	**0.000**	**0.000**	**0.000**	**6.191**
Market $	416,000	415,090	416,000	5,497,840	1,719,630	0	-	-	8,464,560
Market $/Dth (on Southern Star Pipeline)	**3.200**	**3.193**	**3.200**	**3.373**	**3.738**	**0.000**	**0.000**	**0.000**	**3.413**
Difference ($) versus current market	(464,400)	(465,310)	(464,400)	(4,794,760)	(700,945)	-	-	-	(6,889,815)
FINANCIAL HEDGES									
Swap/Futures Dth Purchased	320,000	220,000	70,000	3,050,000	3,540,000	1,910,000	1,000,000	-	10,110,000
Net Cost, $/Dth	**3.917**	**3.935**	**5.360**	**4.522**	**4.673**	**4.928**	**4.410**	**0.000**	**4.614**
Market $/Dth (at Swap location)	**3.354**	**3.351**	**3.365**	**3.604**	**4.046**	**4.220**	**4.335**	**0.000**	**3.933**
Difference ($) versus current market	(180,220)	(128,480)	(139,650)	(2,798,120)	(2,218,950)	(1,351,660)	(74,800)	-	(6,891,880)

Note 1: Market data using NYMEX Close Prices as of December 31, 2012.

Note 2: Policy minimums are 12/31/2012 targets.

Note 3: For 2013 through 2017, Budgeted & Expected Dth are from FINAL F&PP Budget for 2013 (Planning & Regulatory, 1/14/2013).

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

Storage Estimates	
Balance Dth	465,987
WACOG $/Dth	3.888
Inj / Wthdr MTD	(136,000)

The Empire District ELECTRIC Company Gas Position Summary as of October 25, 2013	November 2013	December 2013	Nov-Dec 2013	Year 2014 60% min	Year 2015 40% min	Year 2016 20% min	Year 2017 10% min	Net All Years
Budget DTh (3)	505,828	882,971	1,388,799	10,330,978	9,746,619	9,934,163	10,500,875	41,901,433
Expected DTh (3)	505,828	882,971	1,388,799	10,330,978	9,746,619	9,934,163	10,500,875	41,901,433
Policy minimum hedged DTh (2)	303,497	529,783	833,279	6,198,587	3,898,648	1,986,833	1,050,087	13,967,434
Policy maximum hedged DTh	505,828	882,971	1,388,799	8,264,782	7,797,295	7,947,330	8,400,700	33,798,906
Amount Hedged from Upside Volatility Dth	200,000	400,000	600,000	6,200,000	4,010,000	2,100,000	1,050,000	13,960,000
percentage	**40%**	**45%**	**43%**	**60%**	**41%**	**21%**	**10%**	**33%**
Average Cost per Dth hedged	**6.278**	**5.143**	**5.521**	**4.411**	**4.578**	**4.415**	**4.430**	**4.509**
Net All Positions $ (1)	(531,360)	(548,160)	(1,079,520)	(3,634,175)	(1,913,260)	(514,500)	(193,850)	(7,335,305)
PHYSICAL HEDGES								
Purchased Dth	130,000	130,000	260,000	1,560,000	-	-	-	1,820,000
Purchased $	880,400	880,400	1,760,800	6,447,575	-	-	-	8,208,375
Purchased $/DTh	**6.772**	**6.772**	**6.772**	**4.133**	**0.000**	**0.000**	**0.000**	**4.510**
Market $	464,750	479,700	944,450	5,697,950	0	-	-	6,642,400
Market $/Dth (on Southern Star Pipeline)	**3.575**	**3.690**	**3.633**	**3.653**	**0.000**	**0.000**	**0.000**	**3.650**
Difference ($) versus current market	(415,650)	(400,700)	(816,350)	(749,625)	-	-	-	(1,565,975)
FINANCIAL HEDGES								
Swap/Futures Dth Purchased	70,000	270,000	340,000	3,540,000	4,010,000	2,100,000	1,050,000	11,040,000
Net Cost, $/Dth	**5.360**	**4.358**	**4.564**	**4.673**	**4.578**	**4.415**	**4.430**	**4.563**
Market $/Dth (at Swap location)	**3.707**	**3.812**	**3.790**	**3.947**	**4.101**	**4.170**	**4.246**	**4.069**
Difference ($) versus current market	(115,710)	(147,460)	(263,170)	(2,569,950)	(1,913,260)	(514,500)	(193,850)	(5,454,730)
Call Dth (Buy a Call)	-	-	0	1,100,000	-	-	-	1,100,000
Call Strike $/Dth	**0.000**	**0.000**	**0.000**	**3.964**	**0.000**	**0.000**	**0.000**	**3.964**
Market $/Dth (at Henry Hub or Swap locatio	**0.000**	**0.000**	**0.000**	**3.883**	**0.000**	**0.000**	**0.000**	**3.883**
Cost of Call $/Dth	**0.000**	**0.000**	**0.000**	**0.286**	**0.000**	**0.000**	**0.000**	**0.286**
Value $ of Call Position	-	-	-	-	-	-	-	-
(Cost) $ of Call Position	-	-	-	(314,600)	-	-	-	(314,600)

Note 1: Market data using NYMEX Close Prices as of October 25, 2013.
Note 2: Policy minimums are 12/31/2013 targets.
Note 3: For 2013 through 2017, Budgeted & Expected Dth are from FINAL F&PP Budget for 2013 (Planning & Regulatory, 1/14/1

Storage Estimates	
Balance Dth	607,409
WACOG $/Dth	3.761
Inj / Wthdr MTD	0

The Empire District ELECTRIC Company Gas Position Summary as of September 30, 2014										
	October 2014	November 2014	December 2014	Jan-Dec 2015	Oct-Dec 2014	Year 2015 60% min	Year 2016 40% min	Year 2017 20% min	Year 2018 10% min	Net All Years
Budget DTh (3)	1,234,068	504,741	779,912	9,675,126	2,518,721	9,675,126	9,553,121	10,171,405	9,086,465	41,004,838
Expected DTh (3)	1,234,068	504,741	779,912	9,675,126	2,518,721	9,675,126	9,553,121	10,171,405	9,086,465	41,004,838
Policy minimum hedged DTh (2)	740,441	302,845	467,947	5,805,075	1,511,233	5,805,075	3,821,248	2,034,281	908,647	14,080,484
Policy maximum hedged DTh	1,234,068	504,741	779,912	9,675,126	2,518,721	7,740,101	7,642,497	8,137,124	7,269,172	33,307,614
Amount Hedged from Upside Volatility Dth	440,000	450,000	555,000	6,060,000	1,445,000	6,060,000	4,076,000	1,720,900	500,000	13,801,900
percentage	**36%**	**89%**	**71%**	**63%**	**57%**	**63%**	**43%**	**17%**	**6%**	**34%**
Average Cost per Dth hedged	**3.940**	**4.025**	**4.225**	**4.351**	**4.076**	**4.351**	**4.103**	**4.219**	**4.516**	**4.239**
Net All Positions $ (1)	(111,700)	7,700	(28,100)	(2,342,395)	(132,100)	(2,342,395)	(1,115,056)	(354,818)	(143,250)	(4,087,619)
PHYSICAL HEDGES										
Purchased Dth	240,000	250,000	155,000	1,550,000	645,000	1,550,000	1,976,000	420,900	-	4,591,900
Purchased $	886,500	949,250	597,525	6,048,750	2,433,275	6,048,750	7,454,800	1,515,240	-	17,452,065
Purchased $/DTh	**3.694**	**3.797**	**3.855**	**3.902**	**3.773**	**3.902**	**3.773**	**3.600**	**0.000**	**3.801**
Market $	825,000	994,750	640,925	6,031,655	2,460,675	6,031,655	7,108,344	1,520,532	-	17,121,206
Market $/Dth (on Southern Star Pipeline)	**3.438**	**3.979**	**4.135**	**3.891**	**3.815**	**3.891**	**3.597**	**3.613**	**0.000**	**3.729**
Difference ($) versus current market	(61,500)	45,500	43,400	(17,095)	27,400	(17,095)	(346,456)	5,292	-	(330,859)
FINANCIAL HEDGES										
Swap/Futures Dth Purchased	200,000	200,000	400,000	4,510,000	800,000	4,510,000	2,100,000	1,300,000	500,000	9,210,000
Net Cost, $/Dth	**4.235**	**4.310**	**4.369**	**4.506**	**4.321**	**4.506**	**4.415**	**4.420**	**4.516**	**4.457**
Market $/Dth (at Swap location)	**3.984**	**4.121**	**4.190**	**3.990**	**4.121**	**3.990**	**4.049**	**4.143**	**4.230**	**4.049**
Difference ($) versus current market	(50,200)	(37,800)	(71,500)	(2,325,300)	(159,500)	(2,325,300)	(768,600)	(360,110)	(143,250)	(3,756,760)
Call Dth (Buy a Call)	-	-	-	-	0	-	-	-	-	-
Call Strike $/Dth	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Market $/Dth (at Henry Hub or Swap locatio	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Cost of Call $/Dth	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Value $ of Call Position	-	-	-	-	-	-	-	-	-	-
(Cost) $ of Call Position	-	-	-	-	-	-	-	-	-	-

Note 1: Market data using NYMEX Close Prices as of September 30, 2014.
Note 2: Policy minimums are 12/31/2014 targets.
Note 3: For 2014 through 2018, Budgeted & Expected Dth are from FINAL F&PP Budget for 2014 (Planning & Regulatory, 1/6/2014).
Note 4: Southern Star and Panhandle Prices Forward prices not yet available for 2018. 2017 prices utilized for 2018 until data is available.

Storage Estimates	
Balance Dth	606,083
WACOG $/Dth	4.183
Inj / Wthdr MTD	130,524

The Empire District ELECTRIC Company Gas Position Summary as of October 31, 2014										
	November 2014	December 2014	January 2015	Feb-Dec 2015	Nov-Dec 2014	Year 2015 60% min	Year 2016 40% min	Year 2017 20% min	Year 2018 10% min	Net All Years
Budget DTh (3)	504,741	779,912	884,156	8,790,969	1,284,653	9,675,126	9,553,121	10,171,405	9,086,465	39,770,769
Expected DTh (3)	504,741	779,912	884,156	8,790,969	1,284,653	9,675,126	9,553,121	10,171,405	9,086,465	39,770,769
Policy minimum hedged DTh (2)	302,845	467,947	530,494	5,274,582	770,792	5,805,075	3,821,248	2,034,281	908,647	13,340,043
Policy maximum hedged DTh	504,741	779,912	884,156	8,790,969	1,284,653	7,740,101	7,642,497	8,137,124	7,269,172	32,073,546
Amount Hedged from Upside Volatility Dth	540,000	555,000	755,000	5,305,000	1,095,000	6,060,000	4,076,000	2,082,900	965,000	14,278,900
percentage	**107%**	**71%**	**85%**	**60%**	**85%**	**63%**	**43%**	**20%**	**11%**	**36%**
Average Cost per Dth hedged	**3.929**	**4.225**	**4.302**	**4.358**	**4.079**	**4.351**	**4.103**	**4.133**	**4.202**	**4.218**
Net All Positions $ (1)	(206,550)	(204,190)	(258,880)	(3,363,185)	(410,740)	(3,622,065)	(1,609,456)	(650,016)	(316,405)	(6,608,682)
PHYSICAL HEDGES										
Purchased Dth	340,000	155,000	255,000	1,295,000	495,000	1,550,000	1,976,000	782,900	465,000	5,268,900
Purchased $	1,259,750	597,525	989,025	5,059,725	1,857,275	6,048,750	7,454,800	2,863,350	1,796,450	20,020,625
Purchased $/DTh	**3.705**	**3.855**	**3.879**	**3.907**	**3.752**	**3.902**	**3.773**	**3.657**	**3.863**	**3.800**
Market $	1,169,600	591,635	1,009,545	4,644,900	1,761,235	5,654,445	6,876,344	2,750,304	1,680,045	18,722,373
Market $/Dth (on Southern Star Pipeline)	**3.440**	**3.817**	**3.959**	**3.587**	**3.558**	**3.648**	**3.480**	**3.513**	**3.613**	**3.553**
Difference ($) versus current market	(90,150)	(5,890)	20,520	(414,825)	(96,040)	(394,305)	(578,456)	(113,046)	(116,405)	(1,298,252)
FINANCIAL HEDGES										
Swap/Futures Dth Purchased	200,000	400,000	500,000	4,010,000	600,000	4,510,000	2,100,000	1,300,000	500,000	9,010,000
Net Cost, $/Dth	**4.310**	**4.369**	**4.518**	**4.504**	**4.349**	**4.506**	**4.415**	**4.420**	**4.516**	**4.462**
Market $/Dth (at Swap location)	**3.728**	**3.873**	**3.959**	**3.769**	**3.825**	**3.790**	**3.924**	**4.007**	**4.116**	**3.873**
Difference ($) versus current market	(116,400)	(198,300)	(279,400)	(2,948,360)	(314,700)	(3,227,760)	(1,031,000)	(536,970)	(200,000)	(5,310,430)
Call Dth (Buy a Call)	-	-	-	-	0	-	-	-	-	-
Call Strike $/Dth	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Market $/Dth (at Henry Hub or Swap locatio	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Cost of Call $/Dth	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Value $ of Call Position	-	-	-	-	-	-	-	-	-	-
(Cost) $ of Call Position	-	-	-	-	-	-	-	-	-	-

Note 1: Market data using NYMEX Close Prices as of October 31, 2014.
Note 2: Policy minimums are 12/31/2014 targets.
Note 3: For 2014 through 2018, Budgeted & Expected Dth are from FINAL F&PP Budget for 2014 (Planning & Regulatory, 1/6/2014).
Note 4: Southern Star and Panhandle Prices Forward prices not yet available for 2018. 2017 prices utilized for 2018 until data is available.

Storage Estimates	
Balance Dth	635,133
WACOG $/Dth	4.171
Inj / Wthdr MTD	29,050

The Empire District ELECTRIC Company
Gas Position Summary as of December 31, 2015

	Current/Upcoming Year				All Years					Total
	January 2016	February 2016	March 2016	Apr - Dec 2016	Jan - Dec 2016	Year 2017 40% min	Year 2018 20% min	Year 2019 10% min	Year 2020 0% min	Net All Years
Budget Dth (3)	1,181,400	939,700	417,400	11,689,000	14,227,500	14,671,030	14,766,560	14,382,698	14,486,940	72,534,728
Expected Dth (3)	1,181,400	939,700	417,400	11,689,000	14,227,500	14,671,030	14,766,560	14,382,698	14,486,940	72,534,728
Policy minimum hedged Dth (2)	708,840	563,820	250,440	7,013,400	8,536,500	5,868,412	2,953,312	1,438,270	-	18,796,494
Policy Maximum hedged Dth	1,181,400	939,700	417,400	11,689,000	14,227,500	11,736,824	11,813,248	11,506,158	11,589,552	60,873,282
Amount de-designated from Hedge amount										-
Amount Hedged from Upside Volitility Dth	950,000	720,000	240,000	6,736,000	8,646,000	5,992,900	3,025,000	1,460,000	-	19,123,900
percentage	**80%**	**77%**	**57%**	**58%**	**61%**	**41%**	**20%**	**10%**	**0%**	**26%**
Amount Hedged from Downside Volitility Dth	$ 950,000	$ 720,000	$ 240,000	$ 6,736,000	$ 8,646,000	$ 5,992,900	$ 3,025,000	$ 1,460,000	$ -	$ 19,123,900
percentage	**80%**	**77%**	**57%**	**58%**	**61%**	**41%**	**20%**	**10%**	**0%**	**26%**
Average Cost per Dth hedged	**$ 3.100**	**$ 2.725**	**$ 2.552**	**$ 3.509**	**$ 3.372**	**$ 3.347**	**$ 3.334**	**$ 2.955**	**$ -**	**$ 3.326**
Net all Positions $ (1)	$ (698,210)	$ (279,120)	$ (45,360)	$ (7,130,124)	$ (8,152,814)	$ (3,625,894)	$ (1,738,665)	$ 196,240	$ -	$ (13,321,133)
PHYSICAL HEDGES										
Purchased Dth	$ 30,000	$ -	$ -	$ 2,676,000	$ 2,706,000	$ 782,900	$ 565,000	$ -	$ -	$ 4,053,900
Purchased $	$ 68,550	$ -	$ -	$ 9,344,800	$ 9,413,350	$ 2,863,350	$ 2,130,450	$ -	$ -	$ 14,407,150
Purchased $/Dth	**$ 2.285**	**$ -**	**$ -**	**$ 3.492**	**$ 3.479**	**$ 3.657**	**$ 3.771**	**$ -**	**$ -**	**$ 3.554**
Market $	$ 64,500	$ -	$ -	$ 6,080,646	$ 6,145,146	$ 1,864,446	$ 1,387,405	$ -	$ -	$ 9,396,997
Market $/Dth (on Southern Start Pipeline)	**$ 2.150**	**$ -**	**$ -**	**$ 2.272**	**$ 2.271**	**$ 2.381**	**$ 2.456**	**$ -**	**$ -**	**$ 2.318**
Difference ($) versus current market	$ (4,050)	$ -	$ -	$ (3,264,154)	$ (3,268,204)	$ (998,904)	$ (743,045)	$ -	$ -	$ (5,010,153)
FINANCIAL HEDGES										
Swap/Futures Dth Purchased	$ 920,000	$ 720,000	$ 240,000	$ 4,060,000	$ 5,940,000	$ 5,210,000	$ 2,460,000	$ 1,460,000	$ -	$ 15,070,000
Net Cost, $/Dth	**$ 3.127**	**$ 2.725**	**$ 2.552**	**$ 3.520**	**$ 3.324**	**$ 3.300**	**$ 3.234**	**$ 2.955**	**$ -**	**$ 3.265**
Market $/Dth (at Swap location)	**$ 2.372**	**$ 2.337**	**$ 2.363**	**$ 2.568**	**$ 2.501**	**$ 2.796**	**$ 2.829**	**$ 3.089**	**$ -**	**$ 2.714**
Difference ($) versus current Market	$ (694,160)	$ (279,120)	$ (45,360)	$ (3,865,970)	$ (4,884,610)	$ (2,626,990)	$ (995,620)	$ 196,240	$ -	$ (8,310,980)
Swap/Futures Dth Sold or Settle	0	0	0	0	0	0	0	0	0	-
Call Dth (Buy a Call)	0	0	0	0	0	0	0	0	0	-
Collar Dth	0	0	0	0	0	0	0	0	0	-
Put Dth (Sell a Put)	0	0	0	0	0	0	0	0	0	-

Note 1: Market data using NYMEX Close Prices as of December 31, 2015.
Note 2: Policy minimums are 12/31/2015 targets.
Note 3: For 2015 through 2020, Budgeted & Expected Dth are from Final F&PP Budget for 2016-2020.
Note 4: Empire currently has no positions utilizing "options" and therefore the options section of this report is not shown.
Note 5: Storage and usage are estimates based on most current information available.

Storage Estimates	
Balance Dth	418,118
WACOG $/Dth	2.634

The Empire District Electric Company

Gas Position Summary as of December 31, 2016

	Current/Upcoming Year				All Years					Total
	January 2017	February 2017	March 2017	Apr - Dec 2017	Jan - Dec 2017	Year 2018 40% min	Year 2019 20% min	Year 2020 10% min	Year 2021 0% min	Net All Years
SUMMARY										
Budget Dth [3]	1,674,953	1,324,505	830,660	12,890,400	16,720,518	15,930,858	17,353,353	16,150,003	17,172,645	83,327,375
Expected Dth [3]	1,674,953	1,324,505	830,660	12,890,400	16,720,518	15,930,858	17,353,353	16,150,003	17,172,645	83,327,375
Policy minimum hedged Dth [2]	1,004,972	794,703	498,396	7,734,240	10,032,311	9,558,515	6,941,341	3,230,001	1,717,265	31,479,431
Policy Maximum hedged Dth	1,674,953	1,324,505	830,660	12,890,400	16,720,518	12,744,686	13,882,682	12,920,002	13,738,116	70,006,004
Amount de-designated from Hedge amount										-
Amount Hedged from Upside Volatility Dth	1,157,051	750,000	750,000	7,610,900	10,267,951	6,525,000	3,700,000	1,740,000	-	22,232,951
percentage	**69%**	**57%**	**90%**	**59%**	**61%**	**41%**	**21%**	**11%**	**0%**	**27%**
Amount Hedged from Downside Volatility Dth	1,157,051	750,000	750,000	7,610,900	10,267,951	6,525,000	3,700,000	1,740,000	-	22,232,951
percentage	**69%**	**57%**	**90%**	**59%**	**61%**	**41%**	**21%**	**11%**	**0%**	**27%**
Average Cost per Dth hedged	**$ 3.053**	**$ 2.951**	**$ 3.185**	**$ 3.362**	**$ 3.285**	**$ 3.164**	**$ 2.781**	**$ 2.786**	**$ -**	**$ 3.126**
Net all Positions $ [1]	$ 984,087	$ 579,500	$ 374,250	$ 1,103,309	$ 3,041,146	$ (834,710)	$ 95,990	$ 311,260	$ -	$ 2,613,686
PHYSICAL HEDGES										
Purchased Dth	167,051	-	-	1,640,900	1,807,951	565,000	1,240,000	1,240,000	-	4,852,951
Purchased $	$ 626,504	$ -	$ -	$ 5,378,040	$ 6,004,544	$ 2,130,450	$ 3,149,600	$ 3,286,000	$ -	$ 14,570,594
Purchased $/Dth	$ **3.750**	$ -	$ -	$ **3.277**	$ **3.321**	$ **3.771**	$ **2.540**	$ **2.650**	$ -	$ **3.002**
Market $	$ 626,441	$ -	$ -	$ 5,300,319	$ 5,926,760	$ 1,442,280	$ 3,625,760	$ 3,625,760	$ -	$ 14,620,560
Market $/Dth (on Southern Star Pipeline)	$ **3.750**	$ -	$ -	$ **3.230**	$ **3.278**	$ **2.553**	$ **2.924**	$ **2.924**	$ -	$ **3.013**
Difference ($) versus current market	$ (63)	$ -	$ -	$ (77,721)	$ (77,784)	$ (688,170)	$ 476,160	$ 339,760	$ -	$ 49,966
FINANCIAL HEDGES										
Swap/Futures Dth Purchased	990,000	750,000	750,000	5,970,000	8,460,000	5,960,000	2,460,000	500,000	-	17,380,000
Net Cost, $/Dth	$ **2.936**	$ **2.951**	$ **3.185**	$ **3.386**	$ **3.277**	$ **3.106**	$ **2.902**	$ **3.123**	$ -	$ **3.161**
Market $/Dth (at Swap location)	$ **3.930**	$ **3.724**	$ **3.684**	$ **3.584**	$ **3.646**	$ **3.082**	$ **2.748**	$ **3.066**	$ -	$ **3.308**
Difference ($) versus current Market	$ 984,150	$ 579,500	$ 374,250	$ 1,181,030	$ 3,118,930	$ (146,540)	$ (380,170)	$ (28,500)	$ -	$ 2,563,720
Swap/Futures Dth Sold or Settle	-	-	-	-	-	-	-	-	-	-
Net Cost, $/Dth	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Market $/Dth (at Swap location)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Swap Settlement - Receipt / (Payment)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Call Dth (Buy a Call)	0	0	0	0	0	0	0	0	0	-
Collar Dth	0	0	0	0	0	0	0	0	0	-
Put Dth (Sell a Put)	0	0	0	0	0	0	0	0	0	-

Note 1: Market data using NYMEX Close Prices as of December 31, 2016.
Note 2: Policy minimums are 12/31/2016 targets.
Note 3: Budgeted & Expected Dth are from Final F&PP Budget for 2017-2021.
Note 4: Empire currently has no positions utilizing "options" and therefore the options section of this report is not shown.

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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
Total Consumed - MMBTU	916,864	222,059	268,667	1,242,552	1,442,594	1,220,164	859,591	599,446	796,983
Total Cost	$3,387,261.87	$ 1,272,889.69	$1,738,915.73	$4,764,016.69	$6,905,292.32	$6,146,807.28	$3,174,025.43	$1,921,173.76	$ 2,632,683.85
Less:									
(Gain)/Loss on Derivatives	134,743.28	170,200.71	321,334.24	529,206.00	2,204,861.36	1,902,407.82	147,777.20	-	206,951.00
Firm Transportation	476,266.64	352,320.06	546,647.97	569,347.48	518,730.80	573,262.93	567,767.18	519,453.18	488,351.37
Commodity Transportation	40,323.01	6,260.45	6,260.45	6,516.30	43,152.70	34,383.26	26,422.41	23,612.42	12,707.21
Other Costs	236.31	763.70	1,169.60	2,310.49	1,600.00	822.49	1,402.10	11,393.61	9,720.26
Net Actual Commodity Cost	$2,735,719.73	$ 743,344.68	$ 863,483.57	$3,657,238.42	$4,196,967.31	$3,575,860.78	$2,441,466.54	$1,366,714.55	$ 1,015,003.99
Cost/ Mmbtu	$ 2.984	$ 3.338	$ 3.214	$ 2.943	$ 2.909	$ 2.923	$ 2.808	$ 2.280	$ 2.403
Spot Purchases from Gas Purchse Rpt	$ 2.546	$ 2.319	$ 2.676	$ 2.561	$ 2.690	$ 2.640	$ 2.480	$ 2.163	$ 1.976
Cost at Spot Price	$2,334,310.28	$ 516,346.22	$ 718,926.13	$3,182,175.67	$3,880,846.86	$3,229,120.56	$2,156,585.68	$1,290,607.24	$ 1,574,838.41
Physical Hedging Costs	$ 401,409.45	$ 226,998.46	$ 144,557.44	$ 476,062.75	$ 316,110.45	$ 346,724.22	$ 284,880.86	$ 70,107.31	$ 340,225.58
Mo Allocated Costs collected in FAC	$ 313,013.17	$ 177,349.36	$ 112,930.84	$ 371,167.02	$ 246,970.77	$ 270,888.70	$ 222,815.29	$ 59,526.19	$ 206,102.34
(Gain)/Loss on Derivatives	$ 134,743.28	$ 170,200.71	$ 321,334.24	$ 529,206.00	$2,204,861.36	$1,902,407.82	$ 147,777.20	$ -	$ 206,951.00
Jurisdictional factor	82.24%	82.24%	82.24%	82.24%	82.24%	82.24%	82.33%	82.33%	82.33%
Mo Allocated Costs collected in FAC	106,272.33	132,974.41	251,062.02	413,457.28	1,722,614.08	1,633,260.30	115,581.72	0.00	161,863.82
Total Cost of Fuel at spot prices									
Total Hedging Costs									
Proof:									
Cost - Gas & Commodity Charges	2,948,684.24	701,070.28	869,844.87	3,661,003.66	4,203,280.97	3,620,038.00	2,477,432.68	1,402,541.18	1,046,777.22
Cost - Gas & Commodity Chg (Adj)	(172,640.60)	48,534.85	(100.85)	2,750.06	36,829.04	(9,804.04)	(9,543.03)	(12,214.21)	(17,016.02)
	2,776,043.64	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	1,027,861.70
From Above:									
Line 14 Commodity Transport	40,323.91	6,260.45	6,260.45	6,515.30	43,152.70	34,383.26	26,422.41	23,612.42	12,707.21
Line 17 Commodity Cost	2,735,719.73	743,344.68	863,483.57	3,657,238.42	4,196,967.31	3,575,850.78	2,441,466.54	1,366,714.55	1,015,063.99
	2,776,043.64	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	1,027,861.70
Difference - Should be zero	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	
Total Consumed - MMBTU	440,618	697,699	757,364	832,009	1,144,181	1,505,891	2,116,050	1,945,303	1,927,951	
Total Cost	$ 2,723,003.65	$ 2,598,424.16	$ 2,311,986.00	$ 1,747,597.85	$ 2,038,182.40	$ 4,369,629.17	$ 8,317,200.23	$ 7,104,427.22	$ 7,306,030.06	$ 69,301,828.15
Less:										
(Gain)/Loss on Derivatives	1,168,463.85	730,103.70	388,806.78	201,600.00	-	127,378.97	229,222.67	1,077,502.51	1,104,510.40	$ 10,712,168.49
Firm Transportation	508,546.29	429,327.79	318,526.70	189,093.70	305,848.63	524,702.02	528,929.78	473,757.11	627,464.73	
Commodity Transportation	15,474.22	11,143.27	10,230.53	18,987.58	28,656.83	33,416.24	31,323.02	60,324.76	44,096.70	
Other Costs	2,008.04	1,965.68	1,074.18	326.20	1,116.18	617.06	2,674.16	2,203.10	244.62	
Net Actual Commodity Cost	$ 1,029,081.25	$ 1,416,883.72	$ 1,586,348.71	$ 1,337,621.08	$ 2,302,760.70	$ 3,683,554.88	$ 5,526,150.60	$ 5,580,639.75	$ 5,719,604.71	$ 49,077,485.03
Cost/ Mmbtu	$ 2.330	$ 2.371	$ 2.095	$ 1.608	$ 2.013	$ 2.446	$ 2.612	$ 2.869	$ 2.967	
Spot Purchases from Gas Purchse Rpt	$ 2.342	$ 2.325	$ 1.806	$ 1.620	$ 1.732	$ 1.807	$ 2.383	$ 2.562	$ 2.562	
Cost at Spot Price	$ 1,031,927.30	$ 1,389,650.18	$ 1,367,799.38	$ 1,204,544.56	$ 1,981,721.40	$ 2,721,145.04	$ 5,040,178.45	$ 4,983,866.29	$ 4,939,436.08	
Physical Hedging Costs	$ (2,846.11)	$ 27,233.55	$ 218,540.33	$ 72,076.52	$ 321,039.27	$ 962,409.84	$ 484,072.15	$ 506,773.46	$ 780,168.63	$ 6,073,353.10
Mo Allocated Costs collected in FAC	$ (2,220.04)	$ 21,300.31	$ 170,935.06	$ 56,882.57	$ 250,150.59	$ 740,900.13	$ 377,885.45	$ 404,699.92	$ 607,890.59	$ 4,739,070.27
(Gain)/Loss on Derivatives	$ 1,168,463.85	$ 730,103.70	$ 388,806.78	$ 201,600.00	$ -	$ 127,378.97	$ 229,222.67	$ 1,077,502.51	$ 1,104,510.40	
Jurisdictional factor	82.33%	82.33%	82.33%	82.02%	82.02%	82.02%	82.02%	82.02%	82.02%	
Mo Allocated Costs collected in FAC	913,806.47	678,078.87	302,636.12	167,084.70	0.00	99,252.42	178,606.01	839,570.18	660,830.47	$ 8,366,740.01
										$ 13,104,811.18
Total Cost of Fuel at spot prices										$ 43,604,131.88
Total Hedging Costs										$ 16,785,521.05
										38.50%
Proof:										
Cost - Gas & Commodity Charges	1,030,880.66	1,432,510.27	1,604,381.70	1,364,570.29	2,196,903.52	3,817,213.45	5,567,307.76	5,612,610.59	5,751,993.50	
Cost - Gas & Commodity Chg (Adj)	13,674.81	(4,483.78)	1,107.54	2,032.37	134,514.07	(100,242.33)	(10,834.14)	28,353.91	11,707.91	
	1,044,555.47	1,428,026.49	1,605,579.24	1,366,608.66	2,331,417.59	3,716,971.12	5,556,473.62	5,640,964.50	5,763,701.41	
From Above:										
Line 14 Commodity Transport	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	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	
	1,044,555.47	1,428,026.49	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	
Difference - Should be zero	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Schedule JSR-S-3
Highly Confidential