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Witness:	James A. Busch
Sponsoring Party:	MO PSC Staff
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Case No.:	ER-2006-0315
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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

SUPPLEMENTAL DIRECT TESTIMONY

OF

JAMES A. BUSCH

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2006-0315

Jefferson City, Missouri
July 2006

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the matter of The Empire District Company of Joplin, Missouri for authority to file tariffs increasing rates for electric service provided to customers in Missouri service area of the Company.	))))	Case No. ER-2006-0315

AFFIDAVIT OF JAMES A. BUSCH

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

James A. Busch, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Supplemental Direct Testimony in question and answer form, consisting of 13 pages to be presented in the above case; that the answers in the foregoing Supplemental Direct Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

James A. Busch

Subscribed and sworn to before me this 14th day of July 2006.

ROSEMARIE RIEDL
MY COMMISSION EXPIRES
June 1, 2009
NOTARY SEAL
#05509638
COLE COUNTY
NOTARY PUBLIC, STATE OF MISSOURI

Notary Public

My commission expires June 1, 2009

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THE EMPIRE DISTRICT ELECTRIC COMPANY

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Q. Please state your name and business address.

A. My name is James A. Busch and my business address is P. O. Box 360, Jefferson City, Missouri 65102.

Q. Are you the same James A. Busch that filed direct testimony in this proceeding?

A. Yes I am.

Q. What is the purpose of your supplemental direct testimony in this case?

A. I am responding to the *Commission's Order Requiring Additional Information or Supplemental Filing* issued on June 20, 2006, that requires the parties to file information regarding various issues regarding fuel costs for The Empire District Electric Company (Empire).

Q. What information are you providing in response to the Commission's order?

A. The additional information requested by the Commission has been requested in the form of five questions. The questions are as follows:

> 1. If the Commission is going to decide a revenue requirement for fuel and purchased power costs and the Commission is going to decide that revenue requirement based on an assumption about weather patterns, should the Commission use a historical average based on weather over a period of the last three years, five years, 10 years, 15 years, 30 years or some other period? Please provide specific

> information and data in support of the period on which you would have the Commission base its decision and indicate any rationale for opposing any other time periods.
>
> 2. Based on historical usage patterns and projections of future usage, how much natural gas and purchased power do you anticipate the Empire District Electric Company will use on an annual basis for the next three years? Please note any historical usage patterns and provide evidence, including any assumptions, in support of your position.
>
> 3. Based on the price of natural gas on July 10, 2006 and assuming average weather based on how a Party responds to Question 1, how much would it cost for Empire to hedge 100% of its estimated natural gas purchases for the next three years on an annualized basis? Please provide a detailed breakdown of costs.
>
> 4. What hedging strategy and amounts over the next three years would provide the most benefit to consumers?
>
> 5. Is there any other relevant information you wish to provide the Commission in response to this request?

I will address certain issues in Question 2, and answer Questions 3 and 4.

Q. Are there any other Staff witnesses filing supplemental direct testimony in response to the Commission's request?

A. Yes. Staff witness Dr. Henry Warren will address Question 1. Staff witnesses David W. Elliott and Lena M. Mantle will address Question 2. I will address certain issues in Question 2, and answer Questions 3 and 4. At this time, Staff has no further relevant information to provide the Commission in response to Question 5.

Executive Summary

Q. Please summarize your testimony.

A. First, I provide the rationale for Staff's use of its currently recommended natural gas and purchase power prices in the fuel model used by Staff to develop Empire's

expected natural gas usage over the next three years. Second, I provide the Staff's answer to Question 3, regarding annualized natural gas costs over the next three years. Finally, in response to Question 4, I provide Staff's opinion on an appropriate hedging strategy for Empire that is most beneficial to consumers.

Staff's Response to Commission Question 2

Q. What method did Staff utilize to answer Question 2?

A. Basically, Staff utilized its fuel model to answer Question 2. For a description of the model, please refer to the direct testimony of Staff witness David W. Elliott, filed in this proceeding on June 23, 2006. Please see Mr. Elliott's supplemental direct testimony for a description of how Staff used the fuel model to respond to Question 2.

Q. What prices for natural gas and purchased power were used to estimate the amount of natural gas and purchased power as requested in Question 2?

A. The natural gas and purchased power prices used in Staff's direct filing in this proceeding were also used in this analysis.

Q. Why did Staff use the same prices for natural gas and purchased power to answer Question 2 as it used in its direct filing?

A. Forecasting fuel and purchased power prices is a complicated process, requiring many assumptions regarding factors that will move the prices up or down. Because electricity markets are currently evolving and there is continuing volatility in the natural gas market, the only certainty about forecasting either natural gas prices or purchased power prices is that the forecast will be wrong since a number of the significant factors (e.g. weather and natural disasters) cannot be forecasted with a reasonable level of certainty. While Staff does believe that the electric utilities should continually evaluate the impact of changing

purchased power prices and fuel costs on their companies, which should include review of a variety of forecasted prices, Staff has not attempted to forecast purchased power prices or fuel prices in response to the Commission's questions. Staff believes that the prices it used in its direct filing, on June 23, 2006, are representative prices of what Empire can realistically purchase natural gas and/or purchased power over the next three year. In other words, when Staff develops its recommendation for fuel and purchased power expense, it is making a recommendation based upon what Staff believes is a just and reasonable amount of expense for the utility based on historical prices. Therefore, Staff did not change the prices for natural gas and purchased power in its fuel runs for the purpose of this supplemental filing.

Staff's Response to Commission Question 3

Q. What is Question 3?

A. Question 3 basically asks how much it would cost Empire to hedge 100% of its estimated natural gas purchases over the next three years based on the price of natural gas on July 10, 2006.

Q. What was the price of natural gas on July 10, 2006?

A. The price of natural gas can mean many things. The price of natural gas could be the daily spot price on the Henry Hub for actual deliveries of natural gas. It could be the daily spot price on another specific pipeline (i.e. Southern Star Central (SSC)) for actual deliveries of natural gas. It could mean the NYMEX (New York Mercantile Exchange) futures prices based on settlement on July 10, 2006. For purposes of this question, and based upon the other questions raised in the Order, Staff decided to use NYMEX settlement prices for July 10, 2006, for the months January 2007 – December 2009. NYMEX prices are based on the Henry Hub. As noted in the direct testimony of Staff witness Janis Fischer in this

proceeding, Empire does not purchase gas off of the Henry Hub, but rather off of SSC interstate pipeline. The prices on SSC are generally lower than the Henry Hub. Table 1 shows the NYMEX settlement data for August 2006 – December 2009:

Table 1 – NYMEX Monthly Settlement Prices August 2006 – December 2009

Month	Settle	Month	Settle	Month	Settle	Month	Settle
Jan-06	n/a	Jan-07	$ 10.037	Jan-08	$ 10.697	Jan-09	$ 10.267
Feb-06	n/a	Feb-07	$ 10.087	Feb-08	$ 10.722	Feb-09	$ 10.277
Mar-06	n/a	Mar-07	$ 9.897	Mar-08	$ 10.472	Mar-09	$ 10.037
Apr-06	n/a	Apr-07	$ 8.202	Apr-08	$ 7.872	Apr-09	$ 7.517
May-06	n/a	May-07	$ 8.022	May-08	$ 7.637	May-09	$ 7.277
Jun-06	n/a	Jun-07	$ 8.112	Jun-08	$ 7.727	Jun-09	$ 7.372
Jul-06	n/a	Jul-07	$ 8.227	Jul-08	$ 7.827	Jul-09	$ 7.472
Aug-06	$ 5.608	Aug-07	$ 8.317	Aug-08	$ 7.922	Aug-09	$ 7.572
Sep-06	$ 5.897	Sep-07	$ 8.427	Sep-08	$ 8.042	Sep-09	$ 7.702
Oct-06	$ 6.272	Oct-07	$ 8.607	Oct-08	$ 8.222	Oct-09	$ 7.877
Nov-06	$ 7.672	Nov-07	$ 9.377	Nov-08	$ 8.997	Nov-09	$ 8.647
Dec-06	$ 9.267	Dec-07	$ 10.202	Dec-08	$ 9.787	Dec-09	$ 9.412

Q. How much would it cost Empire to hedge 100% of its estimated natural gas purchases for the next three years on an annualized basis?

A. This question is being answered in two parts; first the approximate cost to purchase the natural gas is given, then a discussion regarding hedging mechanisms and their costs is given. More information than just the NYMEX prices is necessary to answer the first part of this question. First, the amount of natural gas Empire will use over the next three years needs to be estimated. To derive this estimate, Staff witness David Elliott ran the fuel model to estimate the amount of natural gas Empire will consume over the next three years.

Second, Empire already has hedged some of its natural gas purchases for the next three years, so this must be taken into account. Empire has provided Staff with its current hedged position which shows the volumes of natural gas it has already hedged over the next three years.

Third, the price of natural gas for the next three years needs to be estimated. For this, as noted above, Staff used the NYMEX settlements for January 2007 – December 2009. Staff also used the hedging information provided by Empire for the years 2007 – 2009.

According to the fuel run conducted by Mr. Elliott, Staff has estimated that over the next three years, Empire will burn the following amounts of natural gas: for year one, 11,190,370 million Btus (MMBtus); for year two, 11,744,300 MMBtus; and for year three, 12,204,910 MMBtus.

As of June 29, 2006, Empire has hedged 5,960,000 Dth (Decatherms) of natural gas for 2007; for 2008, 4,300,000 Dth of natural gas; and for 2009, 3,696,000 Dth of natural gas. A decatherm is the equivalent of a MMBtu.

Therefore, for those three years, Staff estimates that Empire would need to hedge an additional 5,230,370, 7,444,300, and 8,508,910 MMBtus of natural gas over each of the next three years, respectively, to attain hedged coverage of 100%.

As shown in Table 2 below, based on the amount of natural gas Empire would need to hedge and a simple average of yearly prices, the dollar amount for each of the next three years would be $46,861,500, $65,710,836, and $71,920,853, respectively. This amount does not take into account any basis differential between the Henry Hub and SSC, nor does it include any potential transaction fees that Empire would be responsible for.

Table 2 – Staff's Estimate of Annualized Cost Prior to Basis Differential

	Expected Volumes (MMBtus)	Hedged Volumes (MMBtus)	Need to Hedge (MMBtus)	Average Price	Annualized Cost
Year 1	11,190,370	5,960,000	5,230,370	$8.960	$ 46,861,500
Year 2	11,744,300	4,300,000	7,444,300	$8.827	$ 65,710,836
Year 3	12,204,910	3,696,000	8,508,910	$8.452	$ 71,920,853

Q. Is this Staff's answer to Question 3 regarding annualized natural gas costs for the next three years?

A. No.

Q. Why not?

A. The next step I took was to calculate the basis differential between the NYMEX and SSC. Once I calculated the basis differential I was able to calculate annualized natural gas costs, based on NYMEX pricing as of July 10. Basis differential was determined by using the basis differential given by Empire using its FUTRAK software tool as described on page 23 of Empire witness Mr. Todd Tarter's direct testimony in this proceeding. I developed a yearly average of potential monthly basis differentials and subtracted that average from the yearly NYMEX settlement average I had previously calculated.

Q. Would there be any transaction costs associated with Empire's hedging activity?

A. If Empire were to hedge through a broker, there would be some minimal transaction fees. If Empire were to hedge with a bank or directly with a supplier, there may not be any transaction fees. Either way, the fees would be negligible.

Q. So assuming no transaction costs, what would be the total amount of natural gas costs over the next three years?

A. In total, natural gas commodity costs for Empire based on July 10 NYMEX settlement prices minus basis differential would be $155,771,800 for the three year period in question.

Q. If Empire had hedged the rest of its expected natural gas volumes based on July 10 prices, would it have needed to pay $155,771,800 on that date?

A. No. Empire would not have had to pay that amount on July 10. Assuming the hedge was completed through NYMEX, Empire would have had to pay any transaction fees plus a margin amount. The margin that Empire would be required to pay is set by NYMEX and is a fraction of the total value of its hedged position. In addition, Empire would be subject to margin calls as the value of the hedge changed over time. If Empire would have hedged with a supplier, such as BP, there would be no upfront cost to Empire. Under this type of transaction, Empire would simply pay for the natural gas during the month it took actual deliveries from the supplier.

Q. Are there other ways in which Empire could hedge the rest of its expected natural gas usage?

A. Yes. Instead of using the futures or forward markets as described above, Empire could have purchased call options. This would require Empire to pay the amount of the option for a specific strike price.

Q. What is a strike price?

A. In trading with option contracts, the strike price is the specified price at which the contract can be exercised. For example, a call option with a strike price of $8.00 means that once the price is greater than $8.00, the holder of the option would exercise the option to lock in a price of $8.00. If the actual price for natural gas is below the strike price ($8.00 in this example), the holder of the option would let the option expire and purchase the lower price commodity instead.

Q. What would that cost be?

A. That value would be hard to calculate. First, the cost of an option contract is dependent upon a few variables. One of them is the strike price. Since options can be

purchased with many different strike prices, the prices can vary dramatically from over $1.00 per MMBtu down to $0.05 per MMBtu, depending upon how close the strike price is to the actual price of the commodity. Therefore, it is next to impossible to determine the cost to Empire if it would have chosen this hedging strategy since Staff has no indication as to what strike price would be appropriate.

Q. Are there other strategies that Empire could use?

A. Another strategy would be the establishment of a collar to hedge the price of natural gas. This would require the selling of a put option and the purchasing of a call option. This in effect would establish both a "ceiling" and a "floor" to bracket the amounts Empire would pay for natural gas. This strategy could entail very little upfront costs and the value of the collar would be hard to determine for the same reasons as indicated for using strike pricing.

Q. Are these types of strategies commonly used?

A. Yes. Natural gas Local Distribution Companies (LDCs) have been using call options and collars in various forms for the last eight to ten years in the state of Missouri. Please see the *Joint Report on Natural Gas Market Conditions, PGA Rates, Customer Bills & Hedging Efforts of Missouri's Natural Gas Local Distribution Companies* (Joint Report) issued on February 24, 2006, in Case No. GW-2006-0110, for a more thorough discussion of the various hedging strategies discussed in this testimony. As outlined in this Joint Report, each of the hedging mechanisms available to a utility has different costs and benefits, and management decisions regarding appropriate hedging strategies and desired outcomes greatly impact the costs of a hedging program.

Staff's Response to Commission Question 4

Q. What is Question 4?

A. Question 4 states, "What hedging strategy and amounts over the next three years would provide the most benefit to consumers?"

Q. Does Staff recommend that Empire hedge 100% of its expected natural gas usage?

A. At this time, Staff does not have an opinion as to how much natural gas Empire should hedge.

Q. Please elaborate.

A. Currently, Empire is operating under an Interim Energy Charge (IEC). This means that the consumers are charged a base rate for electricity usage, which includes a certain amount of fuel purchased power expense, plus the IEC amount which takes into account a somewhat higher fuel and purchased power expense. Based upon Empire's actual prudently incurred, variable fuel and purchased power expense, the ratepayers may see a refund of some, or all, of the IEC amount. In this proceeding, the Commission will decide whether the current IEC is continued or whether it is terminated, most likely in favor of a single point estimate of fuel and purchased power to be used in the determination of base rates. If the Commission decides to terminate the IEC and instead to adopt a single point estimate, the Commission, in effect, is fixing the price of energy for the consumers. No matter what the actual price of natural gas will be for the duration of those to-be-determined permanent rates, the consumers will be paying an energy price determined in this case. For example, assume the Commission agrees with Staff's recommendation for fuel which includes a price for natural gas of $6.30 per MMBtu. The ratepayers have in effect had the

price of natural gas hedged at $6.30 per MMBtu for the duration of the rates that come out of this case. If Empire's actual cost for natural gas exceeds $6.30, *ceteris paribus*, Empire's shareholders will make up the difference. If Empire's actual cost for natural gas is less than $6.30 per MMBtu, *ceteris paribus*, Empire's shareholders will keep the difference. In Staff's opinion, this is a strong incentive for Empire to control its energy costs and this benefits consumers.

If on the other hand the IEC continues, then some more of the risk has been shifted to the ratepayers. In this scenario, obviously the hedging strategy that will yield the lowest possible price of natural gas would be preferable. However, there is no strategy that can guarantee the lowest possible price.

Q. What is Staff's opinion regarding hedging strategies for electric companies?

A. Unlike in the natural gas industry in Missouri, which currently utilizes a Purchase Gas Adjustment (PGA) mechanism for the flow through of natural gas costs to customers, the electric companies in Missouri currently hedge to protect shareholders, not ratepayers. In Staff's opinion, this arrangement has maintained a strong incentive on the electric utility to control its fuel costs. Over the long-run, this should also be beneficial to consumers.

Q. Please elaborate.

A. Under the PGA mechanism that Missouri currently has in effect for its regulated natural gas utilities, the interests of the utilities and their customers are not clearly aligned. The ratepayers want the lowest price possible; in contrast, because the price of natural gas is flowed through on a dollar-for-dollar basis to the ratepayers, the utilities' primary interest is to avoid a prudence disallowance that may occur if the Commission finds

that the LDC purchased natural gas in an imprudent manner. For example, an LDC may not have utilized any hedging instruments to protect its consumers from the potential of increasing natural gas costs. This could lead Staff or some other party to recommend to the Commission a prudence disallowance of some of the natural gas costs. There is also a problem for consumers in that the prudence disallowance recommendation may take years before a final resolution is reached through a decision by the Commission and any appeal to the courts.

The LDCs will use a strategy that may not necessarily allow for the lowest possible price of natural gas consistent with volatility mitigation efforts. Thus, the LDC does not necessarily have the same level of interest in keeping natural gas prices as low as possible, which is in the best interest of the consumers, as the LDC's concerns are primarily focused on its actions being found to be prudent.

In contrast, in the electric industry without a fuel adjustment clause, the price of natural gas directly impacts the utility's bottom line. The electric utility has a vested interest in crafting a procurement strategy that is the most optimal for it. If prices rise too much, it affects the company's bottom line adversely. If prices fall, it affects the company's bottom line positively. Because the cost of fuel directly affects the utility's bottom line, it is Staff's opinion that it is this regulatory environment, where the fuel costs are set in the rate case, that provides the best protection to ratepayers in the long-run.

Q. Does Empire currently have a hedging strategy?

A. Yes it does. Please see the direct testimony of Empire witness Todd Tarter for a description of Empire's hedging strategy.

Q. Has Staff reviewed Empire's hedging strategy?

A. Yes it has.

Q. Does Staff have an opinion of Empire's hedging strategy?

A. Under the current regulatory environment that Empire is operating under, Staff believes that Empire's current hedging strategy is adequate. However, Staff has not evaluated Empire's current hedging strategy in the context of Senate Bill 179 and is not endorsing Empire's hedging strategy if Empire's method for recovery of fuel costs changes in the future.

Q. Does this conclude your direct testimony?

A. Yes.