

Exhibit No.  
Issue: Fuel and Purchased Power  
Witness: Todd W. Tarter  
Type of Exhibit: Surrebuttal Testimony  
Sponsoring Party: Empire District  
Case No. ER-2006-0315

**Before the Public Service Commission  
of the State of Missouri**

**Surrebuttal Testimony**

**of**

**Todd W. Tarter**

**August 2006**

\* Denotes Highly Confidential\*

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OF  
TODD W. TARTER  
ON BEHALF OF  
THE EMPIRE DISTRICT ELECTRIC COMPANY  
BEFORE THE  
MISSOURI PUBLIC SERVICE COMMISSION**

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SURREBUTTAL TESTIMONY  
OF  
TODD W. TARTER  
ON BEHALF OF  
THE EMPIRE DISTRICT ELECTRIC COMPANY  
BEFORE THE  
MISSOURI PUBLIC SERVICE COMMISSION  
CASE NO. ER-2006-0315

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Todd W. Tarter. My business address is 602 Joplin Street, Joplin, Missouri.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by The Empire District Electric Company (“Empire” or “Company”) as the  
6 Manager of Strategic Planning.

7 **Q. HAVE YOU PRESENTED OTHER TESTIMONY IN THIS PROCEEDING**  
8 **BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION**  
9 **(“COMMISSION”)?**

10 A. Yes, I have. I have presented direct, supplemental direct and rebuttal testimony in this  
11 proceeding.

12 **EXECUTIVE SUMMARY**

13 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

14 A. My purpose is to respond to the rebuttal testimony of the Staff of the Commission (“Staff”)  
15 witness Kwang Y. Choe, Office of the Public Counsel (“OPC”) witness Ralph C. Smith and  
16 Praxair and Explorer Pipeline (“Industrials”) witness Maurice Brubaker on the issue of on-  
17 system fuel and purchased power expense in this case.

**II. RESPONSE TO STAFF WITNESS KWANG Y. CHOE**

**Q. DID YOU REVIEW THE REBUTTAL TESTIMONY OF STAFF WITNESS KWANG Y. CHOE?**

A. Yes.

**Q. WHAT WAS THE PURPOSE OF HIS REBUTTAL TESTIMONY?**

A. His testimony was in response to the spot natural gas prices that I utilized for the fuel and purchased power simulation that was presented in my direct testimony. The spot market natural gas prices in my direct testimony were based on the natural gas futures market at that time.

**Q. HAS EMPIRE MADE AN UPDATED MODEL RUN SINCE THAT TIME?**

A. Yes. In rebuttal testimony, I presented an updated model run. In that run, the spot natural gas prices were updated to reflect the amount needed to physically hedge the remaining expected natural gas needs for 2007 based on actual price quotes from July 10, 2006, not simply the futures market.

**Q. DOES STAFF WITNESS CHOE AGREE WITH USING THE NATURAL GAS FUTURES MARKET PRICES IN THE PRODUCTION COSTS MODEL FOR RATEMAKING PURPOSES?**

A. No. Nearly all of his testimony focuses on the claim that the natural gas futures market is not an accurate predictor of actual future natural gas prices.

**Q. DOES EMPIRE BELIEVE THAT NATURAL GAS PRICES CAN BE PREDICTED PRECISELY?**

A. No. Empire has stated throughout this case and in past cases that natural gas prices cannot be predicted with any degree of certainty.

1 **Q. DOES STAFF WITNESS CHOE'S REBUTTAL TESTIMONY APPLY TO ALL OF**  
2 **THE NATURAL GAS PRICES IN EMPIRE'S MODELLING?**

3 A. No. His testimony concerns only spot natural gas prices. In Empire's update run, about  
4 \*\_\_\_\* of the expected natural gas burn is hedged. This means that a considerable amount  
5 of the expected natural gas need is already procured at a set price. As a result, Staff  
6 Witness Choe's testimony applies to about \*\_\_\_\* of the natural gas in Empire's update  
7 run modeling.

8 **Q. HOW WOULD YOU CHARACTERIZE THIS AMOUNT?**

9 A. The amount, \*\_\_\_\*, is significant. I say this because even relatively small changes to the  
10 price of natural gas (hedged and unhedged) can make a significant change to fuel and  
11 purchased power expense in this case.

12 **Q. PLEASE PROVIDE AN EXAMPLE.**

13 A. For a simple example, I will assume an annual natural gas burn of 10 million MMBTUs,  
14 which is very close to the annual natural gas usage in the Company and Staff model runs in  
15 this case. I will also assume that this amount of natural gas consumed would remain  
16 constant as the price of gas (the weighted average of hedged and unhedged) changes. In  
17 this example, every 1 dollar per MMBTU change in natural gas price would mean a \$10  
18 million change in fuel cost. Likewise, every 50 cent change in the natural gas price would  
19 mean a \$5 million change in fuel cost, every 10 cent change would mean a \$1 million  
20 change in fuel cost, and every 1 cent change would mean a \$100 thousand change in fuel  
21 cost.

22 **Q. BASED ON STAFF WITNESS CHOE'S REBUTTAL TESTIMONY, WHAT ARE**  
23 **SOME OF THE FACTORS THAT AFFECT NATURAL GAS PRICES?**

1 A. On page 4, line 13, he explains that there are many factors that affect natural gas prices  
2 including weather, oil prices, drilling rig counts, the level of electric generation from  
3 natural gas-fired combustion turbines, national storage levels for natural gas, the level of  
4 economic activity, war, and the psychology of the natural gas market participants.

5 **Q. ARE THERE ANY PROBLEMS ASSOCIATED WITH USING HISTORICAL**  
6 **NATURAL GAS PRICES TO REPRESENT THE SPOT NATURAL GAS PRICE**  
7 **AS STAFF HAS DONE IN THEIR PRODUCTION COST MODEL IN THIS CASE?**

8 A. Yes. Historical natural gas prices are not accurate predictors of what future natural gas  
9 prices will be either. Historical prices reflect the affects of weather and all of the other  
10 factors that Staff witness Choe mentions in his rebuttal testimony.

11 **Q. DID EMPIRE USE THE FUTURE'S MARKET FOR SPOT NATURAL GAS**  
12 **PRICES?**

13 A. In the update run presented in rebuttal testimony, Empire used actual quotes from July 10,  
14 2006 that could have been executed to hedge 100% of the expected natural gas burn. This  
15 approach was not exactly the same method used by Empire for the model run in the  
16 Company's initial filing and direct testimony that is the subject of Staff witness Choe's  
17 rebuttal. But the prices in Empire's direct case were based on the futures market for  
18 natural gas. As I stated in my rebuttal testimony starting on page 12, line 2, "The updated  
19 production simulation contains recent forward looking natural gas price information for  
20 calendar year 2007, the period during which rates from this rate proceeding are likely to be  
21 in effect. Natural gas price information from July 10, 2006 was used in the update of the  
22 Company's production cost simulation to be consistent with the information presented in  
23 supplemental direct testimony. These current natural gas prices have been used to model

1 the future, because they are the best proxy available for the non-hedged portion of  
2 Empire's natural gas requirements at this time. However, due to the volatility of the natural  
3 gas market, the future price of natural gas cannot be predicted precisely."

4 **Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF STAFF WITNESS CHOE'S**  
5 **RATIONALE AS TO WHY THE NATURAL GAS FUTURES MARKET IS NOT**  
6 **AN ACCURATE PREDICTOR OF ACTUAL FUTURE NATURAL GAS PRICES.**

7 A. On page 5 of his rebuttal testimony he explains that the natural gas futures price today can  
8 not contain all available relevant information regarding the actual natural gas price in the  
9 future and, as such, does not permit a correct forecast of the future actual price. In other  
10 words, the natural gas futures market that lists a price for next year, does not reflect what  
11 the weather or the other factors that affect natural gas prices will be next year. When Staff  
12 witness Choe looked at price comparisons between the future prices and the subsequent  
13 spot prices at the 12-month horizon during July 1995 through July 2006, he found that  
14 there were significant discrepancies between the two prices (the prediction and the actual  
15 price) during some of those periods. (See the Rebuttal Testimony of Kwang Y. Choe page  
16 5).

17 **Q. IS THE SAME CRITICISM TRUE OF NEARLY ALL PREDICTED DATA?**

18 A. Yes.

19 **Q. PLEASE EXPLAIN.**

20 A. A good example would be forecasted load (i.e., forecasted electric demand and energy). At  
21 the time we make a prediction of future load we do not know what the weather or other  
22 factors that affect the load will be in the future. At times of abnormal weather or other  
23 abnormal events, there are significant discrepancies between the actual load and the

1 forecast of that period's load. Some discrepancy between the forecast and the actual data is  
2 quite common. The weather factor alone is extremely unpredictable.

3 **Q. DO THE PRODUCTION COST MODELS USED IN THIS CASE CONTAIN**  
4 **FORECASTED DATA OTHER THAN FORECASTS OF NATURAL GAS**  
5 **PRICES?**

6 A. Yes. But I would say that the natural gas price is probably affected by more factors and is  
7 the most volatile of all of the forecasted variables in the production cost model.

8 **Q. SINCE STAFF WITNESS CHOE DOES NOT BELIEVE THAT THE NATURAL**  
9 **GAS FUTURES MARKET IS A GOOD PREDICTOR OF FUTURE NATURAL**  
10 **GAS PRICES, DOES HE SUGGEST AN ALTERNATE APPROACH THAT**  
11 **SHOULD BE USED TO FORECAST FUTURE NATURAL GAS PRICES?**

12 A. No, he does not.

13 **III. RESPONSE TO OPC WITNESS RALPH C. SMITH**

14 **Q. DID YOU REVIEW THE REBUTTAL TESTIMONY OF OPC WITNESS RALPH**  
15 **C. SMITH?**

16 A. Yes.

17 **Q. DOES THIS WITNESS RECOMMEND USING THE FUTURES MARKET FOR**  
18 **SPOT NATURAL GAS PRICES IN THE PRODUCTION COST MODELS?**

19 A. Yes. OPC witness Smith does recommend using the futures market for spot natural gas  
20 prices, although he does suggest a different timeframe than the Company used. He  
21 suggests using NYMEX futures prices with an appropriate basis adjustment as of March  
22 31, 2006 for the period April 2006 through December 2006.



1 **Q. PLEASE SUMMARIZE OPC WITNESS SMITH'S RECOMMENDATIONS FOR**  
2 **ON-SYSTEM FUEL AND PURCHASED POWER EXPENSE IN THIS CASE?**

3 A. On page 13 of his rebuttal testimony, OPC witness Smith recommends that the parties  
4 presenting fuel model results in testimony should update their fuel models for the updated  
5 test year using:

- 6 • Empire's actual spot market purchase prices for the first quarter of 2006 and
- 7 • The March 31, 2006 NYMEX futures prices, which appear in a table on page 12 of
- 8 his rebuttal testimony, less an appropriate basis difference should be used as the
- 9 fuel model input values for Empire's spot gas purchases in the respective months.

10 **Q. ARE THERE ANY PROBLEMS WITH THESE RECOMMENDATIONS?**

11 A. Yes. The prices he recommends may not be representative of the prices that could occur  
12 when the rates from this case are in effect. His first suggestion is to use the actual spot  
13 market purchase prices for the first quarter of 2006. But this timeframe does not even  
14 encompass an entire year. It most notably omits any summer data which is Empire's peak  
15 demand season. It also contains a very mild January 2006 which is usually Empire's  
16 largest demand and energy winter month. He does not fully explain in his testimony how  
17 these prices should be used in the models. His suggestion for spot market purchase price  
18 does not seem to address the fact that purchase prices have seasonal and even time of day  
19 variation. The second suggestion is to use the NYMEX futures for April through  
20 December of 2006 as of March 31, 2006 for the spot natural gas prices. Again, we are  
21 trying to determine the correct level of *annual* on-system fuel and purchased power  
22 expense, and the data suggested by OPC Witness Smith does not cover an entire year. It is  
23 unclear how the modeler should utilize these nine monthly prices. This period also omits

1 the winter months of January through March, and the winter typically contains some of the  
2 highest natural gas prices in a year. Even if we were to use actual data for January through  
3 March 2006 for the omitted prices, this actual period contained a very mild January where  
4 Empire did not even purchase any spot natural gas.

5 **Q. OPC WITNESS SMITH STATES THAT USING THE MARCH 31, 2006 NYMEX**  
6 **FUTURES FOR SPOT NATURAL GAS SHOULD RESULT IN REDUCED FUEL**  
7 **AND PURCHASED POWER COSTS COMPARED TO EMPIRE'S FILED**  
8 **POSITON. HOW DO YOU RESPOND?**

9 A. It is true that natural gas futures prices have declined since November 2005, which was the  
10 data utilized in Empire's direct testimony. It is also true that using lower spot natural gas  
11 prices alone would lead to a lower overall cost. However, Empire has made other changes  
12 to the model run in addition to updating natural gas prices, as described in my rebuttal  
13 testimony beginning on page 10, line 20. These changes include using increased hourly  
14 load data and correcting the number of planned outage days for the units comprising the  
15 Westar Jeffrey purchase among others. The combined effect of all of the changes, which  
16 include using lower gas prices, was a slightly higher cost on a \$/MWh basis for the  
17 updated run as compared to the run in direct testimony.

18 **IV. RESPONSE TO INDUSTRIAL WITNESS MAURICE BRUBAKER**

19 **Q. DID YOU REVIEW THE REBUTTAL TESTIMONY OF INDUSTRIAL'S**  
20 **WITNESS MAURICE BRUBAKER?**

21 A. Yes.

1 **Q. WHAT WAS THE EXTENT OF INDUSTRIAL'S WITNESS BRUBAKER'S**  
2 **REBUTTAL TESTIMONY WITH REGARD TO ON-SYSTEM FUEL AND**  
3 **PURCHASED POWER EXPENSE?**

4 A. Industrial's witness Brubaker only commented on the model runs that were presented in  
5 supplemental direct testimony. He did not respond to Empire's direct testimony on the  
6 matter of on-system fuel and purchased power expense. In other words, he commented on  
7 the supplemental model runs for years 2007-2009 and not on the normalized on-system  
8 fuel and purchased power model run that Empire supplied for this case.

9 **Q. PLEASE SUMMARIZE HIS COMMENTS ON THE MODEL RUNS FOR**  
10 **SUPPLEMENTAL DIRECT TESTIMONY.**

11 A. Based on my understanding of his testimony, Industrial's witness Brubaker questioned the  
12 relevance of the computer model runs that were presented in supplemental direct  
13 testimony. He also did not agree with the assumption that the remainder of Empire's gas  
14 needs was hedged using July 10, 2006 price data. On page 8, beginning at line 22 of his  
15 rebuttal testimony he refers to this as "... the faulty nature of the assumptions underlying  
16 Tarter's production cost simulation studies."

17 **Q. WHY DID EMPIRE PRESENT THE MODEL RUNS THAT UTILIZE THOSE**  
18 **ASSUMPTIONS?**

19 A. In order to respond to a Commission order.

20 **Q. DOES EMPIRE SEE ANY VALUE OF THE SUPPLEMENTAL RUNS FOR 2007-**  
21 **2009?**

22 A. Yes. At the very least, the supplemental runs can be used to judge the reasonableness of  
23 the normalized runs in this case.

1 **Q. DO YOU HAVE ANY OTHER COMMENTS ABOUT INDUSTRIAL'S WITNESS**  
2 **BRUBAKER'S REBUTTAL TESTIMONY?**

3 A. Yes. Industrial's witness Brubaker stated that Empire did not present any workpapers with  
4 the model runs in supplemental direct testimony. On page 9 starting at line 14 he states,  
5 "At a minimum the input values would be expected to constitute workpapers. Indeed, Mr.  
6 Tarter provided significantly more information in his direct testimony with respect to  
7 Empire's initial production cost simulation than was provided in the supplemental  
8 testimony, which essentially included only gas prices and a single page output report."

9 **Q. HOW DO YOU RESPOND?**

10 A. Contrary to what Mr. Brubaker says, Empire did provide more than gas prices and a single  
11 page output report. Empire provided all of the natural gas prices, all of the hedged gas  
12 positions within the body of the supplemental direct testimony and attached to my  
13 supplemental direct testimony were three schedules, which totaled eight pages. These  
14 schedules included a run summary for each of the model runs presented in supplemental  
15 direct testimony, all of the unit input values, and the unit's maintenance schedules for each  
16 model run. This was the same type of information that was provided with direct testimony  
17 with respect to Empire's initial production cost simulation.

19 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

20 A. Yes, it does.