EXECUTIVE SUMMARY
FOR THE DIRECT TESTIMONY OF TODD W. TARTER
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO.

Purpose of Testimony
The testimony addresses the fuel and purchased power (F&PP) expenses in this case, and explains why Empire is seeking to implement an Energy Cost Recovery Rider (ECR) that is designed to coincide with and utilize recent Missouri legislation allowing such an approach. It also presents an annualized and normalized F&PP expense level that was developed with a computer production cost model. This annualized and normalized approach represents an alternative, although less desirable, approach to setting a F&PP amount for ratemaking purposes if an ECR is not approved in this case.

Summary
In section III, the testimony provides some history of Empire's F&PP expenses as well as some history of natural gas prices and wholesale purchased power prices which are significant cost drivers on Empire's system. Other factors contributing to the recent increase of Empire's F&PP expense are events such as coal supply disruptions, and recent hurricanes in the Gulf Coast. This section also describes some measures that the Company has undertaken to try to alleviate the volatility associated with its F&PP costs including an explanation of the Company's natural gas hedging program.

Section IV provides a recommended level of F&PP expense to be used in this case if an ECR is not approved, and provides information about the computer model known as PROSYM, which was used to develop this annualized and normalized level of F&PP expense. Section V describes the generating unit data used in the computer model, Section VI describes the fuel data used in the computer model, Section VIII describes the purchased power data used in the computer model, including the new 150 MW Elk River Wind purchase, and Section IX describes the other fuel related costs included in the normalized level of F&PP expense.

Conclusion
Empire's F&PP costs have exceeded the interim energy charge (IEC) ceiling that was established in Case No. ER-2004-0570. The Company does not recover F&PP costs above the IEC ceiling.

Due to fuel price volatility and the need of an electric utility to have a realistic, timely and reasonable opportunity to recover prudently incurred F&PP costs, Empire requests the authority to implement an ECR in this case as permitted by section 386.266 RSMo.

If an ECR is not approved, Empire requests an annual total company fuel and purchase power expense including demand charges of $162,888,204 to be used to establish base electric rates in this case.

Exhibit No.:
Issue: Energy Cost Recovery, Fuel and Purchased Power Expense
Witness: Todd W. Tarter
Type of Exhibit: Direct Testimony
Sponsoring Party: Empire District
Case No.
Date Testimony Prepared: February 2006

Before the Public Service Commission
Of the State of Missouri

Direct Testimony

of

Todd W. Tarter

February 2006

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OF
TODD W. TARTER
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
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DIRECT TESTIMONY
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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

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

A. The Empire District Electric Company ("Empire" or "Company"). My title is Manager of Strategic Planning.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND FOR THE COMMISSION.

A. I graduated from Pittsburg State University in 1986 with a Bachelor of Science Degree in Computer Science. After graduation I received a mathematics education certification and became a mathematics teacher for Columbus Kansas Unified School District # 493. In May 1989, I joined Empire as a Planning Analyst. In 1994 I was promoted to Senior Planner. My primary functions at that time were coordinating the Company's construction budget, fuel and purchased power projections and financial forecasts. In August 1998, I became a Systems Analyst in the Information Technology Department. In November 2000, I left Empire to become a Senior Ecommerce Programmer Analyst with Leggett and Platt, Inc. In June 2001 I rejoined Empire as a Lead Systems Analyst in the Information Technology Department. I moved to the Planning and Regulatory Department in June 2002, where my primary duties were the preparation of the demand and energy and sales

and revenue forecasts. In September 2004, I was promoted to my current position where I work on fuel and purchased power cost projections and resource planning.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS CASE?

A. My direct testimony addresses the appropriate consideration of fuel and purchased power expense. First, I will explain why the Company is requesting what I will generally refer to as an Energy Cost Recovery Rider ("ECR"). This request is designed to coincide with and utilize recent Missouri legislation allowing such an approach. I will also discuss how Empire's fuel and purchased power expenses have dramatically increased since its last Missouri rate proceeding and the reasons why. In addition, I will also present figures for an annualized and normalized fuel and purchased power expense developed with a production cost computer model. In connection with that, I will describe the modeling process and discuss the key data inputs to the model. This annualized and normalized approach represents an alternative, although less desirable, approach to setting a fuel and purchased power amount for ratemaking purposes if an ECR is not approved in this case.

II. ENERGY COST RECOVERY

Q. WHY IS EMPIRE PROPOSING AN ECR IN THIS RATE CASE?

A. Fuel and purchased power expense is the largest expense category Empire experiences in providing electric service to customers. During the test year of the 12 months ended (TME) September 30, 2005 that Empire has presented in this case, total fuel and purchased power expenses were about 50% of total electric expenses. As the Commission is no doubt aware, we are currently in a period of significant volatility in fuel and purchased power costs since energy costs are making regular headlines. The combination of (1) fuel and purchase power costs being the largest of Empire's expenses, and (2) the magnitude of increases in their costs

since Empire's last Missouri rate proceeding has meant that the Company has not been able to recover its fuel and purchased power costs. The Company seeks an ECR in this case in order for it to have the opportunity to recover all of its prudently incurred fuel and purchased power expense attributable to its Missouri retail electric customers.

Q. ARE THERE ENERGY COST RECOVERY MECHANISMS IN OTHER JURISDICTIONS?

A. Yes. Missouri is the only jurisdiction of Empire's five jurisdictions where there is not some type of ECR. These energy adjustment clauses generally operate to enable the Company to recover its prudently incurred fuel and purchased power energy costs on a timely basis.

In Missouri, Empire was given permission to utilize an interim energy charge (IEC) in its last rate case, Case No. ER-2004-0570. The Missouri IEC became effective March 27, 2005, and is set to expire in March 2008.

Q. PLEASE EXPLAIN THE PARAMETERS OF THE CURRENT EMPIRE IEC IN MISSOURI.

A. The IEC is based on variable fuel and purchased power (energy) costs for Missouri on-system retail customers. It does not apply to demand costs associated with purchased power or to fixed natural gas reservation charges. The IEC approach recognizes that energy costs can fluctuate. Instead of having just one number as the assumed energy cost in the customer's base rate, it establishes a band or range with a top and a bottom that I will refer to as a "floor" and a "ceiling." A portion of the energy expense is built into "base" rates. A base rate would be one that does not vary. This represents the IEC floor. To deal with the potential for the expenses being volatile, customers are charged a separate and additional IEC rate of .002131 $/KWh. The IEC charge, which is separate and subject to a possible refund at a later date, is

based on the actual fuel and purchased power costs during the IEC period. This IEC rate, which is not a part of the base rates, creates the IEC ceiling in the Company's Missouri electric rates. In a scenario where Empire's actual energy costs are exactly equal to the IEC floor, then base rates will cover the cost of energy and the Company will be required to refund all of the IEC revenue it recovers, plus interest. In another scenario where actual energy costs are exactly equal to the IEC ceiling during the IEC period, then the base rates plus the IEC rate will perfectly cover the cost of energy for Empire's Missouri retail customers and the Company will keep all of the IEC revenue collected during the IEC period.

Q. ARE THERE OTHER POSSIBLE OUTCOMES DURING AN IEC PERIOD?

A. Yes. There are three other possible outcomes. Actual energy costs could be higher than the IEC ceiling, lower than the IEC floor, or be somewhere within the IEC band. If the actual energy cost ends up somewhere within the IEC band, the Company would keep a portion of the IEC revenue equal to the amount necessary to fully recover the energy costs and then it would refund the remainder with interest back to its Missouri retail customers. If the actual energy cost is below the IEC floor, then the Company would be required to refund all of the IEC revenue collected with interest. If the actual energy cost is above the IEC ceiling, then the Company would keep all of the IEC revenue collected and absorb the remainder of the energy costs. As you can see, Empire can be at significant financial risk if the actual fuel and purchased power expenses it incurs is higher than the IEC ceiling.

Q. PLEASE DESCRIBE THE PARTICULAR IEC FLOOR AND CEILING ESTABLISHED IN THE LAST RATE CASE.

A. Empire's current IEC floor (without demand charges) is 21.97 dollars per megawatt hour ($/MWh) and the IEC ceiling is 24.11 $/MWh. If purchase demand charges and natural gas

firm transportation are included this would make the IEC floor 24.68 $/MWh and the IEC ceiling 26.66 $/MWh. This is shown in Schedule TWT-1 attached to my testimony.

Q. WHAT HAS HAPPENED TO EMPIRE'S ACTUAL MISSOURI FUEL AND PURCHASED POWER COSTS SINCE THIS IEC BEGAN NEAR THE END OF MARCH 2005?

A. During the IEC period of March 27, 2005 through December 31, 2005, actual Missouri variable fuel and purchased power expense has averaged *----* $/MWh, well above the IEC ceiling of 24.11 $/MWh. During this time, Empire's Missouri retail sales were *----------* MWh. Since actual energy costs have been *---* $/MWh greater than the IEC ceiling, the Company has been forced to absorb roughly *----------* in increased energy costs since the IEC began just nine months ago. These figures are from an IEC Report which is included as Schedule TWT-2 to my testimony.

Q. IS THE IEC THAT STARTED IN MARCH OF 2005 THE ONLY IEC THAT EMPIRE HAS HAD IN MISSOURI?

A. No. Empire had one other IEC. It was established in Case No. ER-2001-299 and became effective on October 2, 2001.

Q. WHAT WAS THE RESULT OF THAT 2001 IEC?

A. In that situation, fuel and energy costs dropped subsequent to the implementation of the IEC. The Company sought and received permission to reduce the IEC effective June 14, 2002. The 2001 IEC ended early as of December 1, 2002, and all of the IEC revenue that was collected was refunded to customers with interest.

Q. WHAT IS EMPIRE RECOMMENDING REGARDING FUEL AND PURCHASED POWER RECOVERY IN THIS CASE?

A. Empire is requesting, or making an "application" within the context of this rate case since no application rules are in place at this time, that the Commission approves the implementation of a procedure allowing periodic rate adjustments for its Missouri retail customers outside of general rate proceedings. While the IEC concept has been a definite improvement over the previous approach of trying to guess one correct number for future costs and collecting only that amount in Missouri retail base rates, recent experience demonstrates that this still is not the best solution. Empire seeks the implementation of a more traditional and robust ECR in Missouri—an ECR that has more flexibility than the current IEC process. The ECR mechanism requested by Empire in this proceeding would enable Empire to request periodic rate adjustments outside of a general rate proceeding to reflect the actual changes, both increases and decreases, in its prudently incurred fuel and purchased power costs.

Q. IS THERE AN UNDERLYING PREMISE FOR EMPIRE'S REQUEST?

A. It is based upon Missouri Senate Bill 179, which was signed by the governor in July 2005 and I understand has been codified as section 386.266 RSMo. This new law, and the accompanying rules which the legislation directs the Commission to adopt to implement the changes, is designed to enable Missouri's electric utilities to utilize periodic rate adjustments to recover the cost of fuel and purchased power used to provide service to retail electric customers in Missouri. This approach should include features that provide incentives to improve the efficiency and cost-effectiveness of the utility's fuel and purchased power procurement and provide the utility with a sufficient opportunity to earn a fair return on equity. It is Empire's belief that section 386.266 allows it to apply for the ECR adjustment mechanism prior to the implementation of the rules governing the ECR process; however, the statute directs the Commission to have these ECR rules in place prior to making any

decisions with regard to such an application.

Q. ARE YOU PROVIDING ANY SUPPORTING INFORMATION FOR YOUR REQUEST OF AN ECR?

A. Yes. The following supporting information is attached to my testimony: Schedule TWT-3 is the supply side and demand side resources that the Company expects to use to meet its load for the next four years; Schedule TWT-4 is the expected dispatch of those resources (generation levels) for the next four years; Schedule TWT-5 is the expected heat rates for each supply side resource for the next 4 years; Schedule TWT-6 shows the fuel types for each supply side resource; and Schedule TWT-7 provides information about the long-term resource planning process.

III. FUEL AND PURCHASED POWER COST HISTORY

Q. PLEASE PROVIDE SOME HISTORY OF EMPIRE'S FUEL AND PURCHASED POWER COSTS.

A. The table below shows the recent history of Empire's total company (meaning all of its five jurisdictions, not just Missouri) on-system fuel and purchased power costs, including purchased power demand charges and fixed natural gas reservation charges.

TOTAL COMPANY ON-SYSTEM FUEL AND PURCHASED POWER COSTS INCLUDING PURCHASE & NATURAL GAS DEMAND CHARGES

-------	*-------------* *-------------*	*------*	*------*
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As indicated, total on-system fuel and purchased power costs in 2003, the test year utilized by Empire in the previous Missouri rate case, was $104,714,009 or an average of 21.15 $/MWh. By the twelve months ending (TME) September 2005, the test year utilized by Empire in this case, this same expense had grown to $138,482,415 or an average of 26.59 $/MWh, an increase of 25.7 % per MWh. For calendar year 2005 this same expense was *----------* or *-----* $/MWh. On a $/MWh basis, the year of 2005 is the largest one year percentage increase in fuel and purchased power expense for the Company in at least the last fifteen years. Part of this increase is due to the differences in weather in 2004 versus 2005, but most of the increase is due to rising fuel and purchased power costs.

The following graph which I prepared shows the trend in fuel and purchased power costs in recent twelve-month ending periods from TME Dec-03 to TME Dec-05.

Twelve-Month Ending Fuel and Purchased Power Costs with Demand

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Q. WHAT ARE SOME OF THE KEY FACTORS IN THIS INCREASE IN FUEL AND PURCHASED POWER COSTS?

A. The costs of nearly all forms of fuel used by Empire, including fuel oil and coal, have been rising recently, but the key drivers are certainly the rapid increases in natural gas and purchased power prices.

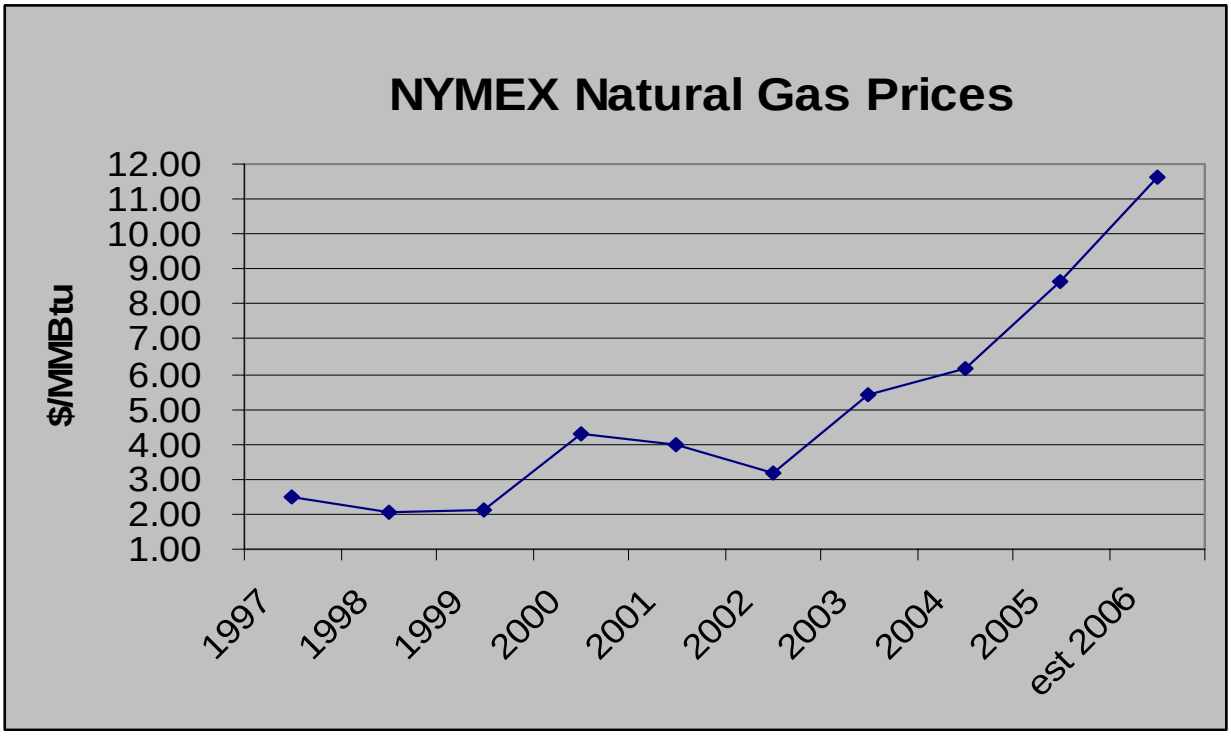
Q. PLEASE PROVIDE SOME HISTORY OF NATURAL GAS PRICES.

A. The following table that I prepared shows a historical comparison of reported natural gas prices based on NYMEX (the New York Mercantile Exchange) prices. The historical periods are based on the monthly NYMEX futures expired (settled) prices, and the future periods are based on NYMEX futures as of December 16, 2005. NYMEX is the world's largest physical commodity futures exchange and the preeminent trading forum for energy, and is commonly considered the most liquid and price transparent pricing point for natural gas in the United States. The standard contract point is at the Henry Hub which is physically located in Louisiana. The natural gas prices are expressed in dollars per one million British thermal units ($/MMBtu). One million British thermal units (one MMBtu) of natural gas is roughly equivalent to one thousand cubic feet (mcf) or one dekatherm (Dth) of natural gas.

Natural Gas Prices

	Annual Average Based on NYMEX Monthly Settle Prices $/MMBtu	Annual Average Based on NYMEX Futures Dec 16, 2005 $/MMBtu
1997	2.472	
1998	2.081	
1999	2.143	
2000	4.307	
2001	3.963	
2002	3.167	
2003	5.417	
2004	6.138	
2005	8.616	
2006		11.637
2007		10.046
2008		8.884
2009		7.989
2010		7.356

This table is presented to illustrate the recent increase in market natural gas prices from a common pricing point and does not necessarily represent the price that Empire has paid for natural gas that it has burned or procured. As I will explain later, Empire has hedged a substantial portion of its natural gas requirements in recent years. The term hedging that I used refers to various mechanisms, both physical and financial, which are employed to contractually fix or stabilize the price of the commodity. However, the substantial increase in natural gas prices depicted in the table is a major reason for the increase in Empire's fuel and purchased power costs. In addition, we at Empire believe the substantial increase in natural gas prices is a major cause of the dramatic increase we have seen in spot purchased power prices. There are a number of variables that impact the price and availability of spot market energy such as generating unit availability, transmission issues, weather and certainly, fuel costs including the price of natural gas.



Q. PLEASE PROVIDE SOME HISTORY OF EMPIRE'S WHOLESALE MARKET PURCHASED POWER PRICES.

A. Empire does purchase power from the wholesale market from time to time. The prices are not fixed in the sense that they are set by a tariff sheet approved by a regulatory agency. The following table shows the amount of energy purchased by Empire on the wholesale power market, and the average price paid per megawatt hour. The data represents total company (all five jurisdictions) on-system non-contract purchases, meaning these purchases were made in the open market and were not the subject of a pre-existing contract.

NON-CONTRACT PURCHASED POWER ENERGY AND AVERAGE PRICE

---------	*--------* *--------*	*----------* *----------*	*--------*
---------	*--------*	*----------*	
---------	*--------*	*----------*	*----------*
---------	*--------*	*----------*	
---------	*--------*	*----------*	*----------*
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As you can see, during the year 2003, the test year utilized by Empire in the last Missouri rate case, the average non-contract purchase price was 35.76 $/MWh. By TME Sep-05, the test year utilized by Empire in this case, the average price paid had increased to *----------* *----------*. During the current IEC period, the average price of non-contract purchase has been *----* $/MWh. *----------* which reflects the prevailing prices at about the time that the current IEC was established.

Q. ARE THERE OTHER FACTORS THAT ARE CONTRIBUTING TO RECENT HIGH ENERGY COSTS?

A. Yes. While natural gas prices and wholesale purchased power prices are the key drivers to Empire's increase in fuel and purchased power costs, there are other factors that contribute to increased fuel and energy costs. Other fuel costs, such as fuel oil and coal have increased over time. Various circumstances, including the May 2005 train derailments in Wyoming, have constrained the movement of coal out of the Powder River Basin. Recently coal conservation has begun in the Midwest region due to these rail transportation issues. This coal conservation has negatively impacted the Company's Jeffrey Energy Center contract purchase from Westar (the Jeffrey Energy Center is a generating station located in Kansas) and Empire's share of the Iatan Plant (located near St. Joseph, Missouri) output to some extent. At this point, coal conservation has not lowered the output from the Company's Riverton and Asbury coal units, but coal inventory levels at both of these sites are lower than normal. Coal is the fuel source for some of the lowest cost energy produced in the region, so coal conservation may also have some impact on the wholesale power market prices that Empire is seeing. Uncontrollable events such as coal supply disruptions, and the recent hurricanes in the Gulf Coast, can all have an impact on fuel and purchased power costs.

Q. WHAT IS THE OUTLOOK FOR FUTURE ENERGY COSTS?

A. In today's environment, it is difficult if not impossible to say what the future will hold for energy costs. At the time that Empire's current rates were implemented in Missouri during the last rate proceeding (rates were effective March 27, 2005), I do not think that anyone involved in that case would have anticipated that natural gas prices or wholesale market prices would be at the recent levels that I have described in this testimony. On page 8 beginning at line 10 of Staff witness John P. Cassidy's direct testimony in Empire's last case, he says: "The Staff believes that given the current volatile state of natural gas prices no one

can predict, with a reasonable degree of certainty, the natural gas prices that Empire will pay in the future to fuel their generating facilities….The uncertainty surrounding natural gas prices also impacts the cost of purchased power obtained on the market."

According to a news article from November 22, 2005, Joseph Kelliher, chairman of the Federal Energy Regulatory Commission, stated that progress is being made in restoring offshore natural gas facilities shut down by the 2005 hurricanes, but predicted that gas prices will remain high as demand outpaces supply. Recovery of operations are progressing along the Gulf Coast, but the chairman added, "I don't think they'll go back to the level they were a few years ago."

If NYMEX gas futures are indicative of future natural gas prices, the next few years may still reflect prices near historically high levels. At December 16, 2005, future prices from the Henry Hub for the next 36 months averaged 10.189 $/MMBtu, ranging from a low of 8.052 to a high of 13.880 $/MMBtu. Over the next 60 months the average was 9.215 $/MMBtu.

Basically, I share the sentiment in the quote from Staff witness Cassidy that I mentioned before. I do not think it is possible to accurately predict future energy costs, but it appears to me from all of the objective evidence that the trend of high energy costs will continue in the near term, and given that Empire has significantly under collected its fuel and purchased power costs since the IEC began, there certainly appears to be a very low probability of Empire's energy costs getting back into the band of the current IEC anytime soon (i.e., from the period beginning March 27, 2005).

Q. WHAT HAS EMPIRE DONE TO TRY TO ALLEVIATE THE VOLATILITY ASSOCIATED WITH ITS FUEL AND PURCHASED POWER COSTS?

A. The Company has several measures in place to help manage the costs of energy.

- We have a natural gas hedging program that has been in place since 2001 that is designed to mitigate energy price volatility. A portion of Empire's expected needs for natural gas are hedged financially or physically in advance—in effect dollar cost averaging the price of natural gas to remove volatility for both Empire and Empire's customers.
- During periods of volatile prices, short energy supply or extreme weather, Empire's wholesale energy trading desk is staffed to cover extended hours. The energy traders contact other energy providers in an effort to find the most economical power available on an hourly basis. They also use various analytical tools to help with economic generating unit dispatch decisions while maintaining reliability.
- During the summer of 2005, Empire burned fuel oil instead of natural gas in some of the dual fuel units whenever the fuel oil in inventory was less expensive than natural gas.
- In mid-October 2005, Empire began receiving wind energy from the new 150 MW Elk River Wind Farm. This wind-generated energy is displacing higher-cost energy and providing more price stability.
- In the longer-term view, to help reduce natural gas exposure, Empire has signed a letter of intent to be a partner in the proposed Iatan 2 coal unit, issued an RFP (Request for Proposals) for additional baseload capacity in the 2010 timeframe, and begun a Customer Programs Collaborative with other parties which will focus on demand side management as well as other customer programs.

Q. COULD YOU BRIEFLY EXPLAIN EMPIRE'S NATURAL GAS HEDGING PROGRAM?

A. The Company's natural gas hedging program has been very successful in that it allowed Empire to acquire its natural gas at an average cost below what it could have purchased on the spot market. Empire implemented its current Energy Risk Management Policy in 2001, and added personnel who focus specifically on the purchasing and hedging of power and natural gas. The Energy Risk Management Policy sets targets related to the levels of natural gas Empire must have hedged at any point in time. In general, the Risk Management Policy brings more sophistication, consistency and discipline to the fuel procurement process. The risk management policy is attached to my testimony as Schedule TWT-8.

Hedging is a strategy used to offset investment or price risk, specifically to protect against price movements. Empire's Risk Management Policy allows the utilization of traditional physical purchases and the utilization of financial tools such as call options, collars, swaps, and futures contracts to protect against adverse price movements.

Q. WHAT DETERMINES HOW MUCH NATURAL GAS IS HEDGED BY EMPIRE AND WHEN SUCH NATURAL GAS IS HEDGED?

A. The Risk Management Policy targets for hedging natural gas are:

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

Up to 80% of any years expected requirement can be hedged if appropriate, given the associated volume risk.

Q. WAS EMPIRE'S NATURAL GAS HEDGING PROGRAM REVIEWED IN THE

COMPANY'S LAST MISSOURI RATE CASE?

A. Yes. In Case No. ER-2004-0570 Empire's natural gas hedging program and the Risk Management Policy were presented in the direct testimony of Empire witness Brad P. Beecher. Empire's hedging program was cited in the direct testimony of Staff witness John P. Cassidy; Office of Public Counsel witness James Busch; and Explorer Pipeline/Praxair Inc. witness Maurice Brubaker.

On page 10 line 17 of Mr. Cassidy's direct testimony, the question was posed, "Has this [natural gas hedging] program been successful for Empire?" and his answer beginning at line 18 states, "Yes. Through the use of effective hedging strategies, Empire experienced overall natural gas costs of $2.70 / MMBTU during 2002 and $3.02 / MMBTU during 2003 compared to an average NYMEX close price of $3.22 during 2002 and $5.39 during 2003."

IV. PROPOSED LEVEL OF FUEL AND PURCHASED POWER EXPENSE

Q. WHAT LEVEL OF FUEL AND PURCHASED POWER EXPENSE IS EMPIRE PROPOSING IF AN ECR IS NOT IMPLEMENTED IN THIS CASE?

A. As stated earlier, Empire's first preference is an ECR. If an ECR is not used, Empire recommends that a total company on-system fuel and purchased power expense, including demand charges, of $162,888,204 be used to establish its base electric rates. This is based on a projected energy requirement of 5,294,800 MWh. On an average basis, this is $30.76/MWh. A summary of the output from a computer simulation I performed which supports this number is attached as Schedule TWT-9.

Q. HOW WAS THIS LEVEL OF FUEL AND PURCHASED POWER EXPENSE DEVELOPED?

A. This ongoing level of fuel and purchased power expense was developed by running the

hourly production cost computer model known as PROSYM using normalized sales levels, growth and weather, and projected fuel and purchased power costs.

Q. COULD YOU BRIEFLY DESCRIBE THE PROSYM MODEL?

A. The PROSYM model is a chronological computer model that dispatches resources to meet demand requirements on an hourly basis. The model commits resources based on fuel costs, unit start-up costs, and variable operation and maintenance ("O&M") costs after accounting for operational characteristics of a utility system that may override economic dispatch.

The PROSYM simulation engine is described by its developer, Global Energy Decisions (formerly Henwood Energy), as providing the most accurate generation unit commitment logic in the world. PROSYM is used by well over 100 energy organizations around the world in both control room dispatch environments as well as in market analytic groups. Empire has been using chronological production costing models for projection purposes since 1991. Empire's four previous rate case filings in Missouri, and most recent rate case in Kansas, have utilized the PROSYM model.

Q. BRIEFLY DESCRIBE THE REASONS THE PROPOSED LEVEL OF FUEL AND PURCHASE POWER EXPENSE IS HIGHER THAN THE TEST YEAR (TME SEP-05)?

A. The actual total on-system fuel and purchased power expense during the test year (TME Sep-05) was $138,482,415. The adjusted level included in this case is $162,888,204, an increase of $24.4 million or 17.6%. During the test year, Empire was able to lower fuel expense by over $5 million by unwinding a forward natural gas contract it had entered into as a result of its Risk Management Policy. Had this not been done, actual test year expense would have

been over $143 million. This test year also includes fuel and purchased power costs from 2004, which do not reflect the recent surge in natural gas and wholesale market prices. Empire's fuel and purchased power expense for calendar year 2005 was *----------*. Had the unwinding of a forward natural gas contract not occurred, the 2005 expense would have been approximately *---* million. In addition, even though 2005 was a warm year relative to 30 year NOAA normals (National Oceanic and Atmospheric Administration normal temperatures), the adjusted level of fuel and purchased power expense in this case is based on an increased energy requirement due to customer growth. Generating unit availability was also very good in the test year, and a normalized outage schedule has been used in the computer simulation. This change raises the overall energy costs. The other factors taken into consideration that increase the cost of fuel and purchased power are the expected increases coming in fuel and wholesale power costs in 2006. Finally, adjusted fuel and purchased power costs reflect a full year of the new wind purchase. The wind purchase was not in the test year that Empire is using in this filing.

V. UNIT DATA USED IN THE MODEL

Q. PLEASE PROVIDE AN OVERVIEW OF THE DATA USED FOR MODELING EMPIRE'S GENERATING UNITS.

A. Data for Empire's generating units are shown in Schedule TWT-10. These data include each unit's rated capacity, maximum capacity, minimum capacity, heat rate curve information, ramp rate, forced outage rate information, mean repair time, minimum down time, minimum up time, fuel ratio, start-up fuel requirements and associated cost, and variable O&M. The normalized outage schedule is provided in Schedule TWT-11.

Q. ARE THERE ANY SPECIAL CONSIDERATIONS THAT NEED TO BE MADE WHEN MODELING EMPIRE'S GENERATING UNITS?

A. Yes. There are special considerations that need to be made for modeling (1) Asbury Unit 1 and Asbury Unit 2; (2) Riverton Unit 7 and Riverton Unit 8; and (3) the State Line Combined Cycle (SLCC).

Q. BRIEFLY EXPLAIN THE OPERATING CHARACTERISTICS FOR EMPIRE'S ASBURY UNITS THAT NEED SPECIAL CONSIDERATION.

A. The Asbury coal plant is comprised of one boiler and two turbines. The Asbury Unit 1 turbine is rated at 193 MW and Asbury Unit 2 is rated at 17 MW. Asbury Unit 2 cannot operate while Asbury Unit 1 is off line. In addition, Asbury is not able to run on a continuous basis at 210 MW due to operational issues. Specifically, the upper convection passes in the furnace tend to plug with ash. These operational limitations have been taken into consideration in the PROSYM model.

Q. ASBURY UNIT 2 DOES NOT APPEAR TO RUN VERY MANY HOURS IN THE MODEL RUN. COULD YOU PLEASE EXPLAIN WHY?

A. Running Asbury Unit 2 increases the total cycle heat rate of the Asbury plant which decreases the plants efficiency. It also contributes to plugging the furnace, which could lead to more forced outages. As a result Empire generally operates Asbury Unit 2 as a peaking unit. In the computer model run Asbury Unit 2 generates 3,900 MWh. In the test year (TME Sep-05) Asbury Unit 2 generated 2,270 MWh and in 2004 it generated 5,167 MWh.

Q. BRIEFLY EXPLAIN THE OPERATING CHARACTERISTICS FOR EMPIRE'S RIVERTON COAL UNITS THAT NEED SPECIAL CONSIDERATION.

A. Since the last Missouri rate case, the Riverton coal units have recently been burning petroleum coke as a blend fuel. Riverton Unit 7 can operate to approximately 23 MW out of its 38 MW of rated capacity on a blend of coal and petroleum coke. The remainder of the Riverton Unit 7 capacity can only be obtained by over-firing natural gas. Likewise, Riverton Unit 8 can operate to approximately 45 MW out of its 54 MW rated capacity on a blend of coal and petroleum coke with the remainder of the capacity obtained by over-firing natural gas. These operational constraints were modeled in PROSYM.

Q. BRIEFLY EXPLAIN THE OPERATING CHARACTERISTICS FOR EMPIRE'S STATE LINE COMBINED CYCLE THAT NEED SPECIAL CONSIDERATION.

A. Empire owns 300 MW or 60% of the 500-MW combined cycle unit at State Line (SLCC). The combined cycle consists of three electrical generating units—two combustion turbines (CTs) and one steam turbine. The CTs have heat recovery steam generators (HRSGs) on the exhaust end which utilize the high temperature exhaust gases to generate steam for use in the steam turbine. Steam can be used from one or both HRSGs to operate the steam turbine. This allows the combined cycle to be operated in one of two modes. Mode one, which I will call 1x1 mode, consists of one CT operating in conjunction with the steam turbine. Mode two, which I will call 2x1 mode, consists of both CTs operating in conjunction with the steam turbine. For this rate case filing, SLCC was modeled as two separate units. The first unit represents 1x1 mode and the second unit represents the 2x1 mode configuration. For the 2x1 mode unit to run in the model, the 1x1 mode unit must be running. Multi-step heat rates were input for each unit with the overall heat rate of the units comparing favorably to SLCC's average heat rate of approximately 7,500 Btu/kWh.

Q. HOW WAS THE OZARK BEACH HYDRO UNIT MODELED?

A. Ozark Beach was modeled close to the 30-year average of the historical generation of the unit from 1975 to 2004. Hydro generation accounts for less than 1.25 percent of net system input in this normalized model run. Historical data for Ozark Beach are shown as Schedule TWT-12.

VI. FUEL DATA USED IN THE MODEL

Q. BRIEFLY EXPLAIN THE BASIS FOR THE SOLID FUEL COSTS INCLUDED IN THE PRODUCTION COST MODEL.

A. All coal and petroleum coke prices are based on expected 2006 delivered cost. Other costs associated with solid fuel, including handling and unit train costs are not included in the solid fuel costs in the model. These fuel related costs will be discussed in Section VIII, Other Fuel Related Costs. The following solid fuel types were modeled: (1) Asbury western coal; (2) Asbury blend coal; (3) Riverton western coal; (4) Riverton petroleum coke; and (5) Iatan western coal.

Q. WHAT FUEL BLEND RATES ARE USED IN THE MODEL?

A. In the model on an MMBtu basis, Asbury burns 75% western coal and 25% blend coal; Riverton Unit 7 and Riverton Unit 8 burn 71% western coal and 29% petroleum coke; and Iatan burns 100% western coal.

Q. PLEASE EXPLAIN HOW THE NATURAL GAS PRICES WERE DEVELOPED FOR THE MODEL.

A. In the computer model, the gas-fired units can burn natural gas from two sources—from hedged natural gas and from spot market natural gas. The hedged gas represents Empire's current hedged position for 2006 (as of November, 2005). The hedged natural gas is a limited fuel type. Gas-fired generating units can burn this fuel until a specified MMBtu level is

reached. After the limit is reached, the computer models the generating units as if they must operate on spot market gas.

Q. WHAT IS THE 2006 HEDGED NATURAL GAS POSITION THAT WAS USED IN THE MODEL?

A. The following table summarizes the 2006 hedged natural gas position that was used in the model. As of November, 2005, *---------* MMBtu of natural gas are hedged for 2006, at an average price of about *------* $/MMBtu.

2006 Natural Gas Hedged Position
As of November, 2005

------	*-------*	*----------* *----------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
------	*----------*	*-------*
	----------	*-------*

Q. HOW WERE THE SPOT MARKET NATURAL GAS PRICES DEVELOPED FOR THE MODEL RUN?

A. The spot market natural gas prices in the model are based on NYMEX gas futures for 2006 as of November 1, 2005, with a basis adjustment. The data is summarized in the following table.

2006 Estimated Spot Natural Gas Prices
November 1, 2005 NYMEX with Basis Adjustment

Month	NYMEX $/MMBtu	Basis Adj	Spot Gas Modeled $/MMBtu
Jan	12.641	2.449	10.192
Feb	12.611	2.441	10.170
Mar	12.336	2.361	9.975
Apr	10.466	1.821	8.645
May	10.226	1.752	8.474
Jun	10.256	1.760	8.496
Jul	10.304	1.774	8.530
Aug	10.349	1.787	8.562
Sep	10.331	1.782	8.549
Oct	10.376	1.795	8.581
Nov	10.836	1.928	8.908
Dec	11.276	2.055	9.221
	11.001	1.976	9.025

Q. COULD YOU BRIEFLY EXPLAIN HOW THE NATURAL GAS BASIS ADJUSTMENT WAS DETERMINED?

A. NYMEX natural gas prices are based on a standard contract point at the Henry Hub in Louisiana. Since Empire takes gas delivery from the Southern Star Central Gas Pipeline (Southern Star), formerly known as Williams Gas Pipeline, NYMEX prices have been adjusted to reflect the cost from Southern Star. This basis adjustment was calculated with the FUTRAK software tool. FUTRAK is a leading risk and hedge management tool that uses regression analysis based on comparing three years of natural gas settlement data from NYMEX versus Southern Star. From this analysis, the software predicts the difference in Southern Star prices given NYMEX prices. The NYMEX prices adjusted for Southern Star delivery point were used in the model.

Q. WHAT WAS THE WEIGHTED AVERAGE NATURAL GAS PRICE FROM THE MODEL RUN?

A. In the PROSYM run for this case, with the model utilizing the hedged and spot market natural gas fuel types, the weighted average of the natural gas consumed was about 7.18

$/MMBtu.

Q. HOW MUCH NATURAL GAS WAS BURNED IN THE MODEL RUN, AND HOW DOES THIS COMPARE TO HISTORY?

A. In the model run, 8,688,300 MMBtu of natural gas was used. In 2004, a mild weather year, Empire burned 7,778,910 MMBtu. In the filed test year (TME Sep-05), which contains a warm summer, Empire burned *----------* MMBtu. In 2005, Empire burned *----------* MMBtu. The primary reason that the model run reflects a lower natural gas burn than the calendar year 2005 level is due to the new wind purchase.

VII. PURCHASED POWER DATA IN THE MODEL

Q. BRIEFLY OUTLINE THE PURCHASES THAT WERE MODELED.

A. In the model, purchased power can be grouped into three categories: (1) 162 MW Westar – Jeffrey contract purchase; (2) 150 MW Elk River Wind Farm contract purchase; and (3) the wholesale power market also referred to as non-contract purchases.

Q. PLEASE DESCRIBE HOW THE WESTAR - JEFFREY PURCHASE WAS MODELED.

A. The energy and capacity for this 162 MW contract purchase comes from the three different coal units at the Jeffrey Energy Center (54 MW each). The purchase is represented as three units in PROSYM, all with the same energy costs, but each with separate scheduled maintenance outages. The test year average energy price with losses from this purchase was *----* $/MWh. In 2005, the average energy price with losses was *----* $/MWh. In the model, the filed test year (TME Sep-05) average of *----* $/MWh was used. This purchase also has a fixed demand charge which will be discussed in Section VIII, Other Fuel Related Costs.

Q. WAS THE ELK RIVER WIND FARM PURCHASE INCLUDED IN THIS RATE CASE COMPUTER SIMULATION EVEN THOUGH IT WAS NOT OPERATING IN THE TEST YEAR?

A. Yes. This was done to be consistent with using 2006 natural gas prices and other 2006 fuel costs. The wind purchase began full commercial operation on December 15, 2005. In fact, the Company began receiving some energy from this site beginning in October 2005. This purchase is expected to save the Company several million dollars per year in fuel and purchased power costs depending on the prices of and amount of natural gas and purchased power that it offsets.

Q. PLEASE DESCRIBE THE ELK RIVER WIND CONTRACT.

A. Empire has signed a 20-year contract with PPM Energy, a US subsidiary of Scottish Power, to purchase the energy generated at the 150-megawatt Elk River Windfarm located in Butler County, Kansas near the town of Beaumont. Empire recently received Green-e™ certification from the Green-e™ Program of the Center for Resource Solutions. Green-e™ is the leading renewable energy certification and verification program in the United States. This program provides independent, third party certification to ensure certified renewable energy meets strict environmental and consumer protection standards.

Q. PLEASE DESCRIBE HOW THE ELK RIVER WIND FARM PURCHASE WAS MODELED.

A. Based on wind data collected at the wind farm site, this purchase was modeled as a must take purchase with an hourly load profile. In the model run, the annual energy purchased was 565,100 MWh or about a 43% capacity factor. The energy price used in the model is based on the agreed to contract price for 2006.

Q. WHAT PRICE WAS USED FOR THE NON-CONTRACT PURCHASED ENERGY?

A. The non-contract purchase data in the model represents the wholesale power market. The data is comprised of 8,760 hourly prices. The prices were developed by Global Energy Decisions using regional models for the Southwest Power Pool North region. The prices are forecasted for year 2006, utilizing the same spot natural gas forecast with basis adjustments described in this testimony. The average non-contract purchase price in the model run is 60.42 $/MWh. The test year average (TME Sep-05) was *----* $/MWh. In 2005, the average price was *----* $/MWh. Since the IEC period began on March 27, 2005 through December 2005, the average price has been *----* $/MWh.

VIII. OTHER FUEL RELATED COSTS

Q. BRIEFLY OUTLINE THE OTHER FUEL RELATED COSTS THAT ARE INCLUDED IN THE TOTAL COMPANY ON-SYSTEM FUEL AND PURCHASED POWER EXPENSES OF $162,888,204.

A. The other fuel related costs are: (1) Purchased power demand charge; (2) natural gas demand charges; and (3) unit train and undistributed and other costs.

Q. PLEASE DESCRIBE THE PURCHASED POWER DEMAND CHARGE.

A. There is a monthly demand charge for the 162 MW Westar – Jeffrey purchase. By contract this is 8.33 $/Kw/month which is $1,349,460 monthly and $16,193,520 annually. This contract expires May 31, 2010.

Q. PLEASE DESCRIBE THE NATURAL GAS DEMAND CHARGES.

A. The natural gas demand charges are based on three components (1) fixed cost for firm transportation service; (2) commodity charge; and (3) losses.

The contract fixed costs for firm transportation service is *----------* (2006 expected level).

The commodity charge is based on *------* $/MMBtu for a total of *----------*. The losses are based on a natural gas loss rate of *----* for a total of *----------*. These three components result in a total gas demand cost of *----------*.

Q. PLEASE DESCRIBE THE OTHER FUEL RELATED EXPENSES.

A. The Other fuel related expenses include undistributed and other costs, unit train lease, unit train maintenance, unit train depreciation and unit train property taxes. A five-year average (adjusted for nonrecurring expenses and *----------* of approximately $1,454,344 was used in this rate filing. These are shown in Schedule TWT-13.

Q. HAVE YOU DESCRIBED IN GENERAL, THE OPERATIONS OF THE COMPUTER MODEL AND THE DATA INPUTS FOR THE SIMULATION THAT WAS PERFORMED?

A. Yes. And I have reviewed all of the inputs and outputs and compared them to actual situations such that I am confident that the result is accurate and reasonable for the use to which we are putting it in this case.

IX. SUMMARY

Q. PLEASE PROVIDE A SUMMARY OF YOUR DIRECT TESTIMONY.

A. When determining the proper amount of fuel and purchased power expense for Empire, the natural gas price is a significant variable. Because of natural gas price volatility, natural gas prices can not be predicted with any degree of certainty. Non-contract purchase power prices, which have some correlation to natural gas prices, are also very difficult if not

impossible to predict with great accuracy. Fuel and purchased power costs have risen dramatically recently, seriously challenging—if not completely decimating—Empire's ability to recover all of its prudently incurred fuel and purchased power costs. An electric utility needs a realistic, timely and reasonable opportunity to recover prudently incurred fuel and purchased power costs in order to remain financially stable, a topic that will be addressed by other Empire witnesses. For these reasons, Empire has requested the authority to implement an ECR in this case as permitted by section 386.266 RSMo.

If an ECR is not approved, Empire requests that an annual total company fuel and purchased power expense including demand charges of $162,888,204 to be used to establish its base electric rates in this case.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, at this time.

AFFIDAVIT OF TODD W. TARTER

STATE OF MISSOURI)
) ss
COUNTY OF JASPER)

On the 31st day of January, 2006, before me appeared Todd W. Tarter, to me personally known, who, being by me first duly sworn, states that he is the Manager of Strategic Planning of The Empire District Electric Company and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

Todd W. Tarter

Subscribed and sworn to before me this 31st day of January, 2006.

Patricia A Settle
Pat Settle, Notary Public

My commission expires: _____

Patricia A. Settle
Notary Public - Notary Seal
State of Missouri
County of Jasper
Expires February 09, 2008