Exhibit No.:
Issue: *Natural Gas Prices*
Witness: *Kwang Y. Choe*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Surrebuttal Testimony*
Case No.: *ER-2001-299*
Date Testimony Prepared: *May 17, 2001*

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

SURREBUTTAL TESTIMONY

OF

KWANG Y. CHOE

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2001-299

Jefferson City, Missouri
May 2001

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Q. Please state your name and business address.

A. Kwang Y. Choe, P.O. Box 360, Jefferson City, Mo. 65102.

Q. Are you the same Kwang Y. Choe who previously filed direct testimony in this case?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to refute the rebuttal testimony of The Empire District Electric Company (Empire or Company) witness Stan M. Kaplan against my direct testimony regarding the use of the natural gas futures prices to determine the actual future natural gas prices.

Q. On what grounds are you refuting Mr. Kaplan's rebuttal testimony against your direct testimony?

A. First, Mr. Kaplan seems to point out that I state the necessity of the natural gas futures market on one hand, and then deny the usefulness of the market on the other hand (p. 2, ll. 8 -13). However, I am simply saying why the natural gas futures market exists, not necessarily supporting its reliability or necessity, nor arguing that the market is always a correct forecast of the actual future natural gas prices. Mr. Kaplan overlooks the point that I am making when I state that the natural gas futures prices help minimize the uncertainty or risk associated with the price movements. That does not mean that the natural gas futures market always correctly forecasts the actual future natural gas prices.

Second, Mr. Kaplan states that my conclusions are unsupported by quantitative analysis and that my arguments contain citations to academic studies that contradict my own conclusions (p. 2, ll. 16 -18). On the contrary, I provided three schedules showing that there are significant differences between what the natural gas futures market forecasts one year ahead, and the actual natural gas prices one year later. Also, Mr. Kaplan does not mention an important conclusion in a 1998 article from *The Energy Journal* about the volatile nature of the natural gas futures market that I refer to in my direct testimony.[1] The article explains that the movement of the natural gas futures market is unpredictable and is difficult to forecast. Therefore, one can conclude based on the article that it is unreasonable to base a future price movement solely on the futures market.

Third, Mr. Kaplan uses a 1995 article from *The Energy Journal,* which I refer to in my direct testimony, for his own argument[2]. However, his line of reasoning is not persuasive. He states, "It is true that the article focuses on gas futures as a means of predicting spot prices only 30 days ahead, not months ahead." (p. 5, ll. 7 –9). But the problem is that the idea of using the article to support the use of futures market prices to determine natural gas prices for fuel expense <u>for months ahead</u> is far-fetched. Furthermore, the 1995 article from *The Energy Journal* states:

> The price signals generated in the futures market must accurately reflect the future spot price of natural gas if

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[1] Victor Chwee, "Chaos in Natural Gas Futures?," The Energy Journal, Vol. 19, No. 2, 1998, pages 149-164.

[2] W. David Walls, "An Econometric Analysis of the Market of Natural Gas Futures," The Energy Journal, Vol. 16, No. 1, 1995, pages 71-83.

> producers and suppliers are to hedge the risk of future price changes. Of primary concern is the extent to which futures market prices accurately reflect the available information which bears on the future spot price. Futures markets are generally said to be efficient when the futures price today contains all relevant information to forecast tomorrow's spot price.

The author of the article concludes that the natural gas futures market is efficient since the one-month ahead natural gas futures prices are an unbiased predictor of the corresponding spot prices one-month later. But the same is not true of the natural gas futures market, this past year in particular, given the fact there were significant differences between what the natural gas futures market forecast one year ahead and the actual spot prices that prevailed during this past winter. The reason for the deviation, based on the article, is that the one year ahead futures market did not factor in all the relevant information to accurately forecast the actual prices one year later. Therefore, the natural gas futures market is not consistent with the efficient market theory this past winter.

Fourth, Mr. Kaplan states, "Mr. Choe cannot seem to decide whether or not volatility in futures prices is a good thing, or even if it exists." (p. 6, ll. 12 –13). In fact, I never discuss in my direct testimony whether or not volatility in futures prices is a good thing.

Finally, Mr. Kaplan states, in referring to my direct testimony, "Moreover, on page 4 he puts forth the argument that the lack of volatility in gas futures is a problem because futures prices therefore do not track the variation in actual spot prices." (p. 6, ll. 17 – 19). Again, Mr. Kaplan misses the point I make. I am simply indicating that based on the observations, the actual natural gas prices significantly deviate from what the futures market predicted a year earlier.

Q. What is your conclusion regarding Mr. Kaplan's rebuttal testimony?

A. Mr. Kaplan misinterprets the arguments I make in my direct testimony and incorrectly applies the 1995 article from *The Energy Journal* mentioned in my direct testimony to the current uncertain natural gas market condition. He misses the gist of my direct testimony; i.e., the natural gas futures market is not a reliable source from which one can derive the actual future natural gas prices when the market is volatile and uncertain, as dramatically demonstrated by the experience of this past winter.

Q. Do you agree with Mr. Kaplan's discussion on page 3, lines 16-20 of his rebuttal testimony?

A. No. Mr. Kaplan criticizes the use of a one-month time frame to review futures prices versus the ultimate actual prices. Amazingly, this is exactly what Empire is attempting to do with its choice of methodology. On any given date, the Company appears to be saying the best natural gas price to use is the futures strip price. The date that is finally chosen then becomes the critical element on setting the price in customers' rates. Thus, if futures prices increase rapidly this summer, presumably the Company would insist that the forecast has changed and, therefore, customer rates should be dramatically increased. Mr. Kaplan's approach is very arbitrary. If his method had been used a few short months ago, the Company would be trying to set gas prices at the highest levels in 10 years. It is also important to note that Mr. Kaplan has not referenced any scholarly research that would support the use of current futures prices as a reliable forecast of actual prices over a year in the future. The Commission's own experience with astronomic unscheduled purchased gas adjustment increases this past winter should serve to illustrate that the futures market was not predicting $6.00/MMBtu to $10.00/MMBtu gas costs a year prior to when the actual costs were incurred.

Q. Mr. Kaplan states on page 7, lines 13 and 14 of his rebuttal testimony that the real risk is that futures will understate actual gas prices. Do you agree with that?

A. No. Actual prices are certainly just as likely to go down during a period of historically high prices. Current prices this spring, though reduced from the past winter, are still at historical highs. If there were a high degree of probability that futures prices would always understate the eventual actual price, speculators could guarantee their fortunes by buying the futures and seeing the value increase as winter arrived. Obviously, such guarantees do not exist.

Q. Have you updated your Schedule 2 in your direct testimony?

A. Yes, it is attached as Schedule 1 to my surrebuttal testimony.

Q. Is it critical in this case, Case No. ER-2001-299, that the Staff attempt to predict a future gas price for the fuel model?

A. No. The Staff, Company and the Office of the Public Counsel have entered into a Stipulation And Agreement whereby natural gas prices will be trued-up to actual.

Q. Does this conclude your surrebuttal testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of The Empire District Electric Company for a General Rate Increase.	)))	Case No. ER-2001-299

AFFIDAVIT OF KWANG Y. CHOE

STATE OF MISSOURI COUNTY OF COLE	)))	ss.

Kwang Y. Choe, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 5 pages to be presented in the above case; that the answers in the foregoing Surrebuttal 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.

Kwang Y. Choe

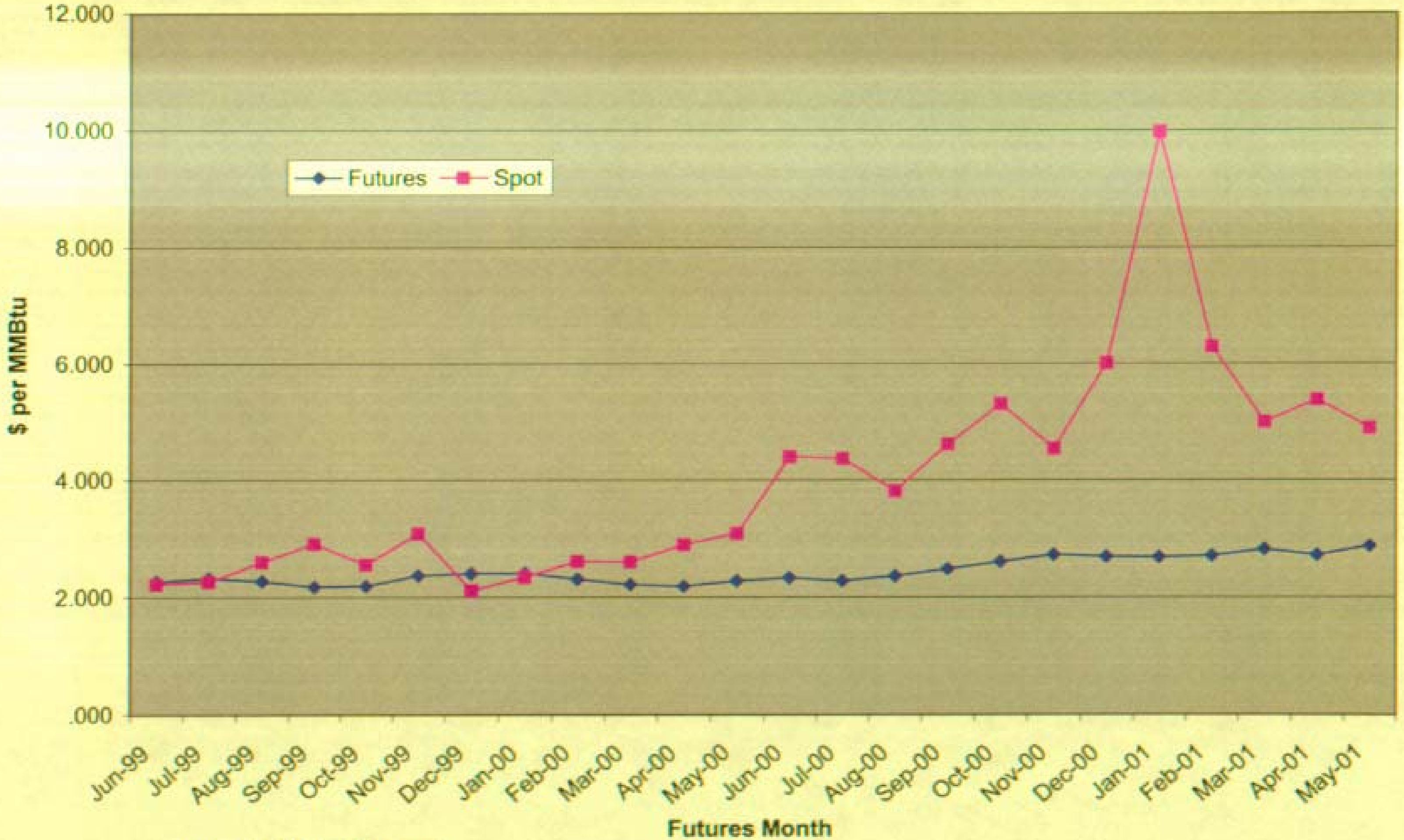
Kwang Y. Choe

Subscribed and sworn to before me this 17th day of May 2001.

D Suzie Mankin

D SUZIE MANKIN
NOTARY PUBLIC STATE OF MISSOURI
COLE COUNTY
MY COMMISSION EXP. JUNE 21,2004

Futures vs. Spot
(Schedule1)



Source: Wall Steet Journal

Schedule 1