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Witness: Cary G. Featherstone
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of The Staff's Change In Position
Regarding Fuel and Purchased
Power Expense
Case No.: ER-2001-299
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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

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**SUPPLEMENTAL TESTIMONY IN SUPPORT OF THE
STAFF'S CHANGE IN POSITION REGARDING
FUEL AND PURCHASED POWER EXPENSE**

OF

CARY G. FEATHERSTONE

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2001-299

Jefferson City, Missouri
June 2001

1 **SUPPLEMENTAL TESTIMONY IN SUPPORT OF THE STAFF'S**
2 **CHANGE OF POSITION REGARDING FUEL AND**
3 **PURCHASED POWER EXPENSE**
4 **CARY G. FEATHERSTONE**
5 **THE EMPIRE DISTRICT ELECTRIC COMPANY**
6 **CASE NO. ER-2001-299**

7 Q. Please state your name and business address.

8 A. Cary G. Featherstone, 3675 Noland Road, Independence, Missouri.

9 Q. By whom are you employed and in what capacity?

10 A. I am a Regulatory Auditor with the Missouri Public Service Commission
11 (Commission).

12 Q. Are you the same Cary G. Featherstone who has previously filed direct
13 and surrebuttal testimony in this proceeding?

14 A. Yes, I am.

15 Q. What is the purpose of this supplemental testimony?

16 A. The purpose of this supplemental testimony is to support Staff's change of
17 position on Fuel and Purchased Power Expense.

18 Q. What is Staff's changed position with regard to fuel and purchased power?

19 A. Staff supports the use of a mechanism that allows higher fuel and
20 purchased power prices to be used in determining interim rates in this case that will be
21 subject to refund with interest after a true-up. The amount of the fuel and purchased
22 power costs that are in interim rates and subject to the true-up process is called the
23 Interim Energy Charge. Specifically, the Interim Energy Charge envisions that base

1 amount of fuel and purchased power costs is established in permanent rates, with an
2 additional amount of fuel and purchased power costs set in interim rates.

3 Q. How did Staff determine fuel and purchased power costs for fuel expenses
4 in prior Empire rate cases?

5 A. Staff traditionally has used actual fuel and purchased power prices to
6 determine the level of fuel expenses included in the development of the revenue
7 requirement. Fuel costs include the cost of coal, oil and natural gas. Staff witness V.
8 William Harris identifies the reasons Staff used actual historical averages for these costs
9 in his direct and surrebuttal testimonies filed in this proceeding. Fuel costs also include
10 the amounts for purchased power. Staff witness Leon Bender determined the amounts of
11 purchased power costs in his direct and surrebuttal testimonies filed in this case.

12 The development of the fuel and purchased power costs typically has relied
13 substantially on the actual historical information on the generating facilities and their
14 operational costs. It is very difficult to predict or forecast future costs, especially for fuel.
15 Because of the volatility in prices, it is even more difficult to predict the prices for fuels
16 burned in the Company's generating facilities and the cost of energy purchased through
17 the interchange markets, either through a capacity agreement or spot purchase.

18 Q. Is the cost of natural gas difficult to forecast?

19 A. Yes. Along with purchased power costs, the volatility in natural gas costs
20 is probably the most difficult to predict with any certainty. Natural gas markets have
21 historically been quite volatile, but in the recent past they have been even more volatile.
22 No one can predict with a reasonable degree of certainty, the natural gas prices that
23 utilities will pay in the future to fuel their power generating facilities.

An example of the volatility of natural gas prices can be seen by comparing the recent natural gas prices identified by Empire witness Stan M. Kaplan. The following table illustrates the wide fluctuations in the natural gas markets:

Date Month/Year	Kaplan's Schedule SMK-3 Empire's Interim Filing	Kaplan's Schedule SMK-4 Empire's Rebuttal Filing	Wall Street Journal May 21
March 2001	\$5.51	----	----
April	\$5.48	----	----
May	\$5.45	\$4.55 (cash price)	\$4.15 (cash price)
June	\$5.46	\$4.48	\$4.113
July	\$5.48	\$4.55	\$4.193
August	\$5.50	\$4.62	\$4.275
September	\$5.47	\$4.66	\$4.305
October	\$5.48	\$4.70	\$4.343
November	\$5.56	\$4.88	\$4.523
December	\$5.66	\$5.05	\$4.703

[Source: Stan M. Kaplan's rebuttal schedule SMK-4 filed on May 3, 2001, in Case No. ER-2001-299; Empire's interim case SMK-3 filed in February 2001 in Case No. ER-2001-452 and May 22, 2001 issue of The Wall Street Journal]

The above amounts represent the natural gas prices only and do not reflect any transportation charges necessary to deliver the fuel to Empire's generating units. The above illustrates the significant increase in this fuel from historical levels of between \$2 and \$3 per MMBtu (delivered costs) and also shows the vast fluctuations in the recent prices. While Empire witness Kaplan predicts higher natural gas prices from the actual historical levels incurred by Empire, the current market prices do show some signs of retreating from the unprecedented levels of the past winter.

1 Q. When Staff filed its direct case in April 2000, did it believe the use of
2 actual fuel and purchased power cost components was reasonable?

3 A. While Staff has used historical averages in the past, because of the
4 extreme volatility in the natural gas markets during the past several months, Staff has
5 been less confident about using historical levels to develop prices for natural gas costs.
6 In the early 1980s, the Commission authorized the use of a forecasted fuel mechanism for
7 several electric utilities that had been exposed to escalating fuel costs. This mechanism
8 was used to address extraordinary circumstances and Staff believed that a similar
9 approach could be used to address the recent unprecedented, volatile and extremely high
10 costs of natural gas.

11 Staff, early in the audit of Empire, believed that it would be advisable to attempt
12 to develop an alternative approach to address the unprecedented and extreme volatility
13 found in the natural gas market. Staff approached Empire to see if it had any interest in
14 developing a mechanism that would be subject to a true-up audit with rates subject to
15 refund with interest. The Company indicated that it would like to examine the possibility
16 of developing such an approach.

17 Q. Why wasn't this approach identified in Staff's direct filing?

18 A. Staff believed that a base rate using historical averages could be used in its
19 initial direct filing but wanted to seek input from the parties aimed at developing a
20 forecasted fuel mechanism. Staff believed that rather than filing its position on
21 forecasted fuel as a direct case, it would be better to have a free and open discussion
22 during the prehearing conference among all of the parties. As a result of such discussion,
23 Staff is now proposing adoption by the Commission of an "Interim Energy Charge"

1 (IEC). The Staff is now proposing a base and forecasted rate for all fuel and purchased
2 power costs. The interim amount would be subject to a true-up audit to reflect actual cost
3 levels, with a refund provision with interest for any over-collection.

4 Q. Please explain why it became necessary to develop the Interim Energy
5 Charge.

6 A. Just as fuel prices were uncertain in the 1980s, they have become even
7 more volatile and less predictable in the recent past. Initially, Staff was interested in
8 developing a forecasted fuel process that identified natural gas as the only fuel source that
9 would form the basis for the forecasted fuel mechanism. It became apparent to the Staff
10 that a broader forecasted fuel mechanism would be necessary because of the
11 interrelationship between gas prices and wholesale electricity prices for purchased power.
12 With the unprecedented and extraordinary high natural gas prices that have been
13 experienced during much of the latter part of year 2000 and the early part of 2001, it
14 became apparent that using a traditional and historical approach to determine fuel prices
15 in this rate case needed modification. A major contributing factor to the decision to
16 depart from exclusive use of historical costs to determine the basis of the fuel prices used
17 for fuel expense was the plant addition of State Line Combined Cycle Unit. The State
18 Line Combined Cycle Unit is expected to be in service in June 2001. This generating
19 facility will burn only natural gas and therefore represents a significant increase to
20 Empire's fuel burn using natural gas. Empire's exposure to the increase in natural gas
21 fuel burn comes at a time that natural gas fuel prices have recently risen substantially.
22 This has placed significantly more risk on Empire than on any of the other electric
23 utilities operating in the state of Missouri.

1 An example of the risk to Empire is a comparison of the fuel burns for natural gas
2 if the Combined Cycle is operating and when the Company operated without that unit.
3 Without the Combined Cycle, Empire's natural gas fuel burn is approximately 21 percent
4 and increases to almost 34 percent when that unit is considered in the fuel mix comparing
5 Empire's three fuel sources — coal, oil and natural gas. When comparing the total fuel
6 burns including purchase power, the generation from natural gas is 9 percent, without the
7 Combined Cycle Unit, increasing to over 21 percent, when that unit becomes operational.
8 Another way of identifying the significance that the Combined Cycle Unit has on the
9 operation of Empire is to compare the total generation from natural gas prior to the
10 operation of that unit with the burns after the unit becomes operational. Empire burned,
11 in the fuel runs developed in this case for natural gas, 6.4 million MMBtus without the
12 Combined Cycle Unit. When the Combined Cycle Unit is operating, that amount
13 increases to 12.3 million MMBtus. This represents almost a doubling of the natural gas
14 Empire will burn in its generating units as a direct result of bringing the Combined Cycle
15 Unit into operation. This is a significant increase in the reliance on natural gas as a fuel
16 source at a time when price for that fuel was at an all time high.

17 Q. Does the natural gas market have an effect on the prices paid for
18 purchased power?

19 A. Yes. Equally important are the effects high natural gas prices have had on
20 the purchased power market. With escalating natural gas prices, the purchased power
21 costs have also increased. There is a relationship between gas costs and purchased power
22 costs. However, if a forecasted fuel process was used that did not include purchased
23 power costs, the utility could potentially benefit from forecasting natural gas only. The

1 forecasted natural gas prices may make the purchased power prices more economical,
2 giving the utility an incentive to purchase power and not generate power by purchasing
3 natural gas. In other words, the utility could "game" or benefit from such a situation.
4 The inclusion of purchased power costs along with the other fuel cost components in the
5 forecasted fuel process will significantly reduce the risk of the process being taken
6 advantage of. It is not the intent that either the utility or its customers unduly benefit
7 from the forecasted fuel process. This fuel and purchased power mechanism cannot be
8 used to allow utilities to reap windfall profits, nor can this process allow customers to
9 unduly benefit from being totally insulated from the rising fuel and purchased power
10 costs.

11 Q. Has the Combined Cycle Unit increased the risk to Empire with respect to
12 its use of natural gas as a fuel source?

13 A. Yes. The increased risk to Empire can be illustrated by the shift in natural
14 gas fuel cost on a pre- and post-Combined Cycle Unit basis. Using the natural gas burn
15 volumes developed by the fuel model, an amount between \$20 and \$30 million was
16 estimated to be the swing from the base and forecast levels. If the estimates for natural
17 gas fuel cost are missed by this amount, the potential for Empire either to receive a
18 windfall or to incur shortfall in costs would be substantial. If Empire over-collected in its
19 fuel cost by this estimate, the customers would be paying significantly greater rates than
20 they should. On the other hand, if the forecast in fuel cost was under-stated, then Empire
21 would under-collect its fuel cost in rates resulting in a significant shortfall. If these
22 shortfalls were on the order of the \$20 to \$30 million, that would wipe out an entire year
23 of net earnings for the Company. In the year 2000, Empire had a net income of

1 \$23.6 million and in 1999 its net income was \$22.2 million. The greater reliance on
2 natural gas with the unprecedented high cost of that fuel places Empire in a difficult
3 situation. It was believed that some type of forecasted mechanism was necessary to
4 protect both the customers and the Company during this extraordinary period of high
5 natural gas fuel cost.

6 Q. How will the Interim Energy Charge work?

7 A. The Interim Energy Charge requires the establishment of a base amount
8 for fuel and purchased power cost that would be set as part of permanent rates. The
9 Interim Energy Charge then identifies an amount of fuel and purchased power cost above
10 the base cost and up to a "forecasted" price that would be subject to refund. This interim
11 charge would be in effect for a period of up to 24 months from the effective date of the
12 rates determined in this case. At the conclusion of this period, a true-up audit would be
13 performed to identify actual cost for fuel and purchased power to determine if Empire
14 over- or under-collected amounts during this period. If the Company over-collected its
15 actual cost for fuel and purchased power, then it would refund a portion or all of the
16 interim amount to its customers with interest. Of course, if Empire under-collected costs
17 associated with fuel and purchased power, the Company would not have to refund any
18 amounts. Staff witness James C. Watkins' supplemental testimony also provides support
19 for how the Interim Energy Charge is intended to work.

20 Q. Is there an advantage to adopting the Interim Energy Charge?

21 A. Yes. The Interim Energy Charge alleviates the need to pinpoint fuel
22 prices used in the development of fuel and purchased power cost. Because any amounts
23 over-collected are subject to refund with interest, the pressure to predict price increases

1 for the fuel components at Empire is significantly reduced. A good deal of the risk of
2 missing the forecast is neither on the Company nor on its customers. Staff believes that it
3 is a distinct advantage to be able to have a mechanism that allows recovery of any over-
4 collection of costs back to Empire's customers. In essence, this approach provides a
5 "safety net" for both Empire and its customers if the cost levels are missed. Staff does
6 not believe this mechanism is appropriate for normal economic circumstances and still
7 supports the use of actual historical information. But when we see dramatic cost
8 volatility, such as that seen recently in the natural gas industry, and the potential impact is
9 so great on a particular Company, this type of approach can be used effectively.

10 Q. Have forecasted fuel mechanisms been used in past cases?

11 A. Yes. Forecasted fuel with a true-up provision was used in several electric
12 cases in the early 1980s. This process was developed as a result of high fuel prices which
13 came about from the two oil embargoes in the 1970s. The forecasted fuel mechanism
14 was developed and used as a means of addressing the rising fuel prices that the electric
15 utility industry was experiencing. There were two significant features that enabled the
16 forecasted fuel mechanism to work: 1) the forecasted fuel prices and resulting fuel burns
17 were developed in the context of a rate case; and 2) there was a true-up audit of the
18 forecasted fuel prices with a refund provision.

19 Several forecasted fuel true-up cases were used in the 1980s. Kansas City Power
20 and Light Company (KCPL) was the first utility to use this process. In each of KCPL's
21 rate cases in 1981, 1982 and 1983, the forecasted fuel process was used. The following
22 table identifies the rate cases where forecasted fuel was used along with the associated
23 forecasted fuel true-up case number:

1			Forecasted Fuel
2		<u>Rate Case</u>	<u>True-up Case</u>
3	Kansas City Power and Light	ER-81-42	----
4		ER-82-66	EO-83-9
5		ER-83-49	EO-84-4

6 In fact, Empire used this process in one of its rate cases in the early 1980s. Several other
7 utilities used this process during the high inflationary period of the early part that decade,
8 as well.

9 Q. How did the forecasted fuel process work?

10 A. A forecasted level of fuel prices for coal and natural gas was determined
11 in the rate case. The period of the forecast fuel prices was six months after the operation
12 of law date of the rate case. When actual fuel prices became known, the Staff did a true-
13 up audit to determine if the utility over- or under-collected in the forecasted fuel
14 mechanism. The forecasted fuel cost was subject to refund with an interest provision for
15 any amounts over-collected by the company. The tariffs filed by the Company in the rate
16 case were identified with a "subject to refund" provision. If the company over-collected
17 any dollar amount of the forecasted fuel price, the customers received a credit to their
18 bills. The company was allowed to keep any amounts including the forecast amount if
19 there was an under-collection of fuel costs. Any amount that the company under-
20 collected over the forecast level was absorbed by it. The forecasted fuel price set a
21 maximum and minimum fuel price in rates. The base or permanent rates contained the
22 base fuel price and the amount that was subject to refund was set at the forecasted fuel
23 price. Fuel prices were set at the base level and the true-up could not go below that level
24 once these fuel prices were set in the rate case Report And Order.

1 Q. Previous forecasted fuel true-ups appear to only have included forecasts
2 for coal and natural gas costs. How will the Interim Energy Charge mechanism be used
3 in this case?

4 A. While forecasted fuel was previously developed to include only coal and
5 natural gas, the Interim Energy Charge relates to all components of fuel cost and
6 purchased power costs. Just as the forecasted fuel mechanism in the 1980s relied on
7 inputs and assumptions developed during the course of the respective rate cases, the fuel
8 components in the interim energy provision have been established during the course of
9 the audit in this case. Even though the Company and Staff have developed two different
10 fuel models with two different sets of assumptions, the resulting overall outputs of the
11 fuel runs were very close to one another. These models formed the basis of the amount
12 determined as the base rate of \$20 per megawatt hour. Staff developed two different fuel
13 models. The first fuel model was a business-as-usual model using the inputs of Empire's
14 historic generation without the State Line Combined Cycle Unit in operation. This model
15 also included the capacity purchased power agreements that were in effect during the
16 year 2000 but will expire May 31, 2001. The second fuel run that Staff developed
17 included the results of State Line Combined Cycle as though it had been operated for a
18 full year. Also, the capacity purchase agreements that will expire May 31, 2001 were not
19 included in this fuel run. Certain assumptions were made with respect to the level of
20 natural gas prices as a model input. This fuel run produced an amount in excess of \$25
21 per megawatt hour and formed the basis of the forecasted level that was used to
22 determine the \$5 per megawatt hour increment or 1/2¢ per kilowatt hour. The forecasted
23 level of \$25 per megawatt hour, represents 2-1/2¢ per kilowatt hour. The base and

1 forecast equate to 2¢ per kilowatt hour and 2-1/2¢ per kilowatt hour with a 1/2¢
2 increment which is the amount that is subject to refund with an interest provision.

3 Q. Were other costs added to the amounts identified above?

4 A. Yes. The \$20 per megawatt hour base amount and \$25 per megawatt hour
5 interim amount were determined utilizing the fuel models developed by Staff witness
6 Bender. In addition, demand charge costs for the capacity agreement with Western
7 Resources, Inc. had to be added to these amounts. Staff had to factor-up the Missouri
8 jurisdictional retail loads used in the fuel model with line losses. Reflecting these
9 components results in the Total Company amounts of \$23.37 per megawatt hour base and
10 \$28.37 per megawatt hour interim rate found in Appendix A attached to Schedule 1, of
11 Staff's Interim Energy Charge proposal which is attached to the supplemental testimony
12 of James C. Watkins. The \$23.37 per megawatt hour base amount represents 2.52¢ per
13 kilowatt-hour on a Missouri retail basis, and the \$28.37 per megawatt hour interim
14 amount represents 3.06¢ per kilowatt-hour on a Missouri retail basis. The results in the
15 Interim Energy Charge provision of .54¢ per kilowatt-hour are identified on Appendix A
16 attached to Schedule 1.

17 Q. How will the true-up process work?

18 A. The forecasted fuel mechanism in this case will have a true-up provision
19 to actual fuel cost incurred by the Company and identified through a true-up process.
20 The true-up process will begin after the expiration of the Interim Energy Charge, which
21 will occur no later than 24 months from the operation of law date in Case No.
22 ER-2001-299. All the components of fuel cost and purchased energy will be examined
23 during this true-up. The price of fuel and the operations of the generating units will be

1 reviewed, along with purchased power cost, to identify an actual level of prudently
2 incurred fuel cost to be used to compare to the forecasted level to determine any over- or
3 under-collection. To the extent that the Company over-collects in any amount above the
4 \$23.37 per megawatt base level, up to the \$28.37 per megawatt hour interim level, those
5 dollars will be returned to Empire's customers with interest. The \$23.37 per megawatt
6 level is set as the base rate and no over-collection will occur below that amount. If the
7 true-up results in an under-collection, then Empire is not obligated to return any amount
8 of money to its customers and Empire cannot collect any of the under-collection.

9 Any amount of money that is over-collected in rates, down to the \$23.37 per
10 megawatt base level, will be returned to Empire's customers with interest. The interest
11 rate will be the prime interest rate identified in the Wall Street Journal as of the last
12 month of the forecasted fuel process.

13 Q. Should the Commission adopt the Staff's Interim Energy Charge
14 proposal?

15 A. Yes. Staff recommends that the Commission adopt the Interim Energy
16 Charge identified in the supplemental testimony filed by James C. Watkins and discussed
17 in this testimony and use this process to determine the fuel and purchase power expense
18 levels in this rate case. This mechanism should be used for the purposes of this case
19 only. Any future use of this type of process will be considered by the Staff on a case-by-
20 case basis.

21 Q. Does this conclude your supplemental testimony?

22 A. Yes it does.

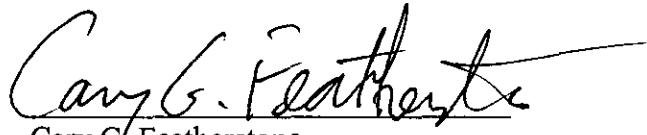
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

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

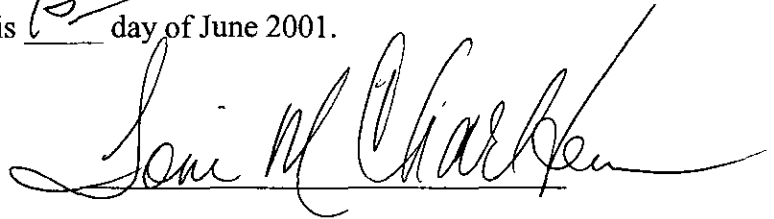
AFFIDAVIT OF CARY G. FEATHERSTONE

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

Cary G. Featherstone, being of lawful age, on his oath states: that he has participated in the preparation of the foregoing Testimony In Support of The Staff's Change In Position Regarding Fuel and Purchased Power Expense in question and answer form, consisting of 13 pages to be presented in the above case; that the answers in the foregoing 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.


Cary G. Featherstone

Subscribed and sworn to before me this 15th day of June 2001.



TONI M. CHARLTON
NOTARY PUBLIC STATE OF MISSOURI
COUNTY OF COLE
My Commission Expires December 28, 2004

