

Exhibit No.
Issue: Plant Operation and Maintenance
Witness: Blake Mertens
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Empire District
Case No. ER-2004-0570
Date Testimony Prepared: Nov 4, 2004

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

FILED

DEC 28 2004

Rebuttal Testimony

Of

**Missouri Public
Service Commission**

Blake A. Mertens

November 2004

Exhibit No. 109
Case No(s) ER-2004-109
Date 12-06-04 Rptr KF

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STATE OF MISSOURI)
) ss
COUNTY OF JASPER)

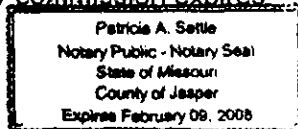
On the 2nd day of November, 2004, before me appeared Blake Mertens, to me personally known, who, being by me first duly sworn, states that he is the Energy Supply Planning Engineer of The Empire District Electric Company and acknowledged that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.


Blake Mertens

Subscribed and sworn to before me this 2nd day of November, 2004


Pat Settle, Notary Public

My commission expires:



BLAKE MERTENS
REBUTTAL TESTIMONY

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OF
BLAKE A. MERTENS
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

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REBUTTAL TESTIMONY
OF
BLAKE A. MERTENS
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

1 **Introduction**

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

3 A. Blake A. Mertens. My business address is 602 Joplin Street, Joplin, Missouri.

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

5 A. The Empire District Electric Company ("Empire" or "Company"), as Planning
6 Engineer - Energy Supply.

7 **Q. ARE YOU THE SAME BLAKE A. MERTENS WHO PREVIOUSLY FILED**
8 **DIRECT TESTIMONY IN THIS CASE ON BEHALF OF THE COMPANY?**

9 A. Yes.

10 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS**
11 **CASE BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION**
12 **("COMMISSION")?**

13 A. In this testimony, I will rebut the testimony of Staff witness Leasha Teel concerning
14 the level of operation and maintenance (O&M) Staff has proposed to include in
15 base rates for the Company's generating units. Specifically, I will address the level
16 of O&M Staff included for the State Line Combined Cycle (SLCC) long-term
17 maintenance agreement, Staff's exclusion of O&M costs for the recently
18 constructed Energy Center Units 3 & 4, and Staff's exclusion of costs for generator
19 inspections at Empire's generating facilities. These three items in total represent

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1 nearly \$1,000,000 in annual O&M expense that Staff has not included in their filed
2 position and effectively not allowed Empire to recover in base rates.

3 **STATE LINE COMBINED CYCLE MAINTENANCE EXPENSE**

4 **Q. PLEASE BRIEFLY DESCRIBE THE MAINTANANCE CONTRACT FOR**
5 **SLCC BETWEEN EMPIRE AND SIEMENS-WESTINGHOUSE.**

6 A. As described in my direct testimony, in June of 2001 Empire entered into a contract
7 with Siemens-Westinghouse for maintenance services regarding the two
8 combustion turbines that are part of SLCC. The purpose of the contract is to
9 provide reliable service operation and to normalize the large costs for maintenance
10 inspections relating to the combustion turbines. Inspection intervals for the
11 combustion turbines vary depending on the operating characteristics of the unit,
12 namely the number of equivalent starts and equivalent base hours the units
13 experience. There are two components to the payment terms for the contract –
14 fixed and variable. The variable payment is based on a number of equivalent starts
15 and equivalent base hours occurring each year per unit. To the extent the actual
16 number of equivalent starts or equivalent base hours experienced by each unit is
17 different than those specified in the contract, the variable payment to the contract is
18 trued-up to recognize actual operating characteristics.

19 **Q. IN ITS FILED POSITION, WHAT DID STAFF USE AS A BASIS FOR THE**
20 **VARIABLE PORTION OF THE CONTRACT?**

21 A. Similar to the methodology used in Empire's filed position, Staff used the operating
22 characteristics determined by its production cost model to determine the level of
23 variable payment. In other words, Staff's model determines a certain number of

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1 operating hours that SLCC will need to operate to meet Empire's on-system energy
2 needs. This number of operating hours is multiplied by a cost per hour to calculate
3 the variable payment.

4 **Q. DOES EMPIRE DISAGREE WITH THE STAFF'S CALCULATED LEVEL**
5 **OF THE VARIABLE PAYMENT?**

6 A. Yes. In this case, Staff made two runs with its production cost model, one to
7 determine the base level of fuel and purchased power costs for Empire's on-system
8 energy and one to determine the ceiling level for an Interim Energy Charge (IEC).
9 Staff used the IEC ceiling run to calculate the variable payment relating to the
10 SLCC maintenance contract. SLCC operates far fewer hours (7550 hours versus
11 9898 hours) in Staff's IEC ceiling run than in the base run.

12 **Q. WHAT WOULD EMPIRE RECOMMEND TO RESOLVE THIS**
13 **DISCREPANCY IN OPERATING HOURS?**

14 A. Empire recommends using the average of the two model runs since the actual
15 operating hours of the unit will likely fall somewhere in between the two extremes.
16 Using the average number of operating hours (8724) for SLCC to calculate the cost
17 of the maintenance contract would raise Staff's filed position approximately
18 \$245,000.

19 **Q. HAS STAFF MADE ANY ADJUSTMENTS TO ITS FILED POSITION TO**
20 **RECOGNIZE THIS AVERAGE LEVEL OF OPERATING HOURS?**

21 A. Yes. It is my understanding that Staff has updated its accounting schedules to
22 recognize the average of the SLCC operating hours calculated by their production

1 cost model runs. Staff's updated amount for the SLCC maintenance contract
2 conforms with Empire's filed position.

3 **ENERGY CENTER UNITS 3 & 4**

4 **Q. DID STAFF MAKE ANY ADJUSTMENTS FOR OPERATION AND**
5 **MAINTENANCE COSTS RELATING TO ENERGY CENTER UNITS 3 &**
6 **4?**

7 A. No.

8 **Q. WHY IS THIS OF CONCERN?**

9 A. Energy Center Units 3 & 4 were placed into commercial operation in April of 2003.
10 Further, Staff witness David Elliott states in his direct testimony for this case, on
11 page 11, lines 1 – 3, that “the EC3 and EC4 Units have met all of the required in-
12 service criteria. Therefore, I recommend that the EC3 and EC4 Units be considered
13 fully operational and used for service.” The concern is that Energy Center Units 3
14 & 4 were under the manufacturer's warranty through May of 2004. This means all
15 inspections and any mechanical/electrical failures relating to these units were at no
16 cost to Empire during the test year used to determine appropriate levels of O&M
17 expense. Empire made an adjustment of \$221,400 in its filed case to account for
18 O&M expenses relating to Energy Center Units 3 & 4.

19 **Q. DID ANY INSPECTIONS OR OTHER MAINTENANCE RELATING TO**
20 **THESE UNITS OCCUR DURING THE WARRANTY PERIOD?**

21 A. Yes. As detailed in my direct testimony, Energy Center Units 3 & 4 require annual
22 inspections. During the week ending April 10, 2004, the units had their first annual
23 inspections. Since the units were still under warranty, the cost of these inspections

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1 was the responsibility of the manufacturer. Additionally, Energy Center Unit 3
2 experienced a bearing failure on engine 3A and the majority of the costs relating to
3 the removal of the power turbine and replacement of the bearing were under
4 warranty.

5 **Q. DOES STAFF RECOGNIZE THE FACT THAT THESE UNITS WILL**
6 **REQUIRE MAINTENANCE IN THE FUTURE, THE COSTS OF WHICH**
7 **WERE NOT REPRESENTED IN THE TEST YEAR?**

8 A. Yes. In response to Empire Data Request 0472, Mr. Steve Rackers of the MPSC
9 Staff states "Staff believes the new Pratt & Whitney FT8 TwinPacs (Energy Center
10 Units 3 & 4) will require maintenance and inspections." When addressing the cost
11 of this future maintenance Mr. Rackers goes on to say: "Staff believes the level of
12 ongoing operation and maintenance (O&M) expense is unknown."

13 **Q. HAS EMPIRE PROVIDED TO STAFF THE ESTIMATED COSTS OF THE**
14 **INSPECTIONS AND MAINTENANCE?**

15 A. Yes. In my direct testimony I provided estimated costs for annual inspections and
16 long-term maintenance relating to Energy Center Units 3 & 4 based on documents
17 and schedules provided by the manufacturer of the units, Pratt & Whitney, which
18 have also been provided to the Staff. The total of the annual inspection costs and
19 long-term maintenance is \$221,400 annually.

20 **Q. DOES EMPIRE STILL RECOMMEND THIS ADJUSTMENT TO THE**
21 **TEST YEAR LEVEL OF O&M EXPENSE?**

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1 A. Yes. I am certain that Staff's inclusion of zero dollars for increased O&M expenses
2 does not represent the proper level of increased expense to ensure reliable operation
3 of Energy Center Units 3 & 4.

4 **GENERATOR INSPECTIONS**

5 **Q. DID STAFF MAKE ANY ADJUSTMENTS FOR OPERATIONS AND**
6 **MAINTENANCE COSTS RELATING TO GENERATOR INSPECTIONS?**

7 A. No.

8 **Q. WHY IS THIS OF CONCERN?**

9 A. As detailed in my direct testimony, with the addition of SLCC and Energy Center
10 Units 3 and 4, Empire now has 10 generators that will nominally be subject to five
11 year inspections. (This excludes the Asbury generators because the cost of their
12 generator inspections is amortized and already accounted for in the test year level of
13 expenses). No generator inspection occurred for these 10 generators during the test
14 year. Adherence to the original equipment manufacturers recommended inspection
15 interval will require Empire to perform at least one generator inspection a year in
16 the future to ensure reliable operation of its generating units.

17 **Q. WHAT AMOUNT DOES EMPIRE RECOMMEND TO INCLUDE IN TEST**
18 **YEAR LEVEL OF EXPENSES TO ACCOUNT FOR THESE GENERATOR**
19 **INSPECTIONS?**

20 A. The cost of a thorough generator inspection is estimated at \$500,000. Empire has
21 provided to Staff the cost of previous inspections that have taken place on Empire
22 generators which present a range of costs that reaches as high as \$679,725 per
23 inspection. Based on the different sizes and models of generators Empire has in its

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1 system, \$500,000 would represent an average level of expense. Certainly Staff's
2 filed position of zero dollars is not an accurate representation of the level of costs
3 Empire will incur relating to generator inspections in future years. In reality it
4 represents a level of expense that would jeopardize reliable operation of Empire's
5 generating units.

6 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

7 **A.** Yes, it does.