

Exhibit No.:  
Issue: Purchase Power Prices  
Witness: David W. Elliott  
Sponsoring Party: MoPSC Staff  
Case Nos.: EM-96-149

**MISSOURI PUBLIC SERVICE COMMISSION**  
**UTILITY OPERATIONS DIVISION**

**UNION ELECTRIC COMPANY**

**CASE NO. EM-96-149**

**FILED**  
**MAY 7 - 1996**  
**MISSOURI**  
**PUBLIC SERVICE COMMISSION**

**REBUTTAL TESTIMONY**

**OF**

**DAVID W. ELLIOTT**

*Jefferson City, Missouri*  
*May, 1996*

**\*\*Denotes Highly Confidential Information\*\***

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1 **REBUTTAL TESTIMONY**

2 **OF**

3 **DAVID W. ELLIOTT**

4 **UNION ELECTRIC COMPANY**

5 **CASE NO. EM-96-149**

6  
7 Q. Please state your name and business address.

8 A. David W. Elliott, P.O. Box 360, Jefferson City, Missouri, 65102.

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

10 A. I am employed by the Missouri Public Service Commission  
11 (Commission) as an engineer in the Energy Department of the Operations Division.

12 Q. Please describe your educational and work background.

13 A. I graduated from Iowa State University with a Bachelor of Science  
14 degree in Mechanical Engineering in May, 1975. I was employed by Iowa-Illinois Gas  
15 and Electric Company (IIGE) as an engineer from July, 1975 to May, 1993. While at  
16 IIGE I worked at Riverside Generating Station first as an assistant to the maintenance  
17 engineer, and then as an engineer responsible for monitoring station performance.  
18 In 1982 I transferred to the Mechanical Design Division of the Engineering Department  
19 where I was an engineer responsible for various projects at IIGE's power plants. In  
20 September, 1993 I began my employment with the Commission.

21 Q. Have you filed testimony previously before this Commission?

22 A. Yes, I have filed testimony in case numbers ER-94-163,  
23 HR-94-177, ER-94-174, and ER-95-279.

Rebuttal Testimony of  
David W. Elliott

1 Q. What are your responsibilities in the Union Electric Company  
2 (UE) merger case, Case No. EM-96-149?

3 A. My responsibilities are to determine proper purchased power  
4 prices and the corresponding quantity of energy to be used by Staff Witness Tom Lin  
5 in his work with the production cost model.

6 Q. What is purchased power price?

7 A. Purchased power price is the cost of energy purchased hourly  
8 from the open market to meet the hourly native load.

9 Q. Please explain the term "native load"?

10 A. In this case, "native load" is defined as the firm load which the  
11 Company is obligated to serve.

12 Q. What purchased power price data did you review to determine  
13 appropriate purchased power prices for this case?

14 A. I reviewed the merger savings work papers submitted by UE in  
15 response to Commission Staff (Staff) Data Request No. 1. I reviewed monthly  
16 historical spot market purchase transactions and capacity purchase transactions  
17 supplied by UE under Commission Rule 4 CSR 240-20.080 for January, 1995 through  
18 December, 1995. I reviewed the budget purchased price data furnished by both UE  
19 and Central Illinois Public Service Company (CIPS) in response to Staff Data Request  
20 No. 2902. I also reviewed the production cost model price data furnished by UE and  
21 CIPS in response to Staff Data Request No. 2901.

Rebuttal Testimony of  
David W. Elliott

1 Q. What kinds of purchased power are there in this case?

2 A. For this case I separated the purchased power into seven different  
3 types: (1) UE Capacity Purchase from Arkansas Power & Light Company (APL);  
4 (2) UE Capacity Purchase from Joppa Energy Center (Joppa); (3) UE Capacity  
5 Purchase from all other sources; (4) UE Spot Market Purchase; (5) CIPS Capacity  
6 Purchase from Joppa; (6) CIPS Spot Market Purchase; (7) and Peak Purchase. See  
7 Schedule 1.

8 Q. What are capacity purchases?

9 A. For purpose of this case, capacity purchases are transactions for  
10 contract energy which occur on a hourly basis, but must be scheduled one or more  
11 days in advance. Capacity contracts require the selling utility to furnish on demand  
12 an amount of energy, not to exceed a fixed amount, at a price based on the cost of  
13 generation.

14 Q. Please explain your method for determining the energy prices for  
15 capacity purchases.

16 A. I reviewed the available capacity purchase data and selected the  
17 1997 budget prices when available to represent the energy prices for 1997. If the  
18 1997 budget prices were not available, I selected the prices in the UE or CIPS  
19 production cost model data for 1996. For the category of other UE capacity prices, I  
20 calculated an average price from the 1995 data supplied by UE under Commission

Rebuttal Testimony of  
David W. Elliott

1 Rule 4 CSR 240-20.080 for January, 1995 through December, 1995. I then escalated  
2 these estimated prices yearly to create prices for the year 1997 through 2006.

3 Q. Did you use escalation factors for capacity purchases to create  
4 prices for the time period of 1997 through 2006?

5 A. Yes.

6 Q. Please explain your method for determining the escalation factors  
7 for capacity purchases.

8 A. For all capacity purchases, I averaged the capacity purchase  
9 price escalation factors for 1998 through 2006 used in UE's response to Staff Data  
10 Request No. 1 and Staff Data Request No. 2901, and UE's filed Integrated Resource  
11 Plan. This resulted in an escalation factor of \*\* \_\_\_\_ \*\*. For the category of UE  
12 capacity purchase from all other sources, I calculated the 1995 through 1997  
13 escalation factor from the difference in the average 1995 capacity price I calculated  
14 from data submitted by UE under Commission rule 4 CSR 240-20.80, and the 1997  
15 capacity price from UE's response to Staff Data Request No. 1. This resulted in an  
16 escalation factor of \*\* \_\_\_\_ \*\*.

17 Q. Please explain your method for determining the corresponding  
18 quantity of energy for the capacity purchases.

19 A. I reviewed the available capacity purchase data and selected the  
20 1997 budget quantity of energy when available. If the 1997 budget data was not  
21 available, I selected the quantity of energy in the production cost model data for 1996.

Rebuttal Testimony of  
David W. Elliott

1           Q.    How were these energy prices and corresponding quantities of  
2 energy for capacity used?

3           A.    The energy prices and the corresponding quantities of energy for  
4 capacity were given to Mr. Tom Lin, a Commission Staff Engineer, to be used in the  
5 Staff's production cost model runs.

6           Q.    What are spot market purchases?

7           A.    For purposes of this case, spot market purchases are transactions  
8 for energy which occur on a continually changing hour-to-hour basis and are  
9 dependent upon a utility's ability to purchase the energy at an economical price  
10 relative to its own production cost, and the energy is available because it is considered  
11 to be excess by the selling utility.

12          Q.    Please explain your method for determining the energy prices for  
13 spot market purchases.

14          A.    I reviewed the available spot market purchase data and selected  
15 the 1997 budget prices when available to represent the energy prices for 1997. If the  
16 1997 budget prices were not available, I selected the prices in the production cost  
17 model data for 1996. For the UE spot market prices, I calculated an average price  
18 from the 1995 data supplied by UE under Commission Rule 4 CSR 240-20.080 for  
19 January, 1995 through December, 1995. I then escalated these estimated prices  
20 yearly to create prices for the year 1997 through 2006.

Rebuttal Testimony of  
David W. Elliott

1 Q. Did you use escalation factors for spot market purchases to create  
2 prices for the time period of 1997 through 2006?

3 A. Yes.

4 Q. Please explain your method for determining the escalation factors  
5 for spot market purchases.

6 A. For the UE spot market prices for 1995 through 2006, I used the  
7 same price escalation factor of \*\* \_\_\_\_\_ \*\* as I calculated for the UE capacity purchase  
8 prices. For the CIPS spot market prices for 1997 through 2006, I calculated an  
9 average escalation factor of \*\* \_\_\_\_ \*\* from the prices in CIPS's response to Staff Data  
10 Request No. 2902.

11 Q. Please explain your method for determining the corresponding  
12 quantity of energy for the spot market purchases.

13 A. I reviewed the available spot market purchase data and selected  
14 the 1997 budget quantity of energy when available. If the 1997 budget data was not  
15 available, I selected the quantity of energy in the production cost model data for 1996.

16 Q. How were the energy prices and the corresponding quantities of  
17 energy for the spot market used?

18 A. The energy prices and the corresponding quantities of energy  
19 were given to Mr. Lin to be used as input for the Staff's production cost model runs.

20 Q. Please explain your method for determining the energy prices for  
21 peak purchases.

Rebuttal Testimony of  
David W. Elliott

1           A.     I used the price of peak energy historically used by the Staff for  
2 production cost model runs. I then escalated this price yearly to create prices for the  
3 years 1997 through 2006.

4           Q.     Did you use an escalation factor for peak energy purchases to  
5 create prices for the time period of 1997 through 2006?

6           A.     Yes.

7           Q.     Please explain your method for determining the escalation factor  
8 for peak purchases.

9           A.     I used the same price escalation factor of \*\*\_\_\_\_\_\*\* for 1997  
10 through 2006 as calculated for the UE capacity purchase prices.

11          Q.     Please explain your method for determining the corresponding  
12 quantity of energy for the peak purchases.

13          A.     I chose a quantity of energy approximately equal to the average  
14 of UE's three largest coal fired units to reflect the possibility of a forced outage on one  
15 of these plants.

16          Q.     How were the energy price and the corresponding quantity of  
17 energy for the peak purchases used?

18          A.     The energy prices and the corresponding quantity of energy were  
19 given to Mr. Lin to be used as input for the Staff's production cost model runs.

20          Q.     Could you summarize what purchase power price data was used  
21 to determine the estimated energy prices and the corresponding quantity of energy?



Rebuttal Testimony of  
David W. Elliott

1                   A.     Yes. These are detailed on my attached Schedule 1.

2                   Q.     Would you please summarize your testimony?

3                   A.     Yes. For this case I determined the purchased power prices and  
4     the corresponding quantities of energy to be used in the production cost model. I  
5     developed prices and corresponding quantities of energy for the capacity purchases,  
6     spot market purchases, and the peak purchases.

7                   Q.     Does this conclude your prepared rebuttal testimony?

8                   A.     Yes, it does.

Union Electric Company  
Case No. EM-96-149  
Energy Prices developed for Staff's Production Cost Model Runs

1. Union Electric Capacity Purchase from Arkansas Power & Light Company:  
Source for 1997 energy prices and quantity of energy: Union Electric's Response to Staff Data Request No. 2902.  
Yearly escalation multiplier for 1997 through 2006: \*\* \_\_\_\_\_ \*\*.
  
2. Union Electric Capacity Purchase from Joppa Energy Center:  
Source for 1997 energy prices and quantity of energy: Union Electric's Response to Staff Data Request No. 1.  
Yearly escalation multiplier for 1997 through 2006: \*\* \_\_\_\_\_ \*\*.
  
3. Union Electric Capacity Purchase from all other sources:  
Source for 1995 energy prices: Union Electric's Monthly Interchange Report submitted under Commission rule 4 CSR 240-20.80 for January 1995 through December 1995.  
Yearly escalation multiplier for 1995 through 1997: \*\* \_\_\_\_\_ \*\*.  
Yearly escalation multiplier for 1997 through 2006: \*\* \_\_\_\_\_ \*\*.  
Source for quantity of energy: Union Electric's Response to Staff Data Request No. 2902.
  
4. Union Electric Spot Market Purchases:  
Source for 1995 energy prices: Union Electric's Monthly Interchange Report submitted under Commission rule 4 CSR 240-20.80 for January 1995 through December 1995.  
Yearly escalation multiplier for 1995 through 2006: \*\* \_\_\_\_\_ \*\*.  
Source for quantity of energy: Union Electric's Response to Staff Data Request No. 2901.
  
5. Central Illinois Public Service Company (CIPS) Capacity Purchase from Joppa Energy Center:  
Source for 1997 energy prices: CIPS's Response to Staff Data Request No. 2901.  
Yearly escalation multiplier for 1997 through 2006: \*\* \_\_\_\_\_ \*\*.  
Source for quantity of energy: CIPS's Response to Staff Data Request No. 2902.
  
6. Central Illinois Public Service Company (CIPS) Spot Market Purchases:  
Source for 1997 energy prices and quantity of energy: CIPS's Response to Staff Data Request No. 2902.  
Yearly escalation multiplier for 1997 through 2006: \*\* \_\_\_\_\_ \*\*.
  
7. UE and CIPS Peak Energy Purchases:  
Source for 1997 energy prices: Staff prices historically used for peak energy.  
Yearly escalation multiplier for 1997 through 2006: \*\* \_\_\_\_\_ \*\*.  
Source for quantity of energy: Average of the capacity of UE's three largest coal fired units rounded to the nearest hundred.

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**


In the matter of the Application of Union Electric )  
Company for an Order Authorizing (1) Certain Merger )  
Transactions Involving Union Electric Company; )  
(2) the Transfer of Certain Assets, Real Estate, )  
Leased Property, Easements and Contractual )  
Agreements to Central Illinois Public Service )  
Company; and (3) in Connection Therewith, Certain )  
Other Related Transactions. )

**Case No. EM-96-149**

**AFFIDAVIT OF DAVID W. ELLIOTT**

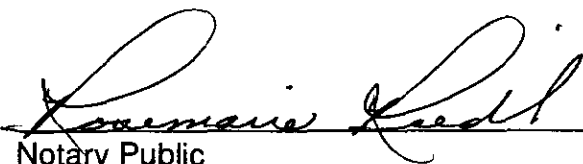
STATE OF MISSOURI    )  
                                  )        ss.  
COUNTY OF COLE     )

David W. Elliott, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form consisting of 8 pages and 1 schedule to be presented in the above case; that the answers in the foregoing Rebuttal 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.

  
\_\_\_\_\_  
DAVID W. ELLIOTT

Subscribed and sworn to before me this 6th day of May, 1996.



  
\_\_\_\_\_  
Notary Public  
ROSEMARIE RIEDL  
NOTARY PUBLIC STATE OF MISSOURI  
COLE COUNTY  
MY COMMISSION EXPIRES JUNE 1, 1997

My Commission Expires: \_\_\_\_\_

