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Missouri Public
Service Commission

Exhibit No.:

Issue: Hourly Loads

Witness: Lena M. Mantle

Sponsoring Party: MO PSC Staff

Type of Exhibit: Supplemental Direct
Testimony

Case No.: ER-2006-0315

Date Testimony Prepared: July 17, 2006

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

SUPPLEMENTAL DIRECT TESTIMONY

OF

LENA M. MANTLE

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2006-0315

**Jefferson City, Missouri
July 2006**

STAFF Exhibit No. 66
Case No(s) ER-2005-0315
Date 9-05-06 Rpt PF

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of The Empire District Company of)
Joplin, Missouri for authority to file tariffs)
increasing rates for electric service provided to)
customers in Missouri service area of the Company.)

Case No. ER-2006-0315

AFFIDAVIT OF LENA M. MANTLE

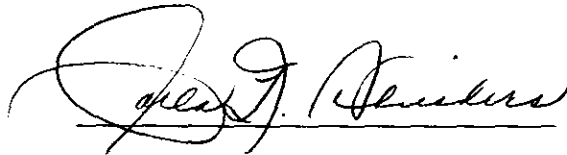
STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

Lena M. Mantle, of lawful age, on her oath states: that she has participated in the preparation of the foregoing Supplemental Direct Testimony in question and answer form, consisting of 3 pages to be presented in the above case; that the answers in the foregoing Supplemental Direct Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of her knowledge and belief.



Lena M. Mantle

Subscribed and sworn to before me this 14th day of July ~~June~~ 2006.



CARLA K. SCHNIEDERS
Notary Public - Notary Seal
State of Missouri
County of Cole
My Commission Exp. 06/07/2008

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SUPPLEMENTAL DIRECT TESTIMONY
OF
LENA M. MANTLE
THE EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. ER-2006-0315

Q. Please state your name and business address.

A. My name is Lena M. Mantle and my business address is Missouri Public Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

Q. What is your present position with the Missouri Public Service Commission (Commission)?

A. I am the Manager of the Energy Department, Utility Operations Division.

Q. Would you please review your educational background and work experience?

A. I received a Bachelor of Science Degree in Industrial Engineering from the University of Missouri, at Columbia, in May 1983. I joined the Commission Staff (Staff) in August 1983. I became the Supervisor of the Engineering Section of the Energy Department in August, 2001. In July 2005, I was named the Manager of the Energy Department. I am a registered Professional Engineer in the State of Missouri.

My work here at the Commission has included the review of resource plans of investor owned electric utilities since 1984. I was actively involved in the writing of the Commission's Chapter 22, Electric Resource Planning rules (Chapter 22). Since the Commission issued a waiver to the electric utilities from filing under Chapter 22 in 1999, I have been present at all but one of the semi-annual resource plan update meetings of the electric utilities. Since that waiver has ended, I have been in charge of the Staff's review of

Supplemental Direct Testimony
Of Lena M. Mantle

1 the resource plan filing of Union Electric Company and Kansas City Power & Light
2 Company.

3 In addition to my experience regarding resource planning, I have been involved in the
4 normalization of the electric utilities' net system input in rate and rate design cases before
5 this Commission since 1989.

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

7 A. Yes, I have. Please see Schedule 1 attached to this testimony for a list of cases in
8 which I have previously filed testimony.

9 Q. What is the purpose of your testimony?

10 A. In the second question in the Commission's Order Requiring Additional Information
11 Or Supplemental Filing in this case, Case No. ER-2006-0315, which became effective on
12 June 30, 2006, the Commission asked the parties in this case to estimate how much natural
13 gas and purchased power The Empire District Electric Company (Empire) will use on an
14 annual basis over the next three years. The purpose of my testimony is to explain to the
15 Commission what historical usage pattern was used and how the projected megawatt-hour
16 (MWh) usage was calculated for input into the Staff's production cost simulation model. A
17 description of Staff's production cost simulation model used to estimate the natural gas used
18 and the amount of purchased power can be found in the supplemental direct testimony of
19 Staff witness David W. Elliott.

20 Q. What historical usage pattern did the Staff decide to use?

21 A. For the analysis requested by the Commission, the Staff used the same hourly usage
22 pattern that it used in its direct case: the test year usage pattern normalized for weather.
23 Using a test year usage pattern retains the hourly fluctuations that impact the dispatch order.

Supplemental Direct Testimony
Of Lena M. Mantle

1 The method used by the Staff to calculate normal weather also retains temperature extremes
2 that are also important in simulating production costs. In direct testimony filed on June 23,
3 2006, Staff Witness Shawn E. Lange gives a more detailed description of how the test year
4 hourly loads are derived and how the Staff calculates normal weather.

5 Q. How did the Staff project the MWh usage for three years?

6 A. The Staff used the net system input growth rate percent as estimated by Empire for its
7 five year budget.

8 Q. Why did the Staff use Empire's estimated growth rate?

9 A. The Staff does not have the data necessary to do a rigorous estimate of Empire's
10 growth rate. However, I looked at the growth rate as calculated by Empire and compared it
11 to the estimated energy growth rates of the three other Missouri investor-owned electric
12 utilities as given to the Staff in resource planning meetings. Empire's estimated energy
13 growth rate is within the range of the energy growth rates of the other utilities.

14 Q. How was Empire's annual growth rate applied?

15 A. For the Staff's direct case, the hourly net system input was normalized for weather
16 and then reconciled to the weather normalized, annualized class usage. The normalized
17 hourly net system input also includes MWh for customer growth through the update period.
18 In order to develop normalized hourly net system input for each of the next three years,
19 Empire's annual growth rate was applied to each of the hours in the Staff direct case net
20 system input for three years. These hourly loads were then used in the production cost
21 model.

22 Q. Does this conclude your supplemental direct testimony?

23 A. Yes, it does.

PREVIOUS TESTIMONY OF
LENA M. MANTLE

<u>CASE NUMBER</u>	<u>TYPE OF FILING</u>	<u>ISSUE</u>
ER-84-105	Direct	Demand-Side Update
ER-85-128, et. al	Direct	Demand-Side Update
EO-90-101	Direct, Rebuttal & Surrebuttal	Weather Normalization of Sales; Normalization of Net System
ER-90-138	Direct	Normalization of Net System
EO-90-251	Rebuttal	Promotional Practice Variance
EO-91-74, et. al.	Direct	Weather Normalization of Class Sales; Normalization of Net System
ER-93-37	Direct	Weather Normalization of Class Sales; Normalization of Net System
ER-94-163	Direct	Normalization of Net System
ER-94-174	Direct	Weather Normalization of Class Sales; Normalization of Net System
EO-94-199	Direct	Normalization of Net System
ET-95-209	Rebuttal & Surrebuttal	New Construction Pilot
ER-95-279	Direct	Normalization of Net System
ER-97-81	Direct	Weather Normalization of Class Sales; Normalization of Net System; TES Tariff
EO-97-144	Direct	Weather Normalization of Class Sales; Normalization of Net System;
ER-97-394, et. al.	Direct, Rebuttal & Surrebuttal	Weather Normalization of Class Sales; Normalization of Net System; Energy Audit Tariff

EM-97-575	Direct	Normalization of Net System
EM-2000-292	Direct	Normalization of Net System; Load Research;
ER-2001-299	Direct	Weather Normalization of Class Sales; Normalization of Net System;
EM-2000-369	Direct	Load Research
ER-2001-672	Direct & Rebuttal	Weather Normalization of Class Sales; Normalization of Net System;
ER-2002-1	Direct & Rebuttal	Weather Normalization of Class Sales; Normalization of Net System;
ER-2002-424	Direct	Derivation of Normal Weather
EF-2003-465	Rebuttal	Resource Planning
ER-2004-0570	Direct	Reliability Indices
ER-2004-0570	Rebuttal & Surrebuttal	Energy Efficiency Programs and Wind Research Program
EO-2005-0263	Oral	DSM Programs and Integrated Resource Planning
EO-2005-0329	Oral	DSM Programs and Integrated Resource Planning
ER-2005-0436	Direct	Resource Planning
ER-2005-0436	Rebuttal	Low-Income Weatherization and Energy Efficiency Programs
ER-2005-0436	Surrebuttal	Low-Income Weatherization and Energy Efficiency Programs; Resource Planning
EA-2006-0309	Rebuttal & Surrebuttal	Resource Planning