

Exhibit No.:

Issues: Plant in Service

Witness: Michael E. Taylor

Sponsoring Party: MO PSC Staff

Type of Exhibit: Surrebuttal Testimony

Case No.: ER-2008-0093

Date Testimony Prepared: April 25, 2008

**MISSOURI PUBLIC SERVICE COMMISSION**

**UTILITY OPERATIONS DIVISION**

**SURREBUTTAL TESTIMONY**

**OF**

**MICHAEL E. TAYLOR**

**THE EMPIRE DISTRICT ELECTRIC COMPANY**

**CASE NO. ER-2008-0093**

**Jefferson City, Missouri**

**April 2008**

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

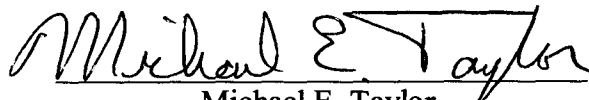
In the matter of The Empire District )  
Electric Company of Joplin, Missouri's )  
application for authority to file tariffs )  
increasing rates for electric service )  
provided to customers in the Missouri )  
service area of the Company )

Case No. ER-2008-0093

**AFFIDAVIT OF MICHAEL E. TAYLOR**

STATE OF MISSOURI     )  
                                  ) ss  
COUNTY OF COLE     )

Michael E. Taylor, of lawful age, on his oath states: that he has participated in the preparation of the following Surrebuttal Testimony in question and answer form, consisting of 4 pages of Surrebuttal Testimony to be presented in the above case, that the answers in the following Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

  
Michael E. Taylor

Subscribed and sworn to before me this 24<sup>th</sup> day of April, 2008.



SUSAN L. SUNDERMEYER  
My Commission Expires  
September 21, 2010  
Callaway County  
Commission #06942086

  
Notary Public

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**SURREBUTTAL TESTIMONY**

**OF**

**MICHAEL E. TAYLOR**

**THE EMPIRE DISTRICT ELECTRIC COMPANY**

**CASE NO. ER-2008-0093**

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Q. Please state your name and business address.

A. Michael E. Taylor, P.O. Box 360, Jefferson City, Missouri, 65102.

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

A. I am employed by the Missouri Public Service Commission (Commission) as a Utility Engineering Specialist III in the Energy Department of the Utility Operations Division.

Q. Are you the same Michael E. Taylor who contributed to Staff's Cost Of Service Report filed in this case and who filed rebuttal testimony in this case?

A. Yes, I am.

**IN-SERVICE CRITERIA FOR ASBURY SCR**

Q. What is the purpose of your surrebuttal testimony?

A. My surrebuttal testimony is responding to the rebuttal testimony of The Empire District Electric Company (Empire) witness Blake A. Mertens regarding in-service criteria established for the Selective Catalytic Reduction unit (SCR) installed at Empire's Asbury Plant.

Q. What are in-service criteria?

A. In-service criteria are a set of operational requirements or operational tests used to determine whether a specific new unit or addition is "fully operational and used for

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Michael E. Taylor

1 service" as required by Section 393.135, RSMo. 2000, a statute that was adopted by Initiative,  
2 Proposition No. 1, on November 2, 1976. Section 393.135, RSMo. 2000, provides as follows:

3 Any charge made or demanded by an electrical corporation for  
4 service, or in connection therewith, which is based on the costs of  
5 construction in progress upon any existing or new facility of the  
6 electrical corporation, or any other cost associated with owning,  
7 operating, maintaining, or financing any property before it is fully  
8 operational and used for service, is unjust and unreasonable, and is  
9 prohibited. (Emphasis added)

10  
11 Q. How were the in-service test criteria developed for the Asbury Plant SCR for  
12 this case?

13 A. Staff has developed in-service criteria for various generating units and  
14 associated equipment for previous evaluations. These previous evaluations included the  
15 addition of an SCR at another utility's generating plant. The Staff proposed criteria to  
16 Empire. Empire adopted the Staff's criteria as explained by Mr. Mertens in his direct  
17 testimony.

18 Q. Why are in-service criteria important?

19 A. The criteria provide a defined basis for a unit to be determined to be "fully  
20 operational and used for service" and can be considered for ratemaking treatment.

21 Q. Does Mr. Mertens' rebuttal testimony conflict with the in-service criteria that  
22 Empire agreed to use in this case?

23 A. No. On page 5, lines 9 through 13, Mr. Mertens quotes a portion of one of the  
24 six (6) criteria. He states: "Of particular interest is the statement in Criterion #3 'The  
25 operational contract guarantees that have been satisfied by the time of Staff's direct, rebuttal,  
26 or surrebuttal testimony filing in the current rate case will be evaluated by Staff.' Staff had

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1 not filed any rebuttal or surrebuttal testimony in this case at the time the in-service criteria  
2 were met.”

3 Q. Is this an accurate quote?

4 A. Yes. However, it is a quote taken out of context. It is informative to see the  
5 entire text of Criterion #3. (The text of the entire set of Asbury Plant SCR in-service criteria  
6 can be found in Schedule 1 to this testimony.) Criterion #3, in its entirety is: “Equipment  
7 successfully meets operational contract guarantees. The operational contract guarantees that  
8 have been satisfied by the time of Staff’s direct, rebuttal, or surrebuttal testimony filing in the  
9 current rate case will be evaluated by the Staff. Note: This applies to operational contract  
10 guarantees that are not addressed in criteria 4, 5, and 6 (as listed below).”

11 Q. Please explain why review of the entire criterion is important when considering  
12 Mr. Mertens’ partial quote from the criterion in his rebuttal testimony.

13 A. The excerpt that was included in Mr. Mertens’ testimony was specifically  
14 included to allow Staff to address operational contract guarantees that were satisfied during  
15 the period of time in the procedural schedule when testimony is being filed by various parties.  
16 The excerpt also acknowledges that some operational contract guarantees for SCR  
17 installations may not be satisfied until an extended period of time (several years) after  
18 installation of the equipment. This language was not intended to allow the in-service criteria  
19 to override the Commission’s orders establishing the approved Test Year, Update Period, or  
20 True-Up Period for a case. Criteria 3, 4, 5, and 6 were not met for the Asbury Plant SCR at  
21 December 31, 2007, the end of the test year update period for this case. The surrebuttal  
22 testimony of Staff witness Mark L. Oligschlaeger further discusses this point.

23 Q. Has Staff completed its review of in-service criteria for the Asbury Plant SCR?

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Michael E. Taylor

1           A.     Yes. Staff's review is complete and documented in Schedule 1 attached to this  
2 testimony.

3           Q.     What is your conclusion regarding in-service criteria for the Asbury Plant  
4 SCR?

5           A.     Based on my review and analysis of the data and inspection of the facility, the  
6 SCR has met the technical requirements for the in-service criteria.

7           Q.     Does having met the in-service technical criteria mean that the Asbury SCR  
8 should be declared in service for rate making purposes?

9           A.     No, not at this time. Since the in-service criteria were not satisfied until  
10 February 2008 and the update period for this case ended on December 31, 2007, Staff does  
11 not recommend that the SCR be included in rate base in this case. Again, please refer to Staff  
12 Witness Oligschlaeger's surrebuttal testimony for additional information on this issue.

13          Q.     Does this conclude your surrebuttal testimony?

14          A.     Yes, it does.

## **In-Service Criteria for NO<sub>x</sub> Control Equipment**

### **Asbury Plant**

1. All major construction work is complete.

*Based on personal observation of the facility on February 8, 2007, October 16, 2007, and April 8, 2008; all major construction is completed.*

2. All preoperational tests have been successfully completed.

*Based on review of System Turnover Forms for the Selective Catalytic Reduction (SCR) equipment; all preoperational testing has been successfully completed.*

3. Equipment successfully meets operational contract guarantees. The operational contract guarantees that have been satisfied by the time of Staff's direct, rebuttal, or surrebuttal testimony filing in the current rate case will be evaluated by the Staff. Note: This applies to operational contract guarantees that are not addressed in criteria 4, 5, and 6 (as listed below).

*Based on review of the SCR contract for Performance Data and Guarantees and the Summary of Performance Test Results, the SCR meets operational contract guarantees for all items with the exception of the guarantee associated with catalyst life. The catalyst life guarantee is based on extended operating hours, typically months or year of operations. In accordance with this in-service criterion, the catalyst life guarantee item was not completed by the testimony filing date for the current rate case and is not applicable for this review.*

4. The equipment shall be operational and demonstrate its ability to operate at a NO<sub>x</sub> reduction efficiency equal to or greater than 83.7% over a continuous four (4) hour period while the generating unit is operating at or above 95% of its design load.

*Based on review of computer trend and tabular data for the time period of 8:00 a.m. through 12:00 noon on February 24, 2008, the SCR maintained a NO<sub>x</sub> reduction efficiency [during the four (4) hour test period] equal to or greater than*

*90% (greater than 83.7%). The generating unit operated at 205 MW (gross) during the test period. Based on the 210 MW (gross) rating for the unit, this is greater than 95% of its design load.*

5. The equipment shall also demonstrate its ability to operate at a NO<sub>x</sub> reduction efficiency equal to or greater than 79.2% over a continuous 120-hour period while the generating unit is operating at or above 80% of its design load.

*Based on review of computer trend and tabular data for the time period of 7:00 a.m. on February 19, 2008 through 7:00 a.m. on February 24, 2008, the SCR maintained a NO<sub>x</sub> reduction efficiency [during the one hundred twenty (120) hour test period] equal to or greater than 85% (greater than 79.2%). The generating unit operated at greater than 175 MW (gross) during the test period. Based on the 210 MW (gross) rating for the unit, this is greater than 80% of its design load.*

6. Continuous emission monitoring systems (CEMS) are operational and demonstrate the capability of monitoring the NO<sub>x</sub> emissions to satisfy the parameters in items (4) and (5) above.

*Based on review of the operational data for the SCR testing conducted in February 2008, "Summary of Tuning Logs" for the emissions monitoring system, and personal observation on April 8, 2008, the CEMS were operational and capable of monitoring the parameters necessary for the testing.*