Exhibit No.:
Issues: IN THE MATTER OF THE JOINT APPLICATION OF UTILICORP UNITED INC. AND THE EMPIRE DISTRICT ELECTRIC COMPANY FOR AUTHORITY TO MERGE THE EMPIRE DISTRICT ELECTRIC COMPANY WITH AND INTO UTILICORP UNITED INC.
Witness: David W. Elliott
Sponsoring Party: MoPSC Staff
Type of Exhibit: Replacement Pages for Rebuttal Testimony
Case No.: EM-2000-369

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Missouri Public Service Commission

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

REPLACEMENT PAGES

FOR

REBUTTAL TESTIMONY

OF

DAVID W. ELLIOTT

CASE NO. EM-2000-369

Jefferson City, Missouri
September 2000

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

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A. Because of the low heat rate of the combined cycle unit at State Line, this unit may operate or be dispatched more like a base loaded unit than a peaking unit. Therefore, I used the hours from the Iatan and Jeffery Energy Center Unit No. 2 criteria.

Q. Do you believe this is an excessive amount of time to require for the test?

A. No. I reviewed the 1999 monthly operational data of State Line Unit No. 2 furnished by Empire under 4 CSR 240-20.080. State Line Unit No. 2 will become part of the new SLCC Unit. During the months of May 1999 through September 1999, the unit produced kWs every hour for a period of at least **___** consecutive hours in each of the five months, and the five month average was **___** consecutive hours. In August of 1999, the unit produced kWs for **___**consecutive hours. I do not believe that testing the new SLCC Unit for less than **____** of the **___** consecutive hours in August 1999 that State Line Unit No. 2 produced kWs is excessive.

Q. Would it make any difference if State Line Unit No. 2 produced kWs for those **___** hours in August 1999 due to a unique set of circumstances?

A. No. No one can predict the future operating conditions of a unit or how many consecutive hours a unit may run during its lifetime. With capacity tight in the electrical industry today, the new SLCC Unit will likely be called upon to run more than just four hours at a time. I have used ~~168~~ 120 hours as a minimum requirement for the in-service criteria because although it is not known exactly how the new SLCC Unit

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may be utilized in the future, ~~168~~ 120 hours of continuous operation is not requesting any extraordinary performance for that unit.

Q. Why have you recommended a capacity factor of **_____** to be used in your proposed in-service criteria?

A. In response to Staff Data Request No. 4129, Empire referenced a document prepared by Empire's strategic planing group which was titled "State Line Combined Cycle". In this document's attachment 2.2, there is a graph indicating the predicted capacity factor of the new combine cycle unit in 2002 would be **_____ _____**. I have used a capacity factor of **_____** for 120 hours, which is equivalent to a capacity factor of **_____** for 168 hours. The total megawatt hours generated are the same, but requires less hours of operation.

Q. How does your proposed criteria compare to the Staff criteria proposed for other units?

A. As stated earlier, the proposed criteria for the new SLCC Unit has features similar to those for the units at State Line, Iatan, and Jeffrey Energy Center. A more detailed comparison of the new SLCC Unit criteria to the other units is presented in Schedule 3.

Q. What happens if the unit does not meet all of the in-service criteria?

A. I have included in my recommended criteria a statement that the Staff may review the operational data of the unit to date and may waive application of any criteria for which failure to meet the criteria is not deemed to be material to the fully

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operational and used for service status of the new SLCC Unit. If the Staff determines after this review that the unit is still not fully operational and used for service, the revenue impact of that finding will be determined in the next rate case, in which the in-service status is at issue.

Q. Please summarize the recommendations of your testimony.

A. I recommend that the Commission should not set the in-service criteria for SLCC Unit as part of this merger case. If the Commission determines that the in-service criteria should be set as part of this case, I would propose the criteria outlined in Schedule 2.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

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BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF THE JOINT APPLICATION OF UTILICORP UNITED, INC. AND THE EMPIRE DISTRICT ELECTRIC COMPANY FOR AUTHORITY TO MERGE THE EMPIRE DISTRICT ELECTRIC COMPANY WITH AND INTO UTILICORP UNITED INC.	))))))))	Case No. EM-2000-369

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 written testimony in question and answer form, consisting of 3 pages of testimony to be presented in the above case, that the answers in the attached written 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.

David W. Elliott

Subscribed and sworn to before me this 8th day of September, 2000.

Joyce C. Neuner
Notary Public

Joyce C. Neuner
Notary Public, State of Missouri
County of Osage
My Commission Exp. 08/18/2001

My commission expires

STAFF IN-SERVICE TEST CRITERIA
State Line combined cycle unit

1. ~~All~~ Major construction work, and pre-operational tests have been successfully completed such that the Combined Cycle Unit may be operated and successfully complete criteria items 2 through 9.
2. ~~Unit will demonstrate its ability to meet the contract guarantees made by manufacturer.~~ The new Westinghouse Combustion Turbine will demonstrate its ability to operate at the contract capacity at contract heat rate, and if required as per contract, produce the contract combustion gas exhaust flow at the contract temperature. The Heat Recovery Steam Generators (HRSGs) will demonstrate their ability to produce the contract steam flows at the contract steam conditions, with the contract combustion gas exhaust flow from both of the Westinghouse Combustion Turbines. The Westinghouse Steam Turbine will demonstrate its ability to operate at contract capacity, with the contract steam flow from the HRSGs at contract conditions. The existing Westinghouse Combustion Turbine will demonstrate its ability to operate at its new nominal capacity. These items will all be demonstrated together for a period of four hours during the testing for criteria item 7.
3. The Combined Cycle Unit will demonstrate its ability to ~~initiate the proper~~ startup from turning gear operation to nominal capacity ~~sequence resulting in the unit operating from zero rpm to base load~~ on natural gas fuel when prompted ~~locally, or remotely~~ by the operator.
4. The Combined Cycle Unit will demonstrate its ability to ~~initiate the proper~~ shut down ~~sequence~~ from ~~base~~ load resulting in ~~zero rpm on the unit~~ turning gear operation when prompted ~~locally, or remotely~~ by the operator.
5. The Combined Cycle Unit will demonstrate its ability to operate at minimum load for one hour on natural gas fuel.
6. The Combined Cycle Unit will demonstrate its ability to operate at or above 95% of ~~base~~ nominal load at the corresponding nominal heat rate for four continuous hours on natural gas fuel.
7. The Combined Cycle Unit will demonstrate its ability to produce an amount of energy (mwhr) within a 120 hour period which would result in a ~~operate at a~~ capacity factor of **_____** ~~over a period~~ during the period ~~of 168 continuous hours on natural gas fuel~~ when calculated by the formula shown in note 4.
8. Sufficient transmission facilities shall exist to carry the total design net electrical capacity of the combined cycle unit into the system.
9. The Combined Cycle Unit will demonstrate it has met all contract emission guarantees, and has met all environmental regulations required for unrestrictive operation of the unit.

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NOTES:

1. If the unit cannot demonstrate its ability to meet any of the criteria for which failure to meet the proposed criteria is judged to be immaterial to the overall in-service status of the unit, the Staff for good cause may waive that particular criteria. In making a decision to wave any particular criteria, the ~~The~~ Staff may review the completed testing documentation, and any additional unit operating data, to determine if the unit should be considered in-service, without further testing. Staff will provide it's rational in the event it decides to waive any particular criteria.
2. It is the Staff's intention, when possible, to witness the unit's ability to meet the criteria items. Regardless, Empire will provide to Staff all necessary documentation, including operating data logs, clearly demonstrating the capability of the unit to meet each of the criteria items.
3. ~~Several generic terms ("base load" and "minimum load") have been used because these actual loads of the unit are dependent upon ambient conditions. It is the Staff's intention to use the loads determined as part of the guarantee testing as base load and minimum load.~~ The "nominal capacity" of the combined cycle unit shall be at least 500 megawatts, at ISO conditions (i.e., 59 degrees F and 60% relative humidity). The "new nominal capacity " for the existing Westinghouse Combustion Turbine shall be the new capacity demonstrated by Empire District Electric Company as a result of the 1999 compressor upgrade. Manufacturer supplied ambient correction factors will be used when operation occurs at other than ISO conditions.
4. Capacity Factor **_____** = (Mwhs generated in ~~the 168~~ a 120 hour ~~continuous~~ period) / ((base load) x (~~168~~ 120 hours)).
5. The contract guarantee data referenced in criteria items 2 and 9 can be found in the Westinghouse Combustion Turbine contract section IVa, the Westinghouse Steam Turbine contract section IVb, and the Nooter/Eriksen contract Table 2A-1 and Section GC-40.2. Manufacturer supplied ambient correction factors will be used when operation occurs at other than ISO conditions.

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COMPARISON OF CRITERIA

ITEM NO.	State Line No. 1 and No. 2 CRITERIA	NEW SLCC STAFF CRITERIA	NEW SLCC EMPIRE CRITERIA	Iatan STAFF CRITERIA	Jeffery Energy Center Unit No. 2 STAFF CRITERIA
1	All construction completed	Same as SL 1& 2	Same as SL 1& 2	NO	NO
2	All preoperational tests completed	Same as SL 1& 2	Same as SL 1& 2	Same as SL 1& 2	Same as SL 1& 2
3	Ability to start on natural gas	Similar; start and run to full load	Same as SL 1& 2	NO	NO
4	Ability to start on oil	Not Applicable	Not Applicable	NO	NO
5	Ability to stop	Similar; full load to stop	Same as SL 1& 2	NO	NO
6	Ability to fast start	Not Applicable	Not Applicable	Not Applicable	Not Applicable
7	Ability to fast load	Not applicable	Not applicable	Not applicable	Not applicable
8	One hour peak load	Not applicable	Not applicable	Not applicable	Not applicable
9	Four hour base load	Same as SL 1& 2	Same as SL 1& 2	Same as SL 1& 2	Same as SL 1& 2
10	Guaranteed heat rate	Similar; all guarantees	NO	NO	NO
11	Guaranteed NOx	NO	NO	NO	NO
12	72 hours continuous operation above minimum load	120 hours with ** ____ ** capacity factor	NO	168 hours with 60% capacity factor	168 hours with 60% capacity factor
13	8 hours operation on back up fuel	Not applicable	Not applicable	Not applicable	Not applicable
14	NO	One hour at minimum load	NO	NO	NO
15	NO	Transmission system capable of unit output	NO	Same as Staff SLCC	NO
16	NO	NO	Final payment recorded on Empire's books	NO	NO
17	NO	NO	NO	Operate for 80% of 400 hours at or above minimum load	Same as Iatan
18	Not applicable	Not applicable	Not applicable	Operate to show coal is primary fuel	Same as Iatan

NOTE: Changed from 168 hours with ** ____ **

Schedule 3

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