708

Exhibit No.:
Issue(s): Transmission
Interconnection
Distribution Reliability
Witness: James L. Ketter
Type of Exhibit: Rebuttal
Sponsoring Party: MoPSC Staff
Case No.: EM-2000-292

# ON BEHALF OF THE

# MISSOURI PUBLIC SERVICE COMMISSION

# UTILITY OPERATIONS DIVISION

# REBUTTAL TESTIMONY

# OF

# JAMES L. KETTER

# UTILICORP UNITED INC. AND
# ST. JOSEPH LIGHT & POWER COMPANY

# CASE NO. EM-2000-292

Jefferson City, Missouri

May, 2000

Exhibit No. 708
Date 7-13-00 Case No. EM-2000-292
Reporter mo

**REBUTTAL TESTIMONY**

**OF**

**JAMES L. KETTER**

**UTILICORP UNITED INC. and ST. JOSEPH LIGHT & POWER COMPANY**

**CASE NO. EM-2000-292**

Q. Please state your name and give your business address.

A. James L. Ketter, P.O. Box 360, Jefferson City, Missouri 65102.

Q. Mr. Ketter, by whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission (MPSC or Commission) as an engineer in the Engineering Section of the Electric Department.

Q. Please summarize your educational background and professional experience.

A. I received a Bachelor of Science degree in Electrical Engineering from the University of Missouri-Columbia in 1970. I served for 4 1/2 years as an officer in the United States Navy and returned to the University of Missouri-Columbia campus to pursue an advanced degree. In December 1977 I received a Masters degree in Business Administration from the University of Missouri-Columbia.

I have been employed by the Commission since 1976. As an engineer on the Staff, I have testified before the Commission on certificates for service areas, electric transmission and power plant certification cases and I have presented testimony on rate design in electric, steam and gas rate cases. I have testified before the Commission in cases involving territorial agreements. I am a registered Professional Engineer in the state of Missouri, my registration number is E-20056. I am a member of the National Society

of Professional Engineers and I am a member of the Jefferson City Chapter of the Missouri Society of Professional Engineers.

Q. Have you reviewed the Application and the testimony filed in Case No. EM-2000-292?

A. Yes, I have.

Q. What is the purpose of your testimony in this case?

A. Concerning this application from UtiliCorp United Inc. (UtiliCorp) to merge its electric operations with St. Joseph Light & Power Company (SJLP), the purpose of my testimony is to discuss issues involving the interconnection of transmission facilities and the reliability of the distribution system for a combined company.

UtiliCorp and SJLP presently have no direct connection of their transmission facilities. UtiliCorp witness Richard C. Kruel outlines in his direct testimony alternatives studied to provide a direct connection for the proposed merger. I will address the alternative assumed by the Staff in evaluating the total merger costs. I will also address retention of reliability indices and electric service reliability to customers under the proposed merger so that the merger is not detrimental to the public interest.

## TRANSMISSION LINE INTERCONNECTION

Q. Have you reviewed the direct testimony of Mr. Kruel and the proposed transmission interconnection alternatives?

A. Yes, I have.

Q. Please summarize your conclusions concerning the proposed alternatives for direct interconnection of the two electric utilities.

A. The present configuration of the transmission systems of UtiliCorp and SJLP does not include a direct connection between the two systems. Interconnection alternatives studied as part of the proposed merger include alternatives that involve Kansas City Power & Light Company (KCPL), either by purchase, lease or paralleling existing transmission facilities.

Regarding alternatives that involve an interconnection between UtiliCorp and SJLP with direct participation from KCPL, KCPL is not interested in the sale of the needed transmission facilities, nor has a lease of the needed facilities been completed. To date, the least cost option that will accomplish the physical interconnection involves construction of new transmission line by UtiliCorp.

Mr. Kruel identified in his Direct Testimony an alternative that would provide a direct connection between the systems (Option 2-B) as one of the preferred options. This option involves construction of a new 161 kV transmission line from the SJLP Lake Road Substation to the Nashua Substation where Missouri Public Service (MPS), an operating division of UtiliCorp, has transmission facilities. Proposed construction would parallel a KCPL line.

The estimated cost of this option is $7.9 million, which includes the cost of facilities in substations at each end of the line in addition to a new 161 kV transmission line. This is currently the least cost option for a physical link between the two utilities. The Staff has used this cost in evaluating total merger costs.

Q. What problems does this alternative raise when new transmission line construction is anticipated?

A. New transmission line construction can be difficult to predict from the perspective of the time and cost required to complete. The proposed option is parallel to an existing transmission line, which should be a benefit. Acquiring additional right-of-way next to the existing KCPL line could help minimize the width of easement necessary to build a new line. The costs for right-of-way and possible condemnation costs are unknown. This uncertainty makes quantification of the cost more difficult, if in fact a new transmission line is needed to provide a connection between the merged systems.

Q. Mr. Kruel identified other options for electric system interconnection that did not require new construction. How did you evaluate these alternatives?

A. One option is for UtiliCorp to purchase firm transmission capacity from KCPL to transfer power between the present UtiliCorp system and the present SJLP system. A question arises whether this firm capacity will be available over an extended period. A further deterrent is that the cost to purchase firm capacity over an extended period is estimated to be $11.3 million, which is higher than the estimated $7.9 million for the least cost option.

Another option is to participate in a regional transmission organization. The Midwest Independent System Operator (ISO) or the Southwest Power Pool (SPP) Regional Transmission Organization (RTO) provide opportunities for the merged entity to integrate the separate systems through the purchase of network transmission service.

The SPP offers Network Service through a Federal Energy Regulatory Commission (FERC) approved regional tariff. UtiliCorp has indicated that it has requested an impact study from the SPP for participation on this tariff. These regional transmission system options may provide the least cost for integration of a merged UtiliCorp and SJLP

system, but the long-term costs to participate in these alternatives are speculative at this time.

Participation in an ISO or RTO is designed to allow members of these organizations to move power through the transmission system by a tariffed rate and under the control of a system administrator. Protocol is established to take action if overloading occurs on the transmission lines. Impact studies are used to determine whether the transmission organization such as an ISO or a RTO can provide transmission service between UtiliCorp and SJLP without the need of building new transmission lines. Since the SPP impact studies have not been completed at this time, the Staff will utilize the least cost alternative that provides a physical connection in estimating the total merger costs.

Q. If you assume that the transmission interconnection can be accomplished by one of these options, what other cost is involved in merging the two transmission systems?

A. Control of the merged transmission system from MPS' Lee's Summit dispatch center will require routing of the SJLP Supervisory Control and Data Acquisition (SCADA) system inputs to Lee's Summit. This will be accomplished by routing communication lines from the SJLP dispatch center to Lee's Summit so that data and remote operation of equipment can be accessed from Lee's Summit. This is a transition cost, estimated at $1 million, that is required to merge the service areas and dispatch from Lee's Summit. The Staff has also used the $1 million estimated cost in estimating the total merger costs.

**DISTRIBUTION RELIABILITY**

Q. Are you involved with response to customer inquiries concerning the reliability of electric service?

A. Yes, as a member of the Electric Department Engineering Staff, I respond to inquiries that are referred from the Commission's Consumer Services Department or from direct contact with the public.

Q. Will other Staff witnesses address quality of service issues?

A. Yes, Staff witness J. Kay Niemeier will submit testimony concerning service indicators for the Customer Call Center and Staff witness Deborah Anne Bernsen will submit testimony concerning quality of service issues.

Q. UtiliCorp witness Stephen L. Pella addresses the implementation plan for a merged operation of the UtiliCorp and SJLP systems. What improvements in provision of reliable service does UtiliCorp potentially offer?

A. A computer-aided dispatching system utilized by UtiliCorp allows service technicians to work remotely by providing information to the service truck. Communication between the Customer Call Center and the truck would update and provide better information to the workers which would speed response to customers needs. This technology is a great tool in providing efficient response to outages and in response to customer needs. Implementation of this technology in the SJLP service area is subject to further analysis to determine the feasibility of utilizing this computer-aided dispatch in the SJLP service area.

Communication across the SJLP territory is necessary to operate this system of a direct link to the service truck. The feasibility of expanding this system into the SJLP

service area has not been established. UtiliCorp indicates that if the analysis is positive, the current timetable to expand computer-aided dispatch to the SJLP area is the third quarter of 2001. Offering this technology to the SJLP area could have a positive benefit to SJLP customers, if it can be economically implemented.

Q. If the UtiliCorp and the SJLP systems are merged, how can reliability be monitored?

A. Reliability measures that are currently maintained by UtiliCorp include a System Average Interruption Frequency Index (SAIFI), a System Average Interruption Duration Index (SAIDI) and a Customer Average Interruption Duration Index (CAIDI). These indices provide information from UtiliCorp districts and system-wide averages that can track the overall performance of the delivery of electric service. These same indices are maintained by SJLP to track service interruptions.

Use of these indices on a total company basis may not reveal the existence of local areas that experience unusual service interruptions, which are usually brought forward by customer complaints to the utility or to the Commission's Consumer Services Department. Resolution of individual or isolated problems will continue to be addressed by utility action, recognizing the need for system improvements, or complaints from customers.

These indices (SAIFI, SAIDI and CAIDI) will provide a benchmark to monitor how the system average provision of electric service is being maintained if the utilities are merged. This is an important issue for customers, regardless of the electric supplier, and will be an important issue as the electric industry struggles to move toward a competitive market.

Below is a tabulation of the SAIFI, SAIDI and CAIDI results for UtiliCorp-Missouri Public Service division and SJLP. These numbers reflect the actual outages and number of customers, without any changes for unusual weather occurrences.

UTILICORP – MPS

| | 1997 | 1998 | 1999 | 3 YR AVE |
|---|---|---|---|---|
| SAIFI | 0.982974 | 1.295023 | 0.921684 | 1.0666 |
| SAIDI | 1.317071 | 3.815329 | 1.147427 | 2.0933 |
| CAIDI | 1.339878 | 2.946142 | 1.244919 | 1.8436 |

SJLP

| | 1997 | 1998 | 1999 | 3 YR AVE |
|---|---|---|---|---|
| SAIFI | 2.30 | 2.53 | 0.92 | 1.9167 |
| SAIDI | 0.53 | 0.65 | 0.25 | 0.4767 |
| CAIDI | 0.23 | 0.26 | 0.27 | 0.2533 |

The SAIFI index (number of occurrences) reflects the average frequency that customer's experience on electric outage and is defined as the total number of customers interrupted divided by the total number of customers. The SAIDI index (hours) reflects the average interruption duration and is defined as the sum of all customer interruption duration divided by the total number of customers. The CAIDI index (hours) reflects the average interruption duration and is defined as the sum of all customer interruption duration divided by the total number of customers interrupted.

These reliability indices show overall system performance as an average of the total customers, the system average duration and the customer average duration. These measures can help in accessing the performance of the utility in providing reliable electric service. The indices will help define the quality of service provided and bring attention to any positive or negative impact that a merger of utility systems might bring.

Q. What is your recommendation concerning the use of the SAIFI, SAIDI and CAIDI indices to monitor quality of electric service?

A. My recommendation, should the merger of UtiliCorp and SJLP be approved, is that UtiliCorp be directed to maintain the SAIFI, SAIDI and CAIDI reliability measures separately for the MPS and SJLP divisions, and provide this information to the Staff as outlined in the Rebuttal Testimony of Staff witness Bernsen. The Staff will monitor this information, as well as the complaints received from customers, to help ensure that customers continue to receive reliable electric service.

Further, I recommend that a rolling three-year average of the SAIFI, SAIDI and CAIDI indices be used as the appropriate indicators for distribution reliability of service after the merger. The process for monitoring these indicators and for MPS and SJLP to take remedial action in this area, if applicable, is outlined in the rebuttal testimony of Staff witness Bernsen. The rolling average will include the most current three years of distribution service experience. These averages should be adjusted, as appropriate, to eliminate the effects of emergency, catastrophe, natural disaster, extreme adverse weather conditions, sabotage or work stoppage before any remedial actions are required of MPS or SJLP.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

| | | |
|---|---|---|
| In the Matter of the Joint Application of | ) | |
| UtiliCorp United Inc. and St. Joseph | ) | |
| Light & Power Company for Authority to | ) | |
| Merge St. Joseph Light & Power Company | ) | CASE NO. EM-2000-292 |
| With and into UtiliCorp United Inc., and, | ) | |
| In Connection Therewith, Certain Other | ) | |
| Related Transactions. | ) | |

AFFIDAVIT OF JAMES L. KETTER

STATE OF MISSOURI )
) ss
COUNTY OF COLE )

James L. Ketter, 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 9 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.

James L. Ketter

Subscribed and sworn to before me this 1st day of May, 2000.

Notary Public

My commission expires_____

SHARON S WILES
NOTARY PUBLIC STATE OF MISSOURI
COLE COUNTY
MY COMMISSION EXP. AUG. 23,2002