Exhibit No.:
Issue(s): Unit Availability and Hawthorn 5 Explosion
Witness: Eve A. Lissik
Type of Exhibit: Cross-Surrebuttal
Sponsoring Party: MoPSC Staff
Case No.: EC-99-553

ON BEHALF OF THE

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

CROSS-SURREBUTTAL TESTIMONY

OF

EVE A. LISSIK

GST STEEL COMPLAINT RESPECTING KANSAS CITY POWER & LIGHT COMPANY

CASE NO. EC-99-553

Jefferson City, Missouri

April, 2000

CROSS-SURREBUTTAL TESTIMONY

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KANSAS CITY POWER & LIGHT COMPANY

CASE NO. EC-99-553

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

Q. ARE YOU THE SAME EVE A. LISSIK WHO HAS FILED REBUTTAL TESTIMONY IN THIS CASE?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR CROSS-SURREBUTTAL TESTIMONY?

A. I will address several of the issues raised by Kansas City Power & Light Company (KCPL) Witness M. Monika Eldridge in her report "Evaluation of Generating Assets Owned and Operated by Kansas City Power & Light Company" that was filed as Schedule MME-1 to her rebuttal testimony. This report contains an evaluation of the generating units owned by KCPL that was performed in response to allegations raised by GST Steel (GST) concerning the reliability and availability of these units.

Q. WOULD YOU BRIEFLY EXPLAIN THE METHODS USED BY MS. ELDRIDGE IN HER STUDY?

A. Yes. Ms. Eldridge assessed the reliability and availability of KCPL's generating units by evaluating equivalent availability factors (EAFs), forced outage rates

(FORs), operating and maintenance (O&M) costs, fuel costs, and significant outages by comparing these parameters to those of selected peer units to determine whether or not KCPL's units performed within acceptable industry standards.

Q. DO YOU BELIEVE THAT BENCHMARKING AGAINST PEER UNITS IS AN ACCEPTABLE METHOD FOR DETERMINING RELIABILITY AND AVAILABILITY STANDARDS FOR GENERATING UNITS?

A. Although this method has its limitations, benchmarking can give a useful indication of whether or not a generating facility, utility, etc., is operating in a manner that is consistent with what operations of peers.

Q. WHAT ARE THE LIMITATIONS OF USING BENCHMARKING AS A METHOD FOR DETERMINING THE RELIABILITY AND AVAILABILITY OF KCPL'S GENERATING STATIONS?

A. Even under the best circumstances, "similar" (i.e., design, manufacturer, vintage, capacity, etc.) units operated under similar conditions can have different operating characteristics because of fuel mixes, loading and dispatching conditions, market pressures (competitive markets vs. rate of return regulation), random outages, etc. Thus, one can expect any individual peer unit to behave atypically at some point in time. This problem can be overcome somewhat through the use of statistical averages over a large number of peer groups. However, one should be careful not to describe parameters averaged over a peer group as representing an industry standard. Instead, these are simply averages against which to compare the performance of KCPL's generating units.

Q. DOES THE REPORT FILED BY MS. ELDRIDGE DEMONSTRATE THAT KCPL'S GENERATING UNITS ARE OPERATING RELIABLY?

A. The report filed by Ms. Eldridge indicates that although the EAFs for the peer unit group are increasing with time, the EAFs for the KCPL system increased more rapidly in early years (1989 through the mid-1990s), but has been decreasing in the past several years (Schedule MME-1, Exhibit A-1, page 53). These results support the statement made by GST Steel witness, Jerry N. Ward, in his direct testimony:

"...During this period [1994 to 1998], while most utilities were ...increasing unit availability, availability at KCPL's plants has been going in exactly the opposite direction."(page 6, lines 9-11).

Q. DOES MS. ELDRIDGE ARRIVE AT THE SAME CONCLUSION?

A. Not exactly. In her report she interprets these results somewhat differently.

"...After evaluating the entire KCPL system as an aggregate, I found that EAF for the KCPL system has historically been above the industry average; except from 1995 to 1998 when the KCPL system has been less than a percentage point lower than the expected average and still well within acceptable industry standards...." (Schedule MME-1, page 11).

Q. WHAT IS MOST CRITICAL TO THIS CASE: DECREASING EAF OR BEING WITHIN "ACCEPTABLE INDUSTRY STANDARDS"?

A. Clearly, being at an acceptable level of EAF is the most critical measure. If the peer group average constitutes an acceptable value of EAF, then KCPL meets that standard. However, the decreasing EAFs observed for KCPL are a warning that should this trend continue, KCPL will fall further below the industry average.

Q. DOES MS. ELDRIDGE ADDRESS THE EAFS FOR THE KCPL BASELOAD UNITS INDIVIDUALLY?

A. Yes. Her analysis shows that historically, the EAFs for the Hawthorn unit have been below those of similar peer units and have been decreasing since 1994, while the EAFs for the peer units have been increasing (Schedule MME-1, Exhibit B-1, page 61). For the most part, both the Iatan and La Cygne 2 units have had EAFs above those of their peers. Since 1994 the EAFs for both units have dropped steadily, and the EAF for La Cygne 2 has dropped about 10 % below the EAF for its peer group in the past several years (Schedule MME-1, Exhibit C-1, page 69). The EAF for La Cygne 1 has consistently been lower that that of its peer group (Schedule MME-1, Exhibit D-1, page 77). However, the Montrose units (Schedule MME-1, Exhibit E-1, page 85) and Wolf Creek (Schedule MME-1, Exhibit F-1, page 93) have operated with EAFs consistently greater than those of their peers, thus pulling up the overall EAF average for KCPL's baseload generating units.

Q. HOW DO YOU INTERPRET THESE RESULTS?

A. The below average EAFs for LaCygne 1 and the Hawthorn units, and the decrease in EAFs for Iatan and La Cygne 2 are of concern. However, the generating units with EAFs consistently above those of their peers (Iatan, the Montrose units and Wolf Creek) represent more than half of KCPL's baseload generation.

Q. DOES MS. ELDRIDGE CONSIDER ANY OTHER PARAMETERS WHEN EVALUATING THE RELIABILITY AND THE AVAILABILITY OF KCPL'S GENERATING UNITS?

A. Yes. Ms. Eldridge also presents information concerning the system-wide forced outage rates for KCPL that shows increasing system forced outage rates, above those of the peer group, for the period 1994 to 1998 (Schedule MME-1, Exhibit A-2, page 54). Only Wolf Creek (Schedule MME-1, Schedule F-2, page 94) and the Montrose

units (Schedule MME-1, E-2, page 86) have had forced outage rates below those of their peer units in the mid-1990s.

Q. WHAT OTHER INFORMATION DOES MS. ELDRIDGE CONSIDER IN EVALUATING THE AVAILABILITY AND RELIABILITY OF KCPL'S GENERATING UNITS?

A. The other information she considers are significant forced outages (forced outages greater than 60 days), and the O&M costs both with and without fuel costs included. She states that:

"... when evaluating the total number of forced outages greater than 60 days, ...the KCPL units had not experienced any more than the peer units." (Schedule MME-1, page 9).

With respect to the O&M costs with and without fuel, she demonstrates that although O& M costs for the KCPL generating units have been generally higher than industry peers, KCPL's fuel costs have been quite a bit lower.

Q. HOW DO YOU RESPOND TO THIS ANALYSIS?

A. With respect to her analysis of significant forced outages, a time period of 60 days or longer is a significant amount of time for a baseload unit to be offline. One would expect that most baseload generation would not encounter too many outages of this magnitude. Her analysis shows that to be the case with both the KCPL and peer units having no more than 2 outages of this duration during the 1989-1998 time period.

With respect to her analysis of KCPL's O&M costs, clearly the results are not unexpected. There is a trade-off between O&M costs and fuel costs. Typically, units that burn lower cost fuels have higher O&M costs because lower cost fuels generally produce less energy. Thus, generating units that burn low cost, low energy fuel, have high costs

of operation and higher costs of maintenance because they must burn more fuel to produce energy.

Q. BASED ON THE INFORMATION PRESENTED BY BOTH PARTIES, DO YOU BELIEVE KCPL'S GENERATING UNITS ARE OPERATING RELIABLY?

A. Even though the Hawthorn 5 unit is currently unavailable because of the boiler explosion that occurred in February of 1999, and even though the availability of some of KCPL's baseload generation is below that of its peers, KCPL's generating units have been operating at an equivalent availability of around 80 %. This information, coupled with the relatively high capacity factors of its baseload units (shown below)

Unit	Average Capacity Factor (1994 to 1998)
Montrose	60.53%
Hawthorn	63.74%
La Cygne	69.69%
Iatan	82.10%
Wolf Creek	97.03%

leads me to believe that as a whole, KCPL's generating units are operating within acceptable limits. However, the increasing forced outage rates at some of its units, coupled with a slight, but steady decrease in the system-wide EAFs are cause for some concern. As a result, the Staff will continue to monitor the operation of these units through the monthly data submitted in response to 4 CSR 240.20.80.

Q. IN YOUR REBUTTAL TESTIMONY, YOU MADE THE FOLLOWING TWO RECOMMENDATIONS TO THE COMMISSION:

1. SHOULD THE COMMISSION DETERMINE THAT THERE IS A STRONG, BUT NOT CONCLUSIVE BASIS FOR GST'S ALLEGATION OF DECLINING

UNIT AVAILABILITY, THE COMMISSION SHOULD ORDER A FORMAL STAFF INVESTIGATION ON THE OPERATION AND MAINTENANCE OF KCPL'S GENERATION, TRANSMISSION, AND DISTRIBUTION FACILITIES.

2. THE COMMISSION SHOULD DELAY ANY DECISION IN THIS CASE RESPECTING HAWTHORN 5 PENDING THE OUTCOME OF THE STAFF'S INDEPENDENT INVESTIGATION AND FINAL REPORT OF THE BOILER EXPLOSION AT HAWTHORN 5 (CASE NO. ES-99-581).

DO YOU HAVE ANY REASON TO CHANGE YOUR RECOMMENDATIONS?

A. No. Even though GST has not provided conclusive evidence of the declining availability of the KCPL generating units, and even though it appears that KCPL's generating units are operating in a reliable manner at this time, the evidence is still inconclusive. Surrebuttal testimony of GST has not yet been filed, and all evidence will not have been presented until the hearings are over. In addition, it is the Staff's view that a large part of this case hinges upon the findings of KCPL, its insurance carriers, and the Staff with respect to the boiler explosion at Hawthorn 5.

Q. DOES THIS COMPLETE YOUR CROSS-SURREBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

GS Technology Operating Company, Inc.,	)	
Doing business as GST Steel Company,	)	
Complainant,	)	Case No. EC-99-553
v.	)	
Kansas City Power & Light Company,	)	
Respondent.	)	

AFFIDAVIT OF EVE A. LISSIK

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Eve A. Lissik, of lawful age, on her oath states: that she has participated in the preparation of the foregoing written testimony in question and answer form, consisting of 7 pages of testimony to be presented in the above case; that the answers in the attached written testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true to the best of her knowledge and belief.

Eve A. Lissik

Subscribed and sworn to before me this 5th day of April, 2000.

Notary Public

Joyce C. Neuner
Notary Public, State of Missouri
County of Osage
My Commission Exp. 05/18/2001

My commission expires