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February 23, 2007

RE: AN INVESTIGATION OF THE RELIABILITY MEASURES OF KENTUCKY'S JURISDICTIONAL ELECTRIC DISTRIBUTION UTILITIES AND CERTAIN RELIABILITY MAINTENANCE PRACTICES - Adm Case 2006-00494

Dear Ms. O'Donnell:

Enclosed please find an original and six (6) copies of Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company ("LG&E") Response to the Second Data Request of Commission Staff dated February 9, 2007, in the above-referenced docket.

Should you have any questions concerning the enclosed, please do not hesitate to contact me.

Sincerely,

Rick E. Lovekamp

cc: Parties of Record

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

AN INVESTIGATION OF THE RELIABILITY)	
MEASURES OF KENTUCKY'S)	ADMINISTRATIVE
JURISDICTIONAL ELECTRIC)	CASE NO: 2006-00494
DISTRIBUTION UTILITIES AND CERTAIN)	
RELIABILITY MAINTENANCE PRACTICES)	

RESPONSE OF
KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY
TO SECOND DATA REQUEST OF COMMISSION STAFF
DATED FEBRUARY 9, 2007

FILED: FEBRUARY 23, 2007

**KENTUCKY UTILITIES COMPANY
AND
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2006-00494

Response to the Second Data Request of Commission Staff dated February 9, 2007

Question No. 1

Responding Witness: Paul G. Thomas

- Q-1. Describe in detail how the company utilizes all of the reliability measures it monitors.
- A-1. Kentucky Utilities Company (KU) and Louisville Gas and Electric Company (LG&E) utilize reliability metrics to measure distribution system performance. SAIDI and SAIFI are measured and reported monthly as key performance indicators.

SAIDI and SAIFI are reported quarterly and annually by substation to the KPSC pursuant to the Commission's Order in Case No. 2001-00104.

Annual Reliability targets are established for SAIDI and SAIFI and are included in the employee Team Incentive Award program to encourage performance improvement.

Reliability metrics are used to improve system reliability performance. The data is used to prioritize maintenance spending and to provide monthly feedback to management and employees on reliability performance.

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Question No. 2

Responding Witness: Paul G. Thomas

- Q-2. Has the company determined an appropriate operating range or performance threshold based on these measures? If yes, identify.
- A-2. Yes. KU and LG&E have established performance targets for SAIDI and SAIFI as listed below. Targets are periodically reviewed and updated.

KU

Year	SAIDI	SAIFI
2007	83.65	.739
2008	80.83	.678
2009	78.95	.670

LG&E

Year	SAIDI	SAIFI
2007	95.87	.992
2008	92.64	.910
2009	90.48	.899

The industry has not standardized on many aspects of system performance. Acceptable operating ranges or performance thresholds for SAIDI and SAIFI are difficult to derive for a number of reasons. For example, reporting criteria, data availability, geographical characteristics, and degree of automation among utilities can produce significant differences in SAIDI and SAIFI values for equivalent reliability performance.

Because of these differences among utilities, reliability performance is meaningfully measured by evaluating SAIDI and SAIFI values over time. Standards for each utility should reflect that utility's unique operational circumstances.

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Question No. 3

Responding Witness: Paul G. Thomas

- Q-3 Describe in detail how the company develops formal plans to address its worst performing circuits. If the company does not develop such plans, indicate so in the response.
- A-3. Reliability data is extracted from the Outage Management System (OMS) for both KU and LG&E and analyzed by the Director of Reliability. Worst performing circuits are identified annually utilizing SAIFI and total customer interruptions to rank performance based on outage frequency. Reliability projects and targeted vegetation management initiatives are implemented based on this analysis.

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Question No. 4

Responding Witness: Paul G. Thomas

Q-4. Why are momentary outages excluded?

A-4. SAIDI and SAIFI are the key reliability metrics chosen by KU and LG&E to measure performance. MAIFI is not measured because most devices (substation breakers and line reclosers) that produce a momentary outage are not electronically monitored and recorded by SCADA.

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Question No. 5

Responding Witness: Paul G. Thomas

Q-5. Why are major event days or major storms excluded?

A-5. KU and LG&E define a major event as any event where restoration exceeds 24 hours in duration. A major storm is regarded as a significant weather event that exceeds reasonable design and or operational limits of the electric power system. Removing major events from reliability measures normalizes the impact of extreme weather events on performance assessments and trend analyses.

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Question No. 6

Responding Witness: Paul G. Thomas

- Q-6. Provide a hard copy citing of the Rural Utilities Service (“RUS”) reliability monitoring or reporting requirements or, in the alternative, provide an accessible Internet site.
- A-6. KU and LG&E could not locate a hard copy citing, or find an accessible Internet site referencing, the RUS reliability monitoring or reporting requirements.

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Question No. 7

Responding Witness: Paul G. Thomas

- Q-7. Provide and describe in detail any service restoration or outage response procedure utilized.
- A-7. Pursuant to the Emergency Curtailment and Service Restoration Procedures contained on Original Sheet No. 93 of the Companies' tariffs, service restoration is prioritized under the Priority Levels identified in these procedures where practical. However, because of the varieties of unpredictable circumstances which may exist or precipitate outages, it is sometimes necessary to balance specific individual needs with infrastructure needs that affect a larger population.

When customers experience an outage, they will typically place a call into one of the Companies' call centers. Customers may talk to a company representative or report the outage via an Integrated Voice Response Unit (IVRU). The outage information is then entered into a Trouble Order Entry System (TOE) that serves the Outage Management System (OMS). The OMS predicts the number and classification of customers whose service is interrupted. Distribution Control Center (DCC) personnel then evaluate the outages based upon available information in order to determine work schedules and necessary personnel and equipment. DCC will dispatch a first responder service technician to evaluate the outage event, insure public safety, and restore service if possible. Crews, if needed, will then be dispatched to repair the facilities and restore service to as many customers as possible. Restoration is then reported by company personnel involved in the process by notification to the DCC. TOE is updated from the OMS and service restoration is confirmed by automated callbacks to the customer.

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Question No. 8

Responding Witness: Paul G. Thomas

- Q-8. Refer to the RUS drawing M1.30G "RIGHT-OF-WAY CLEARING GUIDE" ("ROW Guide"), a copy has been provided in Appendix A.
- a. Is this type of clearance requirement appropriate for all areas of a distribution system? If not, what types of exclusions or exceptions should be made?
 - b. If the distribution utility is not already following this guide, provide an estimate of the cost and time-line to implement.
- A-8. a. No. The "RIGHT-OF-WAY CLEARING GUIDE" depicted in RUS drawing M1.30G is not appropriate to apply in KU's or LG&E's service territories. Right of way widths in many urban and rural areas within KU's and LG&E's service territories are narrow, and clearance is limited to easement widths which typically range from 10 to 30 feet. In addition, ground-to-sky clearances for 30 to 40 feet right of way widths are objectionable to many customers. Other exceptions in addition to limitations in existing easements are acceptable low growing vegetation and healthy overhang. Application of this type of rigid standard would also result in excessive and unreasonable costs.
- b. As noted above, KU and LG&E do not follow this guide. The Companies' easement widths typically range from 10 to 30 feet and do not comply with the RUS standard. Compliance with the guide would require consent of affected property owners, acquisition of wider easements in many cases, removal of all vegetation and structures in the right of way or adjacent public rights of way, and removal of all overhang. Providing an estimated cost and time to implement would require a detailed field survey to determine the quantity and scope of the vegetation and structures to be removed, and right of way negotiations would need to be conducted to obtain additional easement widths. From the Companies' perspective, the costs associated with the RUS standard would be prohibitive.

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Question No. 9

Responding Witness: Paul G. Thomas

- Q-9. Refer to North American Electric Reliability Corporation (“NERC”) standard FAC-003-1 “Transmission Vegetation Management Program” (“NERC Standard”), a copy is attached in Appendix B.
- a. Does the company prefer the type of standard described in the NERC Standard over the type of standard described in the ROW Guide? Explain why you prefer one over the other.
 - b. Refer to section R3 of the NERC Standard and substitute “distribution” for “transmission.” Is the distribution utility capable of meeting the reporting requirements described in the section? If not, why not?
 - c. Again referring to section R3 as applied to distribution, how many sustained outages would be reportable for the calendar year 2006?
- A-9.
- a. Neither standard is feasible due to limited available easements, excessive costs, and customer/landowner resistance.
 - b. Yes, with some exceptions as noted in 9(c) below. Tree outage information can be provided by circuit number, date, time and duration of the outage, a description of cause (growth, limb on line, off right of way tree) and counter measures taken. Revisions in OMS and training of field personnel would be needed to fully comply with reporting requirements.
 - c. Distribution tree related outages reported for 2006 closely match categories 1, 2, and 3 as defined in R3.4. The table below excludes major storms and therefore aligns with R3.2 (which excludes natural disasters). Vegetation outages that are the result of human action are not considered to be tree related and are therefore not included. However, vegetation outages resulting from the action of an animal are considered tree related and are included.

2006 Excluding Major Storms	Category 1 Tree Growth Outages	Category 2 Tree Limb Outages	Category 3 Tree Fell Outages
KU	300	564	695
LG&E	236	413	290

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Question No. 10

Responding Witness: Paul G. Thomas

- Q-10. Provide and discuss any right-of-way maintenance standard which is preferable to those identified in questions 8[1] and 9[2] above.
- A-10. Rigid standards (as identified in questions 8[1] and 9[2] above) prescribing the width of the right of way to be cleared are impractical to establish due to predictable customer/landowner resistance and available easement widths. A vegetation management program incorporating a flexible, multi-cycle trim strategy is a cost effective approach to right of way maintenance. Such a program should include visual inspections by utility arborists who develop work plans to target trees that need to be trimmed or removed to prevent an outage as well as the flexibility to prescribe a different cycle by circuit that addresses growth and tree density for that circuit. A prescribed average trim cycle with a mid-cycle touch up on multiphase lines is preferred.

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Question No. 15

Responding Witness: Paul G. Thomas

Q-15. How many substations are equipped with SCADA? How many are not?

A-15.

	Distribution Substations with SCADA	Distribution Substations without SCADA
KU	58	415
LG&E	68	0

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Question No. 16

Responding Witness: Paul G. Thomas

Q-16. How many reclosers beyond SCADA-equipped substations are equipped with SCADA?

A-16. KU has one recloser beyond a SCADA-equipped substation that is equipped with SCADA, and LG&E has none.

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Question No. 17

Responding Witness: Paul G. Thomas

Q-17. Describe in detail the capabilities of the Outage Management System to monitor outages and provide reliability-related information.

A-17. The Outage Management System (OMS) monitors and documents customer outages and records reliability information.

OMS provides two primary tools for monitoring outages. The "Authority" tool is a management tool utilized to define the "control zone" assigned to the dispatcher. These zones may be changed at any time and are frequently changed to better focus on restoration as needed in a particular area of an operations center. The "Trouble Summary" tool shows the number of incidents, the number of calls, as well as the number of customers predicted out for a particular area. This tool is used in assessing the magnitude of the outage and the volume of work in order to manage the necessary resources for optimal restoration.

An Event Details tool records all pertinent reliability data associated with each incident. Reliability information, such as initial outage time, restoration time, outage cause, weather, and customers affected must be entered before the incident can be completed and the outage event closed.

The reporting of reliability information, such as SAIDI and SAIFI, is obtained from data stored in the OMS system.