



Mr. Reggie Chaney  
Director of Engineering  
Kentucky Public Service Commission  
211 Sower Boulevard  
Frankfort, Kentucky 40602-0615

RECEIVED

APR 01 2009

PUBLIC SERVICE  
COMMISSION

**E.ON U.S. LLC**  
State Regulation and Rates  
220 West Main Street  
PO Box 32010  
Louisville, Kentucky 40232  
www.eon-us.com

Rick E. Lovekamp  
Manager - Regulatory Affairs  
T 502-627-3780  
F 502-627-3213  
rick.lovekamp@eon-us.com

April 1, 2009

**RE: An Investigation of the Reliability Measures of Kentucky's Jurisdictional Electric Distribution Utilities and Certain Reliability Maintenance Practices- Administrative Case No. 2006-00494**

Dear Mr. Chaney:

Enclosed please find Louisville Gas and Electric Company and Kentucky Utilities Company's 2008 Annual Reliability Report pursuant to the Commission's Order dated October 26, 2007 in the above mentioned matter.

Should you have any questions concerning the enclosed, please contact me at your convenience.

Sincerely,

Rick E. Lovekamp

# KENTUCKY PUBLIC SERVICE COMMISSION

## Electric Distribution Utility Annual Reliability Report

---

### SECTION 1: CONTACT INFORMATION

UTILITY NAME	1.1	Louisville Gas and Electric Company
REPORT PREPARED BY	1.2	Nelson Maynard, Director Reliability
E-MAIL ADDRESS OF PREPARER	1.3	nelson.maynard@eon-us.com
PHONE NUMBER OF PREPARER	1.4	859-367-1107

---

### SECTION 2: REPORT YEAR

CALENDAR YEAR OF REPORT	2.1	2008
-------------------------	-----	------

---

### SECTION 3: MAJOR EVENT DAYS

$T_{MED}$	3.1	3.602
FIRST DATE USED TO DETERMINE $T_{MED}$	3.2	1-Jan-05
LAST DATE USED TO DETERMINE $T_{MED}$	3.3	31-Dec-07
NUMBER OF MED IN REPORT YEAR	3.4	18

---

NOTE: Per IEEE 1366  $T_{MED}$  should be calculated using the daily SAIDI values for the five prior years. If five years of data are not available, then utilities should use what is available until five years are accumulated.

---

### SECTION 4: SYSTEM RELIABILITY RESULTS

#### Excluding MED

SAIDI	4.1	94.30
SAIFI	4.2	1.042
CAIDI	4.3	90.48

---

#### Including MED (Optional)

SAIDI	4.4	3823.19
SAIFI	4.5	2.246
CAIDI	4.6	1701.88

---

#### Notes:

- 1) All duration indices (SAIDI, CAIDI) are to be reported in units of minutes.
  - 2) Reports are due on the first business day of April of each year
  - 3) Reports cover the calendar year ending in the December before the reports are due.
  - 4) IEEE 1366 (latest version) is used to define SAIDI, SAIFI, CAIDI, and  $T_{MED}$
-

# KENTUCKY PUBLIC SERVICE COMMISSION

## Electric Distribution Utility Annual Reliability Report

### SECTION 5: OUTAGE CAUSE CATEGORIES

Excluding MED

CAUSE CODE DESCRIPTION	SAIDI VALUE	CAUSE CODE DESCRIPTION	SAIFI VALUE
Animal	5.1.1 7.35	Animal	5.2.1 0.104
Construction	5.1.2 0.96	Construction	5.2.2 0.026
Lightning	5.1.3 9.78	Lightning	5.2.3 0.119
Non-Company	5.1.4 2.14	Non-Company	5.2.4 0.033
Unknown	5.1.5 20.34	Unknown	5.2.5 0.254
Overload	5.1.6 0.94	Overload	5.2.6 0.009
Planned Work	5.1.7 5.72	Planned Work	5.2.7 0.083
Trees	5.1.8 20.33	Trees	5.2.8 0.136
Utility Equip	5.1.9 19.79	Utility Equip	5.2.9 0.205
Vehicle	5.1.10 6.93	Vehicle	5.2.10 0.073

### SECTION 6: WORST PERFORMING CIRCUITS

CIRCUIT IDENTIFIER	SAIDI VALUE	MAJOR OUTAGE CATEGORY
DU0002	6.1.1 851.53	Vehicle
AL1444	6.1.2 659.44	Vehicle
HI1472	6.1.3 578.23	Lightning
BR1186	6.1.4 573.72	Trees
SW1184	6.1.5 552.40	Trees
BB1103	6.1.6 502.34	Trees
SP1115	6.1.7 479.92	Vehicle
LS1247	6.1.8 409.64	Trees
OX1278	6.1.9 367.00	Utility Equipment
WS1305	6.1.10 358.37	Vehicle

CIRCUIT IDENTIFIER	SAIFI VALUE	MAJOR OUTAGE CATEGORY
SW1184	6.2.1 5.210	Trees
CA1304	6.2.2 5.001	Animal, Lightning
FV1477	6.2.3 4.927	Utility Equipment
AK1290	6.2.4 4.278	Planned Work
HB1145	6.2.5 4.010	Lightning
BR1186	6.2.6 3.901	Utility Equipment
FL1497	6.2.7 3.704	Utility Equipment
BB1103	6.2.8 3.532	Trees
WP1104	6.2.9 3.524	Trees
SM1366	6.2.10 3.409	Utility Equipment

# KENTUCKY PUBLIC SERVICE COMMISSION

## Electric Distribution Utility Annual Reliability Report

---

Additional pages may be attached as necessary

### SECTION 7: VEGETATION MANAGEMENT PLAN REVIEW

The Companies' Vegetation Management Plan was submitted December 19, 2007 and is referenced to the Reliability Report submitted April 1, 2008. The Distribution Vegetation Management Program encompasses right of way maintenance for Louisville Gas and Electric Company and Kentucky Utilities Company (referred to as the "Companies"). The program is centralized and managed by a Forestry Manager and nine company Utility Arborists. All are certified arborists by the International Society of Arboriculture.

The Companies' plan is to maintain a proactive trim cycle while balancing the reactive needs of worst performing circuits. The Companies' goal is to maintain an average trim cycle of five years or less. The effectiveness of the plan is evaluated by the cycle, system performance as measured by system SAIDI, SAIFI, and CAIDI, and customer feedback as measured by satisfaction surveys.

#### **Effectiveness of the program:**

Cycle - 4.56 years.

Tree SAIDI - 20.33 minutes

Tree SAIFI - .136

Tree CAIDI - 149 minutes

Customer satisfaction in Power Quality and Reliability has been stable over the past three years.

Power Quality and Reliability is one of the highest ranking components of the study.

The routine trim schedule, mid cycle, herbicide, and worst performing circuits plans were completed as planned.

#### **Adjustments made to the Vegetation Management Plan in 2008 included:**

- 1). On September 14, 2008, Hurricane Ike caused significant damage to the system. Tree crews worked through December 31, 2008 to remove damaged trees and limbs that were of imminent risk to system reliability.
- 2). The Companies reduced from five to four professional tree contractor companies (Nelson, Phillips, Townsend and Wright) to improve efficiency in the plan.

#### **Changes to be implemented in 2009:**

- 1). Increased focus on hazard tree removals of off right of way trees.
- 2). Change mid cycle from spring to summer to more readily identify dead limbs and trees.
- 3). The Ice Storm of January 27, 2009, caused significant damage to the trees across the system. Tree crews were employed to remove damaged trees and limbs that were of imminent risk to system reliability.

# KENTUCKY PUBLIC SERVICE COMMISSION

## SECTION 8: UTILITY COMMENTS

The Institute of Electrical and Electronic Engineers (IEEE) standard number IEEE 1366 - 2003 has been used to define the terms in the reliability report, including the criteria for omitting events classified as major event days. The 2008 data is reported by the IEEE exclusion definition. Data is not available based on the IEEE rule prior to 2005.

On September 14, 2008, Hurricane Ike caused significant damage to the system. Due to the catastrophic nature of Hurricane Ike, a total of eleven days was included as a major event.

# KENTUCKY PUBLIC SERVICE COMMISSION

## Electric Distribution Utility Annual Reliability Report

---

### SECTION 1: CONTACT INFORMATION

UTILITY NAME	1.1	Kentucky Utilities Company
REPORT PREPARED BY	1.2	Nelson Maynard, Director Reliability
E-MAIL ADDRESS OF PREPARER	1.3	nelson.maynard@eon-us.com
PHONE NUMBER OF PREPARER	1.4	859-367-1107

---

### SECTION 2: REPORT YEAR

CALENDAR YEAR OF REPORT	2.1	2008
-------------------------	-----	------

---

### SECTION 3: MAJOR EVENT DAYS

$T_{MED}$	3.1	3.602
FIRST DATE USED TO DETERMINE $T_{MED}$	3.2	1-Jan-05
LAST DATE USED TO DETERMINE $T_{MED}$	3.3	31-Dec-07
NUMBER OF MED IN REPORT YEAR	3.4	18

---

NOTE: Per IEEE 1366  $T_{MED}$  should be calculated using the daily SAIDI values for the five prior years. If five years of data are not available, then utilities should use what is available until five years are accumulated.

---

### SECTION 4: SYSTEM RELIABILITY RESULTS

Excluding MED

SAIDI	4.1	73.28
SAIFI	4.2	0.748
CAIDI	4.3	97.92

---

Including MED (Optional)

SAIDI	4.4	438.74
SAIFI	4.5	1.195
CAIDI	4.6	367.00

---

#### Notes:

- 1) All duration indices (SAIDI, CAIDI) are to be reported in units of minutes.
  - 2) Reports are due on the first business day of April of each year
  - 3) Reports cover the calendar year ending in the December before the reports are due.
  - 4) IEEE 1366 (latest version) is used to define SAIDI, SAIFI, CAIDI, and  $T_{MED}$
-

# KENTUCKY PUBLIC SERVICE COMMISSION

## Electric Distribution Utility Annual Reliability Report

### SECTION 5: OUTAGE CAUSE CATEGORIES

Excluding MED

CAUSE CODE DESCRIPTION	SAIDI VALUE	CAUSE CODE DESCRIPTION	SAIFI VALUE
Animal	5.1.1 3.83	Animal	5.2.1 0.060
Construction	5.1.2 0.75	Construction	5.2.2 0.016
Lightning	5.1.3 9.26	Lightning	5.2.3 0.088
Non-Company	5.1.4 1.23	Non-Company	5.2.4 0.018
Unknown	5.1.5 11.62	Unknown	5.2.5 0.119
Overload	5.1.6 3.71	Overload	5.2.6 0.043
Planned Work	5.1.7 3.50	Planned Work	5.2.7 0.054
Trees	5.1.8 22.06	Trees	5.2.8 0.158
Utility Equip	5.1.9 12.03	Utility Equip	5.2.9 0.140
Vehicle	5.1.10 5.30	Vehicle	5.2.10 0.054

### SECTION 6: WORST PERFORMING CIRCUITS

CIRCUIT IDENTIFIER	SAIDI VALUE	MAJOR OUTAGE CATEGORY
0643	6.1.1 1310.3	Utility Equipment
0333	6.1.2 1220.7	Non-Company
0311	6.1.3 1072.4	Trees
0467	6.1.4 827.1	Non-Company
1712	6.1.5 794.0	Lightning
0423	6.1.6 772.6	Trees
0007	6.1.7 750.9	Overload
1633	6.1.8 747.4	Utility Equipment
0458	6.1.9 717.1	Trees
0948	6.1.10 667.4	Trees

CIRCUIT IDENTIFIER	SAIFI VALUE	MAJOR OUTAGE CATEGORY
0311	6.2.1 9.170	Trees
0333	6.2.2 5.556	Non-Company
0254	6.2.3 5.450	Utility Equipment
0201	6.2.4 5.264	Overload
0306	6.2.5 5.000	Non-Company
0423	6.2.6 4.812	Trees
4450	6.2.7 4.811	Overload
4340	6.2.8 4.472	Planned Work
0515	6.2.9 4.437	Lightning
1633	6.2.10 4.253	Overload

# KENTUCKY PUBLIC SERVICE COMMISSION

---

## Electric Distribution Utility Annual Reliability Report

---

Additional pages may be attached as necessary

### SECTION 7: VEGETATION MANAGEMENT PLAN REVIEW

The Companies' Vegetation Management Plan was submitted December 19, 2007 and is referenced to the Reliability report submitted April 1, 2008. The Distribution Vegetation Management Program encompasses right of way maintenance for Louisville Gas and Electric Company and Kentucky Utilities Company (referred to as the "Companies"). The program is centralized and managed by a Forestry Manager and nine company Utility Arborists. All are certified arborists by the International Society of Arboriculture.

The Companies' plan is to maintain a proactive trim cycle while balancing the reactive needs of worst performing circuits. The Companies' goal is to maintain an average trim cycle of five years or less. The effectiveness of the plan is evaluated by the cycle, system performance as measured by system SAIDI, SAIFI, and CAIDI, and customer feedback as measured by satisfaction surveys.

#### **Effectiveness of the program:**

Cycle - 4.56 years.

Tree SAIDI - 22.06 minutes

Tree SAIFI - .158

Tree CAIDI - 139 minutes

Customer satisfaction in Power Quality and Reliability has been stable over the past three years. Power Quality and Reliability is one of the highest ranking components of the study.

The routine trim schedule, mid cycle, herbicide, and worst performing circuits plans were completed as planned.

#### **Adjustments made to the Vegetation Management Plan in 2008 included:**

- 1). On September 14, 2008, Hurricane Ike caused significant damage to the system. Tree crews worked through December 31, 2008 to remove damaged trees and limbs that were of imminent risk to system reliability.
- 2). The Companies reduced from five to four professional tree contractor companies (Nelson, Phillips, Townsend and Wright) to improve efficiency in the plan.

#### **Changes to be implemented in 2009:**

- 1). Increased focus on hazard tree removals of off right of way trees.
- 2). Change mid cycle from spring to summer to more readily identify dead limbs and trees.
- 3). The Ice Storm of January 27, 2009, caused significant damage to the trees across the system. Tree crews were employed to remove damaged trees and limbs that were of imminent risk to system reliability.

# KENTUCKY PUBLIC SERVICE COMMISSION

## SECTION 8: UTILITY COMMENTS

The Institute of Electrical and Electronic Engineers (IEEE) standard number IEEE 1366 - 2003 has been used to define the terms in the reliability report, including the criteria for omitting events classified as major event days. The 2008 data is reported by the IEEE exclusion definition. Data is not available based on the IEEE rule prior to 2005.

On September 14, 2008, Hurricane Ike caused significant damage to the system. Due to the catastrophic nature of Hurricane Ike, a total of 11 days was included as a major event.