



Kimra Cole
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Kentucky Public Service Commission
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MAR 26 2012

PUBLIC SERVICE
COMMISSION

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March 26, 2012

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 Ms. Cole:

Enclosed please find Louisville Gas and Electric Company's and Kentucky Utilities Company's 2011 Annual Reliability Report pursuant to the Commission's Order dated October 26, 2007 in the above referenced 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	<u>Louisville Gas and Electric Company</u>
REPORT PREPARED BY	1.2	<u>Nelson Maynard, Director Reliability</u>
E-MAIL ADDRESS OF PREPARER	1.3	<u>nelson.maynard@lge-ku.com</u>
PHONE NUMBER OF PREPARER	1.4	<u>859-367-1107</u>

SECTION 2: REPORT YEAR

CALENDAR YEAR OF REPORT	2.1	<u>2011</u>
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SECTION 3: MAJOR EVENT DAYS

T_{MED}	3.1	<u>5.966</u>
FIRST DATE USED TO DETERMINE T_{MED}	3.2	<u>1-Jan-06</u>
LAST DATE USED TO DETERMINE T_{MED}	3.3	<u>31-Dec-10</u>
NUMBER OF MED IN REPORT YEAR	3.4	<u>9</u>

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	<u>94.36</u>
SAIFI	4.2	<u>1.046</u>
CAIDI	4.3	<u>90.25</u>

Including MED (Optional)

SAIDI	4.4	<u>604.93</u>
SAIFI	4.5	<u>1.667</u>
CAIDI	4.6	<u>362.92</u>

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 5.46	Animal	5.2.1 0.081
Construction	5.1.2 0.62	Construction	5.2.2 0.024
Lightning	5.1.3 8.26	Lightning	5.2.3 0.069
Non-Company	5.1.4 2.35	Non-Company	5.2.4 0.023
Unknown	5.1.5 13.23	Unknown	5.2.5 0.184
Overload	5.1.6 0.26	Overload	5.2.6 0.009
Planned Work	5.1.7 10.00	Planned Work	5.2.7 0.144
Trees	5.1.8 21.95	Trees	5.2.8 0.143
Utility Equip	5.1.9 26.82	Utility Equip	5.2.9 0.311
Vehicle	5.1.10 5.42	Vehicle	5.2.10 0.058

SECTION 6: WORST PERFORMING CIRCUITS

CIRCUIT IDENTIFIER	SAIDI VALUE	MAJOR OUTAGE CATEGORY
BB1103	6.1.1 728.14	Trees
TA1106	6.1.2 723.37	Utility Equipment
ET1421	6.1.3 711.94	Utility Equipment
HC1434	6.1.4 640.00	Lightning
FV1477	6.1.5 563.08	Utility Equipment
LS1247	6.1.6 541.72	Trees
HI1472	6.1.7 538.96	Utility Equipment
AL1440	6.1.8 524.00	Lightning
SP3302	6.1.9 470.40	Planned Work
HB1148	6.1.10 436.04	Trees

CIRCUIT IDENTIFIER	SAIFI VALUE	MAJOR OUTAGE CATEGORY
TA1106	6.2.1 8.057	Utility Equipment
WP1104	6.2.2 6.231	Utility Equipment
CY1484	6.2.3 6.222	Utility Equipment
FV1477	6.2.4 5.808	Utility Equipment
PR1390	6.2.5 5.078	Utility Equipment
ET1421	6.2.6 4.765	Utility Equipment
HB1148	6.2.7 4.287	Utility Equipment
BB1103	6.2.8 4.029	Trees
ML1284	6.2.9 3.814	Lightning
AK1290	6.2.10 3.754	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.

Effectiveness of the program:

LG&E/ KU Tree Cycle - 4.82 years.
LG&E Tree SAIDI - 21.95 minutes
LG&E Tree SAIFI - 0.143
LG&E Tree CAIDI - 153.50 minutes

The hazard tree program, mid cycle, herbicide, and worst performing circuits were completed as planned. The overall routine trim cycle extended in 2011 compared to 2010 due to an increased focus on tree removals. Tree related SAIDI and SAIFI increased in 2011 compared to 2010 due to weather related events and growth related to the record rainfall year as reported by the National Weather service. A total of 4,390 trees were removed by the Enhanced Hazard Tree program.

Adjustments made to the tree plan in 2011 included:

Implemented an Enhanced Hazard Tree Removal Program to increased focus on hazard tree removals for off right of way trees.

Changes to be implemented in 2012:

Continue to work the hazard tree plan.

SECTION 8: UTILITY COMMENTS

There were 9 major event days in 2011. SAIDI and SAIFI improved in 2011 compared to 2010 due to decreases related to lightning and utility equipment failures. Non-weather related SAIDI and SAIFI improved in 2011 compared to 2010 due to less equipment failure. CAIDI increased in 2011 compared to 2010 due to a greater system improvement in SAIFI over the improvement in SAIDI. The top 10 Worst Performing Circuits for SAIDI and SAIFI have been evaluated for deficiencies. Corrective action was either completed in 2011 or planned and scheduled to be completed in 2012.

KENTUCKY PUBLIC SERVICE COMMISSION

Electric Distribution Utility Annual Reliability Report

SECTION 1: CONTACT INFORMATION

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

SECTION 2: REPORT YEAR

CALENDAR YEAR OF REPORT	2.1	<u>2011</u>
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SECTION 3: MAJOR EVENT DAYS

T_{MED}	3.1	<u>6.711</u>
FIRST DATE USED TO DETERMINE T_{MED}	3.2	<u>1-Jan-06</u>
LAST DATE USED TO DETERMINE T_{MED}	3.3	<u>31-Dec-10</u>
NUMBER OF MED IN REPORT YEAR	3.4	<u>3</u>

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	<u>100.55</u>
SAIFI	4.2	<u>0.989</u>
CAIDI	4.3	<u>101.63</u>

Including MED (Optional)

SAIDI	4.4	<u>148.14</u>
SAIFI	4.5	<u>1.085</u>
CAIDI	4.6	<u>136.59</u>

Notes:

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- 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 4.46	Animal	5.2.1 0.051
Construction	5.1.2 0.91	Construction	5.2.2 0.016
Lightning	5.1.3 15.94	Lightning	5.2.3 0.172
Non-Company	5.1.4 2.16	Non-Company	5.2.4 0.019
Unknown	5.1.5 12.16	Unknown	5.2.5 0.140
Overload	5.1.6 0.64	Overload	5.2.6 0.009
Planned Work	5.1.7 7.31	Planned Work	5.2.7 0.097
Trees	5.1.8 32.74	Trees	5.2.8 0.210
Utility Equip	5.1.9 18.66	Utility Equip	5.2.9 0.220
Vehicle	5.1.10 5.57	Vehicle	5.2.10 0.055

SECTION 6: WORST PERFORMING CIRCUITS

CIRCUIT IDENTIFIER	SAIDI VALUE	MAJOR OUTAGE CATEGORY
1509	6.1.1 2863.23	Equipment failure
0360	6.1.2 1494.91	Trees
4331	6.1.3 1358.11	Planned Work
0488	6.1.4 1302.09	Trees
0304	6.1.5 1152.57	Trees
0324	6.1.6 1066.56	Trees
0481	6.1.7 889.89	Planned Work
0390	6.1.8 856.90	Trees
0491	6.1.9 763.93	Utility Equipment
2230	6.1.10 754.79	Trees

CIRCUIT IDENTIFIER	SAIFI VALUE	MAJOR OUTAGE CATEGORY
0390	6.2.1 6.832	Trees
0819	6.2.2 6.090	Trees and Planned Work
0365	6.2.3 5.643	Trees
0413	6.2.4 5.562	Trees
4331	6.2.5 5.444	Planned Work
0837	6.2.6 5.268	Planned Work
0426	6.2.7 5.011	Trees and Planned work
0841	6.2.8 5.000	Planned Work
2440	6.2.9 4.888	Trees
0324	6.2.10 4.878	Non-Company and Planned work

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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.

Effectiveness of the program:

KU/LG&E Tree Cycle - 4.82 years.
KU (Kentucky) Tree SAIDI - 32.74 minutes
KU (Kentucky) Tree SAIFI - 0.210
KU (Kentucky) Tree CAIDI - 155.91 minutes

The hazard tree program, mid cycle, herbicide, and worst performing circuits were completed as planned. The overall routine trim cycle extended in 2011 compared to 2010 due to an increased focus on tree removals. Tree related SAIDI and SAIFI increased in 2011 compared to 2010 due to weather events (off right of way trees) and growth related to the record rainfall year as reported by the National Weather service. A total of 20,161 trees were removed by the Enhanced Hazard Tree program.

Adjustments made to the tree plan in 2011 included:

Implemented an Enhanced Hazard Tree Removal Program to increased focus on hazard tree removals for off right of way trees.

Changes to be implemented in 2012:

Continue to work the hazard tree plan.

SECTION 8: UTILITY COMMENTS

There were 3 major event days in 2011. SAIDI and SAIFI increased in 2011 compared to 2010 due to an increase in weather related events - lightning and off right of way tree outages. Non-weather related SAIDI and SAIFI improved in 2011 compared to 2010. CAIDI increased in 2011 compared to 2010 due to a greater increase in SAIDI over the increase in SAIFI. The top 10 Worst Performing Circuits for SAIDI and SAIFI have been evaluated for deficiencies. Corrective action was either completed in 2011 or planned and scheduled to be completed in 2012.