



**Kansas City Power & Light Company  
2015 Reliability Performance Report**

Annual reporting completed pursuant to 4 CSR 240-23.010

April 29, 2016

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#### **4 CSR 240.23.010 (1)(A), (B), (C), (D), and (3) – Reliability Statistics 2015**

**Table 1: 2015 KCP&L Reliability Indices**

Total Customers (Meter Counts)		279,406
Adjusted	SAIFI	0.678
	SAIDI	61.01
	CAIDI	90.00
	CAIFI	1.29
Unadjusted	SAIFI	1.23
	SAIDI	452.82
	CAIDI	368.09
	CAIFI	1.37

16-May, 17-May, 26-Jun, 27-Jun, 28-Jun, 1-Jul, 2-Jul, 6-Jul, 7-Jul, 20-Jul, 11-Nov, 12-Nov, are excluded from the KCP&L adjusted 2015 statistics per IEEE 1366 in conjunction with storm begin and end dates.

#### **4 CSR 240-23.010 (6), (7) – Highest 5% SAIFI Circuits Assessment**

Patrols and repairs were completed in the 3<sup>rd</sup> and 4<sup>th</sup> Quarters of 2015. For circuits where an analysis is being completed, a systematic patrol plan is developed based on identified outage causes. When and where feasible, repairs are made during the initial patrol. Additionally, KCP&L Engineering worked with an external provider to perform predictive diagnostic testing (Ultrasound) on some recurring problems and issued corrective action jobs scheduled for completion during the 2<sup>nd</sup> Quarter of 2016. Tree patrols were also performed where indicated and, spot trimming was completed as needed. Other maintenance, modifications or upgrades not completed during the initial patrol will be completed by the 2<sup>nd</sup> Quarter of 2016. Table 2 lists circuits identified as having the highest 5% of adjusted SAIFI statistics in 2015, as set forth in 4 CSR 240.23.010 (6).

**Table 2: Highest 5% SAIFI Circuits**

<b>Centers</b>	<b>Circuit</b>	<b>Substation</b>	<b>Action Plan</b>	<b>SAIFI</b>	<b>SAIDI</b>
FM	1576	15	Crew rebuilt part of the circuit where significant damage had occurred due to weather event, trimmed trees, varmint proofed equipment and installed line arresters.	4.00	111.93
FM	7931	79	Contractor ultrasound tested and patrolled the circuit and crew replaced damaged equipment.	3.98	1,148.90
DOD	6131	61	Engineering reviewed fuse sizes and coordination and crew patrolled circuit, replaced equipment damage caused from multiple storm events	3.93	376.52
FM	9622	96	Contractor ultrasound tested and patrolled the circuit and crew replaced damaged equipment.	3.91	591.86
DOD	6122	61	Contractor ultrasound tested and patrolled circuit and crew replaced damaged equipment, varmint proofed and trimmed trees on this circuit.	3.67	2,443.48
FM	7491	74	Contractor ultrasound tested and patrolled the circuit and crew replaced damaged equipment.	3.59	1,971.49
DOD	13421 (7572)	75	Crew repaired underground feeder cables, trimmed trees, patrolled circuit and replaced damaged equipment.	3.40	215.50
DOD	3552	35	Crew patrolled circuit and replaced damaged equipment, replaced pole and trimmed trees.	3.34	218.11
DOD	2352	23	Crew patrolled circuit and replaced damaged equipment, replaced conductor on lateral and trimmed trees.	3.31	1,019.66
DOD	4813	48	Crew patrolled the circuit, trimmed trees on laterals and replaced damaged equipment.	3.15	317.76

**Table 2: Highest 5% SAIFI Circuits Continued**

<b>Centers</b>	<b>Circuit</b>	<b>Substation</b>	<b>Action Plan</b>	<b>SAIFI</b>	<b>SAIDI</b>
DOD	3132	31	Crew patrolled circuit, trimmed trees, varmint proofed equipment and installed line arresters.	3.06	1,683.19
DOD	7573	75	Contractor ultrasound tested and patrolled the circuit. Crew replaced damaged equipment, replaced damaged conductors on two laterals and trimmed trees.	3.02	622.38
DOD	4823	48	Crew personnel repaired underground feeder cable and crew patrolled circuit, trimmed trees and replaced damaged equipment.	2.98	498.51
NLND	1142	11	Crew repaired underground secondary cables, patrolled circuit and replaced damaged equipment. Engineering analyzed fuse coordination in the circuit and recommended fuse size modifications.	2.93	412.82
FM	5382	53	Contractor ultrasound tested and patrolled the circuit. Crew replaced damaged equipment, discovered from the testing, trimmed trees and replaced conductor lateral.	2.73	642.58
DOD	3022	30	Contractor ultrasound tested and patrolled circuit and replaced damaged equipment, trimmed trees and replaced conductors on two laterals	2.61	1,360.63
DOD	6111	61	Ultrasound testing was conducted by contractor. Crew patrolled the circuit and replaced damaged equipment, trimmed trees and repaired conductors.	2.46	2047.64
FM	1568	15	Crew rebuilt circuit where there was significant damage due to weather event.	2.27	925.23
DOD	4854	48	Crew patrolled circuit, trimmed trees, and replaced damaged equipment.	2.25	71.48
EDST	10431	104	Crew patrolled circuit and replaced damaged equipment and installed line arresters.	2.24	300.20
FM	5371	53	Contractor ultrasound tested and patrolled circuit and crew replaced damaged equipment and trimmed trees.	2.23	1,860.54
FM	7401	74	Crew patrolled circuit and replaced damaged equipment, installed line arresters and replaced conductor on lateral	2.20	393.92
FM	479	89	Engineering reviewed fuse coordination on the circuit and crew installed additional fuses to prevent nuisance lightning events. Crew patrolled and replaced damaged equipment and installed additional line arresters.	2.07	717.98
FM	578	89	Engineering reviewed fuse coordination on the circuit and crew installed additional fuses to prevent nuisance lightning events. Crew patrolled and replaced damaged equipment and installed additional line arresters.	2.01	850.62
FM	5381	53	Contractor ultrasound tested and patrolled the circuit and crew replaced damaged equipment and installed additional line arresters	2.00	1,746.17

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#### **4 CSR 240-23.010 (8) – Multi-Year Worst Performing Circuit Reporting**

The referenced rule requires the plan and a schedule to lower SAIFI metrics on circuits that are listed on the highest 5% SAIFI list for two out of three of the preceding years. Table 3 reflects the action plans implemented and completed in 2015 to lower the SAIFI metric for these circuits. Additional patrols and root-cause analysis, where required, will be completed in 2<sup>nd</sup> Quarter of 2016.

**Table 3: Multi-Year Worst Performing Circuit Report**

<b>Year</b>	<b>Centers</b>	<b>Circuits</b>	<b>Substation</b>	<b>Action Plan</b>	<b>SAIFI</b>	<b>SAIDI</b>
2014 2015	FM	5382	53	Contractor ultrasound tested and patrolled the circuit. Crew replaced damaged equipment discovered from the testing, trimmed trees and replaced conductor lateral.	2.73	642.58
2013 2014	EDST	5912	59	Results from previous year replacements and repairs were to trim trees, varmint proof equipment, repair overhead conductors, replace poles, replace fuse mounts, and replace and install new line arresters, and relocate existing recloser.	1.2	76.42
2013 2014	DOD	6151	61	Results from previous year replacements and repairs were to trim trees, varmint proof equipment, repair overhead conductors, replace poles, replace fuse mounts, and replace and install new line arresters.	0.37	277.74
2013 2014 2015	FM	5381	53	Contractor ultrasound tested and patrolled the circuit and crew replaced damaged equipment and installed additional line arresters.	2.00	1,746.17
2013 2014 2015	FM	5371	53	Contractor ultrasound tested and patrolled circuit and crew replaced damaged equipment and trimmed trees.	2.23	1,860.54