



**Kansas City Power & Light Company
2016 Reliability Performance Report**

Annual reporting completed pursuant to 4 CSR 240-23.010

April 28, 2017

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4 CSR 240.23.010 (1)(A), (B), (C), (D), and (3) – Reliability Statistics 2016

Table 1: 2016 KCP&L Reliability Indices

Total Customers (Meter Counts)		281,034
Adjusted	SAIFI	0.72
	SAIDI	62.19
	CAIDI	86.99
	CAIFI	1.04
Unadjusted	SAIFI	0.94
	SAIDI	123.91
	CAIDI	132.54
	CAIFI	1.05

Excludes the following 2016 storm dates from the normalized data: April 26th-27th, May 26th- 27th, July 7th, July 12th - 13th.

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

Patrols and repairs were completed in the 3rd and 4th Quarters of 2016. 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 1st and 2nd Quarters of 2017. 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 2nd Quarter of 2017. Table 2 lists circuits identified as having the highest 5% of adjusted SAIFI statistics in 2016, as set forth in 4 CSR 240.23.010 (6).

Table 2: Highest 5% SAIFI Circuits

Centers	Circuit	Substation	Action Plan	SAIFI	SAIDI
FM	8613	86	Trees trimmed, 26 maintenance items repaired	4.54	480.14
NLND	4952	49	Trees trimmed 2017, Underground cables and equipment failures repaired; 45 maintenance items repaired, and rebuilt a lateral	4.26	620.67
NLND	9812	98	Trees trimmed 2016, Six maintenance items repaired	4.20	476.35
EDST	2611	26	Lightning related equipment failures repaired	2.61	313.70
DOD	7563	75	Equipment failures repaired	2.57	138.90
FM	5338	53	Pole and overhead wire failures repaired	2.50	298.81
FM	7473	74	Trees trimmed and equipment failed and repaired	2.37	131.58
NLND	9813	98	Cable and Switchgear failures repaired	2.30	174.95
DOD	3012	30	Vegetation trees trimmed 2016, equipment failures due to tree related outage events	2.12	333.52
DOD	6113	61	Overload due to circuit reconfiguration, circuit now restored to normal.	2.02	273.91
FM	2472	24	Underground cable failures repaired, trees trimmed 2016	2.00	334.00
EDST	11611	116	Trees trimmed, 152 maintenance items repaired	1.61	192.24
NLND	7142	71	Underground switchgear and cable failures repaired	1.52	72.79
DOD	2333	23	Overhead primary damaged and jumper repaired, trees trimmed 2017, 22 maintenance items repaired.	1.47	126.19
NLND	2741	27	Trees and vegetation trimmed 2016, equipment failures due to tree related outage events and repaired	1.43	83.96
EDST	6011	60	Conductor damaged repaired, trimmed trees, installed varmint guards, and 134 maintenance items repaired	1.36	105.83
FM	9614	96	Cable and equipment repaired	1.12	43.61
FM	5381	53	Remedial action was completed in 2015 and 2016; no further action was required in 2017 based upon anticipated improvement from 2016 efforts, and SAIFI improvement already realized from 2014 to 2016.	1.12	81.07
FM	5382	53	Remedial action was completed in 2015 and 2016; no further action was required in 2017 based upon anticipated improvement from 2016 efforts, and SAIFI improvement already realized from 2014 to 2016.	1.12	183.11

Excludes the following 2016 storm dates from the normalized data: April 26th-27th, May 26th- 27th, July 7th, July 12th - 13th.

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 2016 to lower the SAIFI metric for these circuits.

Table 3: Multi-Year Worst Performing Circuit Report

Year	Centers	Circuits	Substation	Action Plan	SAIFI	SAIDI
2014 2015	FM	5371	53	No Action Required, based on performance; circuit was no longer WPC in 2016.	0.42	58.08
2014 2015 2016	FM	5381	53	Remedial action was completed in 2015 and 2016; no further action was required in 2017 based upon anticipated improvement from 2016 efforts, and SAIFI improvement already realized from 2014 to 2016.	1.12	81.07
2014 2015 2016	FM	5382	53	Remedial action was completed in 2015 and 2016; no further action was required in 2017 based upon anticipated improvement from 2016 efforts, and SAIFI improvement already realized from 2014-2016.	1.12	183.11