



**KCP&L Greater Missouri Operations Company
2017 Reliability Performance Report**

Annual reporting completed pursuant to 4 CSR 240-23.010

April 30, 2018

Table of Contents

4 CSR 240.23.010 (1), (3), (4) – Reliability Statistics 2017	2
Table 1: KCP&L Greater Missouri Operations Company Reliability Indices	2
4 CSR 240-23.010 (6), (7) – Highest 5% SAIFI Circuits Assessment	2
Table 2: Highest 5% SAIFI Circuit	3-4
4 CSR 240-23.010 (8) - Multi Year Worst Performing Circuit Reporting.....	5
Table 3: Multi-Year Worst Performing Circuit Report	5

4 CSR 240.23.010 (1)(A), (B), (C), (D), and (3) – Reliability Statistics 2017

Table 1: KCP&L Greater Missouri Operations Co. Reliability Indices

2017		GMO
Total Customers (Meter Counts)		314,788
Adjusted	SAIFI	0.70
	SAIDI	67.50
	CAIDI	96.05
	CAIFI	2.31
Unadjusted	SAIFI	1.21
	SAIDI	265.60
	CAIDI	219.83
	CAIFI	1.40

Excludes the following 2017 storm dates from the normalized data:

March 6 – 7, April 29 – 30, May 18 – 19, June 16 – 18, 29 – 30, July 22 – 24, 26 – 27, August 21 – 22, October 14 – 15.

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

Patrols and repairs were completed in the 3rd and 4th Quarters of 2017. 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 2018. 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 2nd Quarter 2018. Table 2 lists circuits identified as having the highest 5% of adjusted SAIFI statistics in 2017, as set forth in 4 CSR 240.23.010 (6).

Table 2: Highest 5% SAIFI Circuits

Center	Circuit	Substation	Action Plan	SAIFI	SAIDI
HNRT	28511	285	Replaced a steel pole at substation and several wood poles in feeder, replaced conductor and jumpers, installed varmint guard on equipment, and patrolled for tree issues and trimmed hotspots	5.68	598.15
SDL	22611	226	Feeder was ultrasound tested and replaced broken equipment; installed new recloser and varmint guard equipment.	3.68	296.00
WBRG	26111	261	Feeder was ultrasound tested and replaced broken equipment; replaced fuse mounts, installed varmint guard on equipment, and patrolled for tree issues and trimmed hotspots.	3.61	256.01
BLSP	21411	214	Feeder was ultrasound tested and replaced broken equipment; installed varmint guard on riser poles at substation, replaced fuse mounts, and patrolled for tree issues, and trimmed hotspots.	3.59	215.29
WBRG	22811	228	Feeder was ultrasound tested and replaced broken equipment; performed extensive tree trimming as part of the 2017 mid-cycle schedule, replaced overhead conductors, and installed varmint guard on equipment.	3.17	323.71
BLTN	23912	239	Feeder was ultrasound tested and replaced broken equipment; reviewed fuse coordination on feeder, installed inline arresters, replaced bad conductors found during feeder patrols, installed varmint guards all equipment, and performed extensive tree trimming activity as part of 2017 mid-year schedule.	2.90	332.15
SDL	34142	341	Feeder was ultrasound tested and replaced broken equipment; replace rotten pole, installed varmint guard on equipment, and patrolled for tree issues and tree trimmed hotspots.	2.64	248.62
BLSP	35111	351	Feeder was ultrasound tested and replaced broken equipment; replaced fuse mounts, repaired underground cable fault, and installed varmint guard on equipment.	1.85	118.5
PLCT	32111	321	Feeder was ultrasound tested and replaced broken equipment; installed new automated reclosers and fault current indicators, replaced underground terminator and fuse mounts.	1.57	122.54
BLSP	35112	351	Feeder was ultrasound tested and replaced broken equipment; replaced fuse mounts, replaced capacitor bank and crossarms, and performed extensive tree trimming as part of 2017 mid-cycle schedule.	1.56	145.37
PLCT	31922	319	Feeder was ultrasound tested and replaced broken equipment; replaced recloser, bad terminator, fuse mounts, and replaced suspension bells and insulators, installed 7 new automated reclosers and line fault current indicators.	1.46	120.29

Center	Circuit	Substation	Action Plan	SAIFI	SAIDI
MRYV	41721	417	Feeder was ultrasound tested and replaced broken equipment; replaced poles, installed varmint guard on equipment, and patrolled for tree issues and trimmed hotspots.	1.40	168.16
HNRT	31311	313	Feeder was ultrasound tested and replaced broken equipment; replaced fuse mounts and pole, and patrolled for tree issues and trimmed hotspots.	1.32	108.76
BLTN	23911	239	Feeder was ultrasound tested and replaced broken equipment; replaced crossarm and pole, installed varmint guard on equipment, and patrolled for tree issues and trimmed hotspots.	1.20	145.86
HNRT	33321	333	Feeder was ultrasound tested and replaced broken equipment; repaired cable fault, replaced three transformers, and installed varmint guard on equipment.	1.01	27.74
BLSP	31111	311	Feeder was ultrasound tested and replaced broken equipment; replaced insulators, conductors, overhead switch, and fuse mounts.	0.86	109.77
STJO	38211	382	Feeder was ultrasound tested and replaced broken equipment; replaced fuse mounts, installed varmint guard on equipment, and replaced regulator and several transformers.	0.58	99.99
BLTN	24812	248	Feeder was ultrasound tested and replaced broken equipment; replaced poles, installed varmint guard on equipment, and patrolled for tree issues and trimmed hotspots.	0.53	71.34
BLSP	32513	325	Feeder was ultrasound tested and replaced broken equipment; repaired cable fault, replaced crossarm, installed varmint guard on equipment, and patrolled for tree issues and trimmed hotspots.	0.51	32.8
BLTN	20611	206	Feeder was ultrasound tested and replaced broken equipment; installed varmint guard on equipment and inline arresters, and patrolled circuit for tree issues and trimmed hotspots.	0.50	57.37
BLTN	24811	248	Feeder was ultrasound tested and replaced broken equipment; replaced fuse mounts, and installed varmint guard on equipment, and patrolled circuit for tree issues and trimmed hotspots.	0.43	29.87

Excludes the following 2017 storm dates from the normalized data: March 6th – 7th, April 29th-30th, May 18th-19th, June 16th-18th, June 29th -30th, July 22nd-24th, July 26th-27th, August 21st -22nd, October 14th, - 15th

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

The referenced rule requires the plan and 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 2017 to lower the SAIFI metric for these circuits. Additional patrols and root-cause analysis, where required, will be completed in 2nd Quarter 2018.

Table 3: Multi-Year Worst Performing Circuit Report

Year	Centers	Circuits	Substations	Action Plan	SAIFI	SAIDI
2015 2017	St. Joseph	38211	382	Feeder was ultrasound tested and repaired broken equipment; replaced fuse mounts, installed varmint guard on equipment, and replaced regulator and several overhead transformers.	0.58	99.99
2015 2016	Blue Springs	21423	214	Patrolled circuit, trimmed trees, installed lightning arresters, and repaired underground cables and equipment	1.27	98.46
2016 2017	MRYV	41721	417	Feeder was ultrasound tested and repaired broken equipment; replaced poles, installed varmint guard on equipment, and patrolled for tree issues	1.40	168.16
2015 2016 2017	Platte City	32111	321	Feeder was ultrasound tested and repaired broken equipment; installed new automated reclosers and inline fault current indicators, replaced underground terminator and fuse mount.	1.57	122.54