



**Evergy Missouri Metro 2019
Reliability Performance Report**

Annual reporting completed pursuant to 20 CSR 4240-23.010

April 30, 2020

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20 CSR 4240-23.010 (1)(A), (B), (C), (D), and (3) – Reliability Statistics 2019

Table 1: 2019 Missouri Metro Reliability Indices

Total Customers (Meter Counts)		297,681
Adjusted	SAIFI	0.977
	SAIDI	91.38
	CAIDI	93.52
	CAIFI	1.44
Unadjusted	SAIFI	1.562
	SAIDI	658.97
	CAIDI	414.70
	CAIFI	1.87

Excludes the following 2019 storm dates from the normalized data: January 11-14th, May 20th & 24th, June 21-22nd, July 10th & 21st, August 10th and 21st, and September 27th

20 CSR 4240-23.010 (6), (7) – Highest 5% SAIFI Circuits Assessment

Patrols and repairs planned to complete in the 2nd and 3rd Quarters of 2020. For circuits where analysis is required, a systematic patrol plan is developed based on identified outage causes. When and where feasible, repairs made during the initial patrol. Additionally, Evergy 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 2nd and 3rd Quarters of 2020. Tree patrols performed where indicated, and spot trimming performed as needed. Other maintenance, modifications, or upgrades not completed during the initial patrol plans to complete them by the end of the 3rd Quarter of 2020. Table 2 lists circuits identified as having the highest 5% of adjusted SAIFI statistics in 2019, as outlined in 20 CSR 4240-23.010 (6).

Table 2: Highest 5% SAIFI Circuits

Centers	Circuit	Substation	Action Plan	SAIFI	SAIDI
EDST	83101	R1	Outages related to vegetation and winds; ultrasound test the feeder, replaced equipment.	4.46	322.72
DOD	5644	56	Outages related to vegetation and equipment failures; ultrasound test the feeder and replaced failed equipment	3.96	342.02
EDST	3611	36	Outages related to vegetation and failed equipment; ultrasound test the feeder, trimmed trees and replaced failed equipment	3.91	471.59
NLND	7832	78	Outages related to vegetation and equipment failures; ultrasound test the feeder, trimmed trees and replaced Ug feeder cable	3.85	444.62
FM	2481	24	Outages related to Ug. feeder cable and Ug. switchgear failure; ultrasound test the feeder, replaced failed equipment	3.44	314.79
NLND	7824	78	Outages related to weather, wind, and varmints; ultrasound test the feeder, installed varmint protections and replaced failed equipment	3.31	276.27
DOD	2334	23	Outages related weather, vegetation, varmints, and lightning; installed repaired conductors, installed inline arrestors, and replaced failed equipment	3.25	289.71
EDST	95102	R2	Outage related to high winds; ultrasound the test feeder and replaced failed equipment	3.20	120.04
NLND	1022	10	Outages related to vegetation and equip failure; ultrasound test the feeder, required tree trimming and replaced fail equipment	3.01	546.2

Centers	Circuit	Substation	Action Plan	SAIFI	SAIDI
DOD	3114	31	Outages related to weather and vegetation; ultrasound test the feeder, varmints, and lightning; ultrasound test the feeder, rebuild sections of overhead feeders along state line road	3.01	416.93
EDST	127203	R3	Outages related to equipment failures and wind; ultrasound test the feeder and replace failed equipment	2.92	116.29
NLND	4912	49	Outages related to lightning, vegetation, and cable failure; ultrasound test the feeder, replaced lightning arresters, trimmed trees and replaced Ug. Cable	2.43	288.03
DOD	3012	30	Outages related to vegetation, OH primary conductors, and equipment failures; ultrasound test the feeder, trees trimmed and replaced conductors	2.40	406.34
NLND	1111	11	Outages related to equipment failures and lightning; ultrasound test the feeder, replaced failed equipment and patrol the feeder for other deficiencies	2.39	271.02
DOD	2374	27	Outages related to vegetation, ice storm, and equipment failures: ultrasound test the feeder, removed vegetation and replaced equipment	2.35	671.29
NLND	9813	98	Outages related to equipment failures and varmints; installed varmint guards and replaced Ug. feeder cables	2.31	142.99
EDST	3413	34	Outages related to vegetation and lightning; ultrasound test the feeder, replaced failed equipment and trimmed trees	2.19	347.22
DOD	4823	48	Outages related to vegetation, equipment failures; trimmed trees and replaced failed equipment	2.09	180.52

Centers	Circuit	Substation	Action Plan	SAIFI	SAIDI
FM	7491	74	Outages related to equipment failures and vegetation; ultrasound test the feeder, required tree trimming, replaced Ug. feeder cable, and sleeved primary overhead conductors	2.09	529.24
DOD	3152	31	Outages related to weather, icing and wind, vegetation, and lightning; ultrasound test the feeder, replaced failed equipment and overhead conductors	1.79	185.01
FM	5381	53	Outages related to lightning; ultrasound the feeder, equipment failures on transformer stations and one lateral	0.69	293.32
EDST	4311	43	Outages related to lightning and equipment failures on transformer stations and one lateral; ultrasound test the feeder,	0.67	56.65
DOD	7584	75	Outage related to equipment failures; ultrasound test the feeder, replaced failing equipment	0.32	27.98
NLND	4953	49	Outages related to equipment failures; ultrasound test the feeder, replaced failed equipment	0.06	10.51

Excludes the following 2019 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 21th- 22nd, October 14th-15th

20 CSR 4240-23.010 (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 2019 to lower the SAIFI metric for these circuits. Additional patrols and root-cause analysis, where required, plan to complete in 3rd Quarter 2020.

Table 3: Multi-Year Worst Performing Circuit Report

Year	Centers	Circuits	Substation	Action Plan	SAIFI	SAIDI
2018 2019	NLND	1111	11	Outages related to equipment failures and lightning; ultrasound the feeder, replaced failed equipment and patrol the feeder for other deficiencies	2.39	271.02
2018 2019	NLND	2334	23	Outages related to weather, wind, and varmints; ultrasound test the feeder, installed varmint protections and replaced failed equipment	3.25	289.71
2018 2019	DOD	3012	30	Outages related to vegetation, OH primary conductors, and equipment failures; ultrasound test the feeder, trees trimmed and conductors sleeved	2.40	406.34
2018 2019	EDST	4311	43	Outages related to lightning and equipment failures on transformer stations and one lateral; ultrasound test the feeder,	0.32	27.98
2015 2018 2019	FM	5381	53	Outages related to lightning; ultrasound the feeder, equipment failures on transformer stations and one lateral	0.69	293.32
2018 2019	DOD	5644	56	Outages related to vegetation and equipment failures; ultrasound test the feeder and replaced failed equipment	3.96	324.03
2014 2015 2018 2019	FM	7491	74	Outages related to equipment failures and vegetation; ultrasound test the feeder, required tree trimming, replaced Ug. feeder cable, and sleeved primary overhead conductors	2.09	529.24