



May 1, 2019

via e-filing EXPRESS

Ms. Lynn M. Retz, Secretary
Kansas Corporation Commission
1500 S.W. Arrowhead Road
Topeka, Kansas 66604-4027

Re: Docket No. 17-EPDE-393-CPL

Dear Ms. Retz:

Enclosed for filing is the 2018 Kansas Reliability Performance Report ("Report"), of The Empire District Electric Company ("Empire"). The Report is being filed pursuant to (1) Section II.A.vi. (paragraphs 50-56) and Appendix A of the Stipulation and Agreement approved by the Kansas Corporation Commission ("Commission") in its Order dated December 22, 2016, in Docket No. 16-EPDE-410-ACQ.

Sincerely,

Jill Schwartz
Senior Manager, Rates and Regulatory Affairs

Enclosure

Cc: Thomas J. Connors
David W. Nikel
Shonda Rabb
Della Smith
Jake Fisher
Dustin L. Kirk
Amber Smith
Cole Bailey
Michael Neeley
Sarah Knowlton



Liberty Utilities®
EMPIRE DISTRICT

**The Empire District Electric Company
A Liberty Utilities Company**

**2018 Reliability Performance Report
16-EPDE-410-ACQ
17-EPDE-393-CPL**

**Sam McGarrah
Director, System Performance
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Joplin, MO 64802
417-625-6526
Sam.McGarrah@libertyutilities.com**

The Empire District Electric Company, a Liberty Utilities company (“Liberty-Empire”) performs routine reliability activities for all customers. Transmission and distribution assets are inspected on a scheduled basis. Defects identified during inspections are scheduled for remediation. Vegetation clearing is also performed on a routine, scheduled basis.

Liberty-Empire also identifies distribution circuits each year for reliability improvements. Each identified circuit is assessed by performing a “walk-through” of the circuit identifying visible defects and collecting engineering data to evaluate additional sectionalization and protective device coordination. Liberty-Empire has made reliability improvements to 8 of the 23 Kansas circuits since the inception of the program in 2010.

Liberty-Empire has also implemented Operation Toughen Up as a 10-year plan for system enhancements to improve electric service reliability. Empire has completed 7 years of the program to date with Kansas customers benefitting by additional transmission line construction, substation protection upgrades, and distribution rebuilds totaling approximately \$20M through June 30, 2018.

2018 Reliability Indices for Kansas Facilities

Kansas Indices Including Major Events

	SAIDI	SAIFI	CAIDI
January	1.14	0.016	70.55
February	0.78	0.011	71.59
March	0.48	0.007	64.81
April	0.75	0.010	72.73
May	9.63	0.138	70.00
June	25.99	0.198	130.94
July	4.48	0.047	96.01
August	19.27	0.370	52.05
September	1.38	0.020	68.98
October	4.02	0.059	68.56
November	31.01	0.290	107.05
December	7.53	0.086	87.71

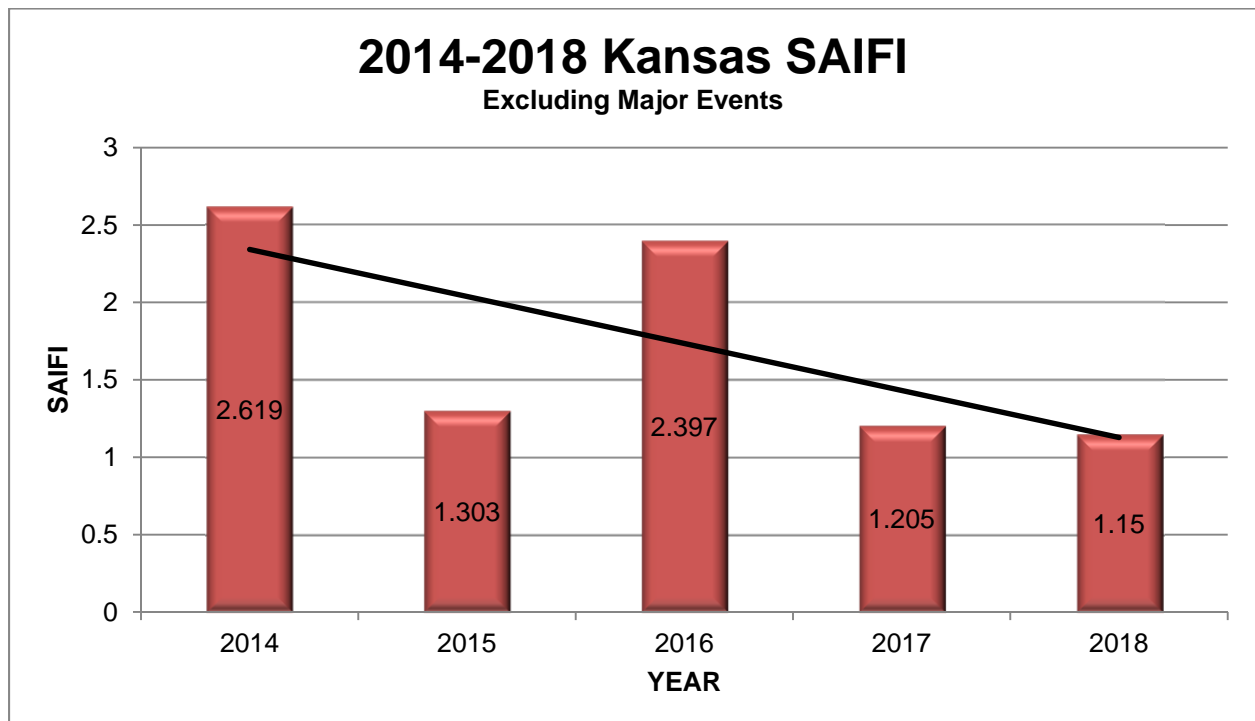
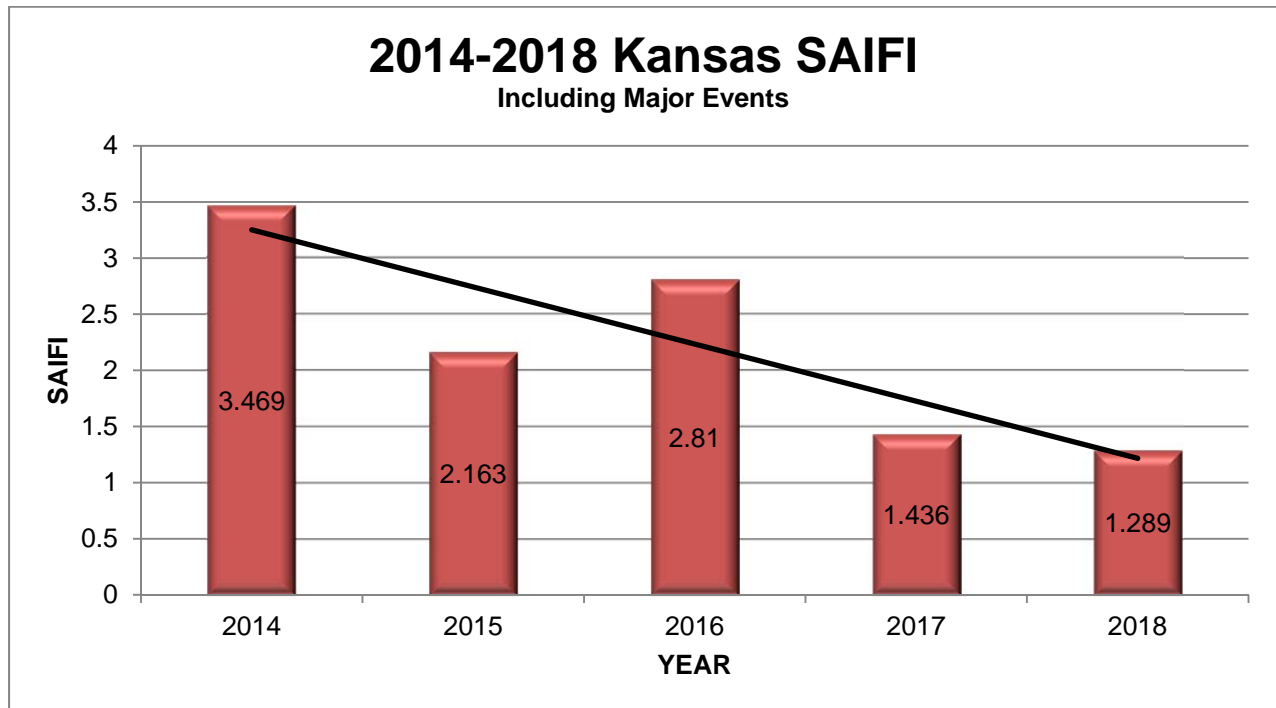
Kansas Indices Excluding Major Events

	SAIDI	SAIFI	CAIDI
January	1.14	0.016	70.55
February	0.78	0.011	71.59
March	0.48	0.007	64.81
April	0.75	0.010	72.73
May	9.63	0.138	70.00
June	2.73	0.058	47.49
July	4.48	0.047	96.01
August	19.27	0.370	52.05
September	1.38	0.020	68.98
October	4.02	0.059	68.56
November	31.01	0.290	107.05
December	7.53	0.086	87.71

THE EMPIRE DISTRICT ELECTRIC COMPANY									
CUSTOMER OUTAGE STATISTICS AND INDICES FOR KANSAS									
1/1/2018 to 12/31/2018									
INCLUDING MAJOR EVENT DAYS									
CIRCUIT NUMBER	NUMBER OF OUTAGES	OUTAGE HOURS REPORTED	CUSTOMERS AFFECTED	CUSTOMER OUTAGE MINUTES	TOTAL CUST. ON AFFECTED CIRCUIT	SAIFI	CAIDI	SAIDI	ASAI
2711	14	17.86	693	53,712	262	2.649	77.51	205.34	0.99961
2782	5	5.79	64	4,179	441	0.145	65.3	9.48	0.99998
2783	2	3.58	547	89704	103	5.311	163.99	870.91	0.99834
2784	16	26.9	1214	182,097	995	1.22	150	183.01	0.99965
2821	4	3.74	25	2,339	460	0.054	93.56	5.09	0.99999
2822	7	9.3	514	51,972	252	2.04	101.11	206.24	0.99961
2823	7	9.17	575	23,904	521	1.104	41.57	45.88	0.99991
2824	19	25.15	348	19,698	1,098	0.317	56.6	17.95	0.99997
2911	53	93.98	1,777	122,540	1,008	1.764	68.96	121.61	0.99977
2913	16	24.37	2,176	203,173	891	2.443	93.37	228.1	0.99957
2914	19	19.09	1,349	90,836	575	2.347	67.34	158.04	0.9997
3391	20	29.01	138	10,666	531	0.26	77.29	20.08	0.99996
3774	12	16.73	22	1,864	81	0.272	84.73	23.01	0.99996
3775	5	6.61	1,926	202,064	100	19.26	104.91	2020.64	0.99616
4061	26	27.15	1,072	37,482	752	1.426	34.96	49.86	0.99991
4062	21	25.17	768	26,281	532	1.445	34.22	49.43	0.99991
4251	3	4.22	18	1,086	195	0.092	60.33	5.58	0.99999
4772	25	24.89	289	16,980	990	0.292	58.75	17.15	0.99997
6601	35	47.2	662	72,328	826	0.801	109.26	87.54	0.99983
6602	8	10.68	179	11,040	516	0.347	61.68	21.4	0.99996
	NUMBER OF OUTAGES	OUTAGE HOURS REPORTED	CUSTOMERS AFFECTED	CUSTOMER OUTAGE MINUTES	TOTAL CUSTOMERS SERVED	SAIFI	CAIDI	SAIDI	ASAI
Total:	317	430.59	14,356	1,223,945	11,140	1.289	85.26	109.87	0.99979

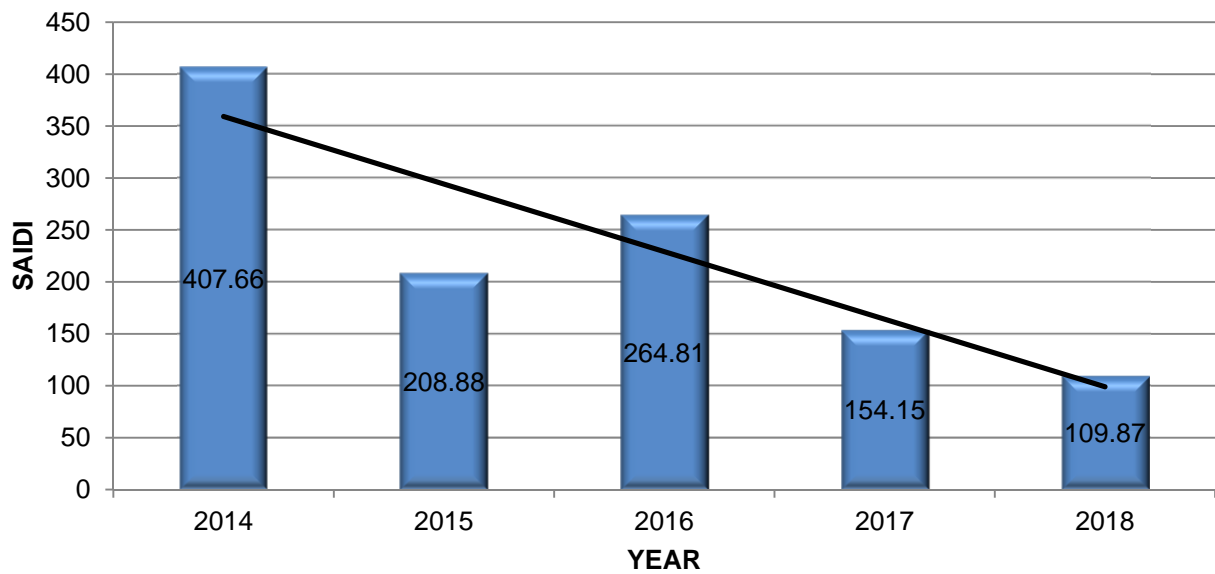
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2711	14	17.86	693	53,712	262	2.649	77.51	205.34	0.99961
2782	5	5.79	64	4,179	441	0.145	65.3	9.48	0.99998
2783	1	0.85	1	51	103	0.01	51	0.5	0.99999
2784	15	24.15	220	17,541	995	0.221	79.73	17.63	0.99997
2821	4	3.74	25	2,339	460	0.054	93.56	5.09	0.99999
2822	7	9.3	514	51,972	252	2.04	101.11	206.24	0.99961
2823	7	9.17	575	23,904	521	1.104	41.57	45.88	0.99991
2824	19	25.15	348	19,698	1,098	0.317	56.6	17.95	0.99997
2911	52	93.13	1,776	122,489	1,008	1.763	68.97	121.56	0.99977
2913	16	24.37	2,176	203,173	891	2.443	93.37	228.1	0.99956
2914	19	19.09	1,349	90,836	575	2.347	67.34	158.04	0.99997
3391	20	29.01	138	10,666	531	0.26	77.29	20.08	0.99996
3774	12	16.73	22	1,864	81	0.272	84.73	23.01	0.99996
3775	5	6.61	1,926	202,064	100	19.26	104.91	2020.64	0.99614
4061	26	27.15	1,072	37,482	752	1.426	34.96	49.86	0.99999
4062	21	25.17	768	26,281	532	1.445	34.22	49.43	0.99991
4251	3	4.22	18	1,086	195	0.092	60.33	5.58	0.99999
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6602	8	10.68	179	11,040	516	0.347	61.68	21.4	0.99996
	NUMBER OF OUTAGES	OUTAGE HOURS REPORTED	CUSTOMERS AFFECTED	CUSTOMER OUTAGE MINUTES	TOTAL CUSTOMERS SERVED	SAIFI	CAIDI	SAIDI	ASAI
Total:	314	424.26	12,815	969,685	11,140	1.15	75.67	87.05	0.99983

2014-2018 Reliability Indices for Kansas Facilities



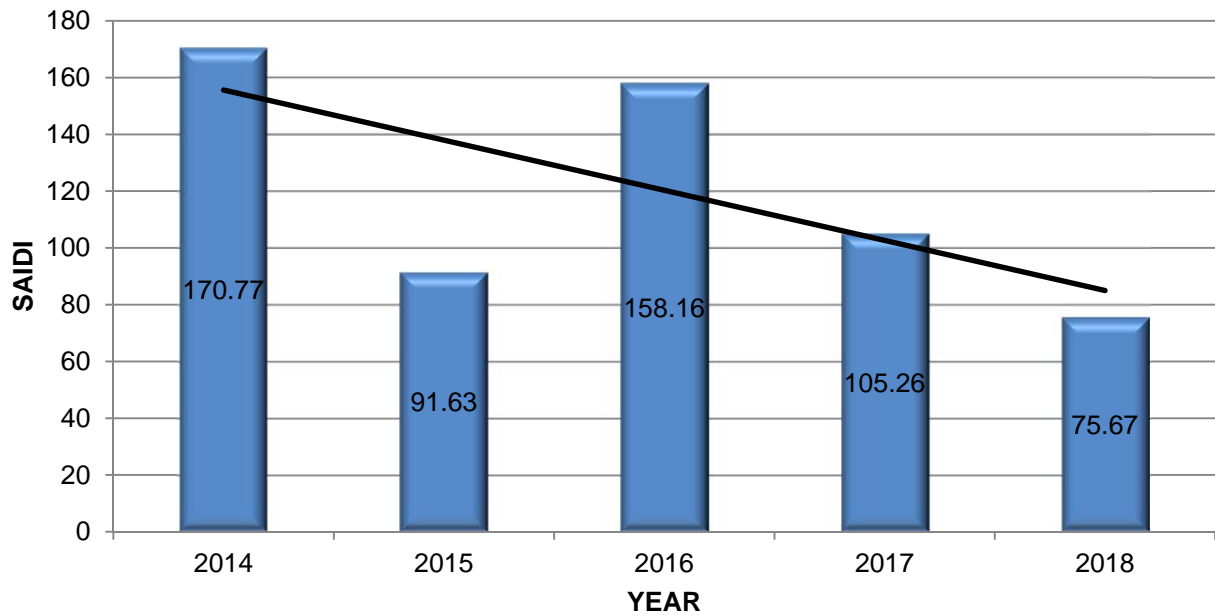
2014-2018 Kansas SAIDI

Including Major Events



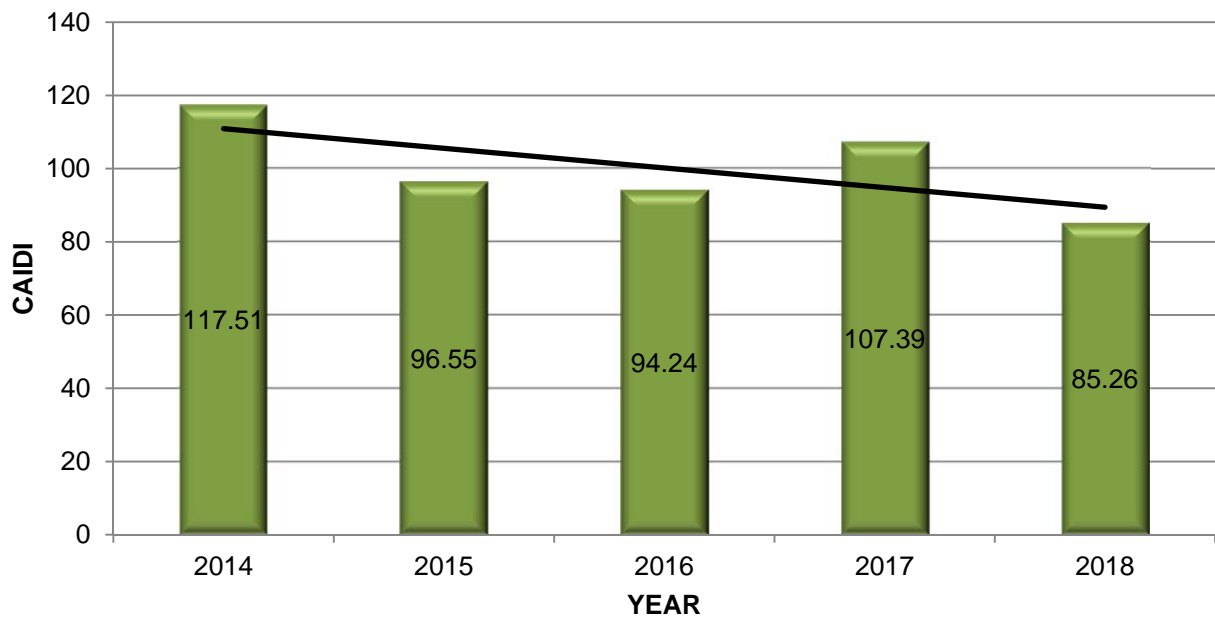
2014-2018 Kansas SAIDI

Excluding Major Events



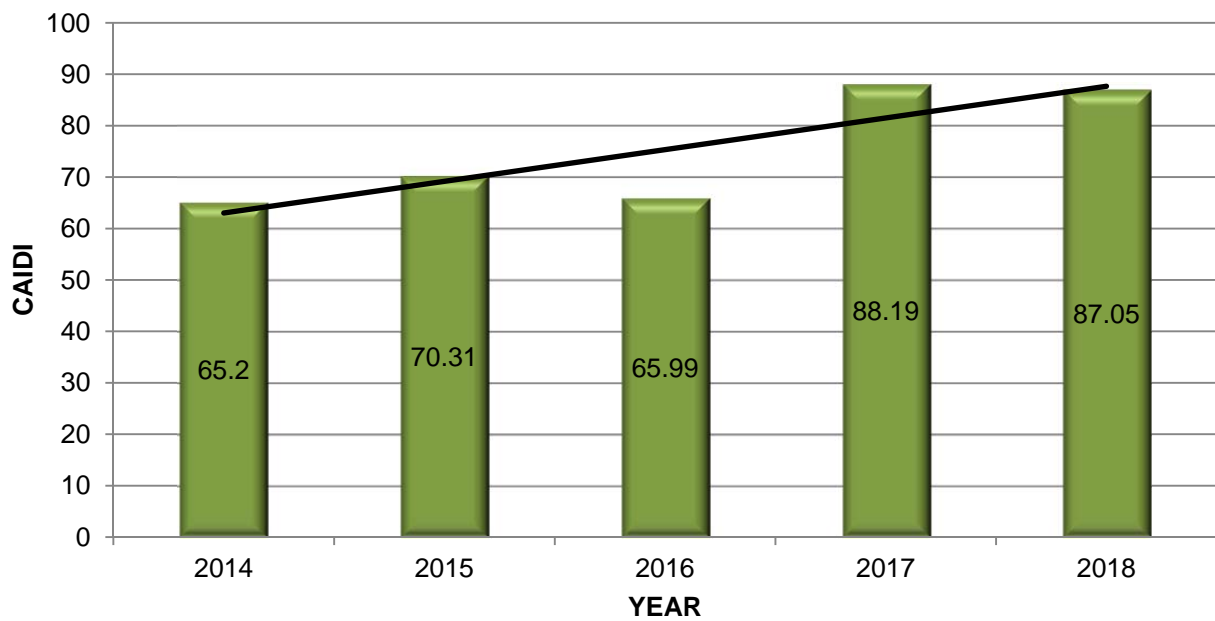
2014-2018 Kansas CAIDI

Including Major Events



2014-2018 Kansas CAIDI

Excluding Major Events



Major Event Report

June 22, 2018

On June 22, 2018 a semi-trailer truck pulling a raised end dump trailer struck an energized phase conductor of the transmission line feeding the #278 – Galena substation. The semi-trailer truck was assisting a crew performing road repairs on the Spring River Bridge. The resulting fault was cleared by the transmission breakers at the adjacent substations and manual transmission switching was required at the #278 – Galena substation to isolate the fault and restore customers.

Interruption Cause:	Acts of Man
Date of Interruption:	6/22/18
Regional Location:	Area 212 – Galena, Kansas
Customer % without power:	13.9% (1,547 out of 11,140)
Outage Start:	6/22/18 3:44 PM
Last Outage Restored:	6/22/18 6:30 PM

Total Kansas System Outages

Outage Cause Description	Customer Minutes Interrupted	Customers Interrupted	Number of Outages
ACTS OF MAN	259,814	1,636	11
BIRDS	30,160	284	13
CONDUCTOR TROUBLE	304,315	2,729	6
CONNECTOR TROUBLE	13,306	100	15
CUTOUT FAILURE	50	1	1
INSULATOR FAILURE DEAD END	1,768	22	1
LIGHTNING	29,995	371	56
LIGHTNING ARRESTOR	4,074	55	2
MAINTENANCE	82	1	1
METER DAMAGED	98	1	1
OTHER ANIMALS	1,187	2	2
OVERLOAD	1,651	9	2
POLES HIT	22,649	426	5
SNOW OR ICE	48	1	1
SQUIRRELS	61,388	900	56
STRUCTURE FAILURE	41,764	339	16
SUBSTATION - ACTS OF MAN	8	1	1
SUBSTATION – OTHER	39,760	522	2
TRANSFORMER FAILURE	6176	93	9
TRANSMISSION – LIGHTNING	194,797	3,859	6
TREES IN SERVICE LINES	1,007	9	9
UNKNOWN	129,613	1,973	64
VEGETATION – FALL IN PRIMARY	1,926	47	4
VEGETATION – FALL IN SECONDARY	16	1	1
VEGETATION – GROW IN PRIMARY	2,097	36	7
WIND	76,452	941	28

2018 Worst Performing Circuits

Worst Performing Circuits - System 2018 Measured by SAIFI									
Circuit Number	Substation	Location	Customer Outage Minutes	Customers Affected	Total Cust. On Affected Circuits	SAIFI	SAIDI	CAIDI	Previous Year Worst Performing Circuit?
2711	271	Baxter Springs – West H. T.	53,712	693	262	2.649	205.34	77.51	No

Worst Performing Circuit Assessment

No multi-year worst performing circuits identified.