



Jackson Purchase Energy
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Visit our Web Site www.JPEnergy.com

April 18, 2019

Ms. Gwen R. Pinson
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40601

RECEIVED

APR 25 2019

**PUBLIC SERVICE
COMMISSION**

RE: 2018 Annual Distribution Reliability Report

Executive Director Pinson:

Please find enclosed Jackson Purchase Energy Corporation's 2018 Annual Distribution Reliability Report as outlined by Administrative Case 2011-00450.

If you have any questions please contact me at 270-442-7321

Sincerely,

A handwritten signature in blue ink that reads "Scott Ribble".

Scott Ribble
Jackson Purchase Energy Corporation

enclosures



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The power of human connections

KENTUCKY PUBLIC SERVICE COMMISSION

APR 25 2019

PUBLIC SERVICE COMMISSION

Electric Distribution Utility Annual Reliability Report

SECTION 1: CONTACT INFORMATION

UTILITY NAME	1.1	Jackson Purchase Energy Corporation
REPORT PREPARED BY	1.2	Scott Ribble
E-MAIL ADDRESS OF PREPARER	1.3	scott.ribble@jpecnergy.com
PHONE NUMBER OF PREPARER	1.4	270-442-7321

SECTION 2: REPORT YEAR

CALENDAR YEAR OF REPORT	2.1	2018
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SECTION 3: MAJOR EVENT DAYS

TMED	3.1	8.38
FIRST DATE USED TO DETERMINE TMED	3.2	1/1/2013
LAST DATE USED TO DETERMINE TMED	3.3	12/31/2017
NUMBER OF MED IN REPORT YEAR	3.4	3

NOTE: Per IEEE 1366 TMED should be calculated using the daily SAIDI values for the five prior years. If five years of data are not available, then utilities should use what is available until five years are accumulated.

SECTION 4: SYSTEM RELIABILITY RESULTS

System - Wide Information

Total Customers	29752	Total Circuits	91
Excluding MED			
5 Year Average		Reporting Year	
SAIDI	111.2	SAIDI	122.816
SAIFI	1.2	SAIFI	1.2121
Including MED			
5 Year Average		Reporting Year	
SAIDI	295.41	SAIDI	488.576
SAIFI	1.61	SAIFI	1.7691

SECTION 5: CIRCUIT REPORTING

Electric Distribution Utility Annual Reliability Report

Additional pages may be attached as necessary

SECTION 7: VEGETATION MANAGEMENT PLAN REVIEW

JPEC has established a four (4) year cycle on right-of-way maintenance and employs a contractor to perform that cycle clearing. JPEC also employs contract crews that handles mid-cycle trimming. We have experienced over the last couple of years an increased tree problem from "danger trees" (trees outside of right-of-way) falling into our ROW and tearing down lines and poles. We are working with our members and contractors to identify those danger trees for removal. In addition to JPEC's contractors, JPEC construction and maintenance crews have the tools and ability to recognize hazards and trim trees away from the line as they perform their duties.

SECTION 8: UTILITY COMMENTS

Overall, 2018 was a good year in comparison to previous years. JPEC is only reporting 36 circuits compared to 43 last year. JPEC continues to focus on identification and replacement of structures in an effort to harden JPEC system which is proven in the reporting number of circuits. JPEC continues to work with BREC to increase reliability on the transmission system by installing radio controlled switches. New technologies are being tested that will put more information into the hands of crews. This new technology will make reporting restoration times closer to real time. New switching points are being installed to isolate outages and return as many members back on as possible.

Substation Name Burna
Substation Number 14
Circuit Name Hampton
Circuit Number 14214
Circuit Location 14214-Hampton
Total Circuit Length (Miles) 12.8
Customer Count 88.156164
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 125.8937983
Reporting Year (SAIDI) 91.42866
Circuit 5 Year Average (SAIFI) 0.548738064
Reporting Year (SAIFI) 1.179724653

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	20.00%
190 Other planned	0%
300 Material or equipment fault/failure	20.00%
310 Installation fault	20.00%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	20.00%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	20.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 Circuit is scheduled to be trimmed in 2019

Substation Name Burna
Substation Number 14
Circuit Name Salem
Circuit Number 14244
Circuit Location 14244-Salem
Total Circuit Length (Miles) 52.5
Customer Count 319.189041
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 52.54842344
Reporting Year (SAIDI) 200.918552
Circuit 5 Year Average (SAIFI) 0.25202639
Reporting Year (SAIFI) 2.656732817

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	15.79%
110 Maintenance	5.26%
190 Other planned	0%
300 Material or equipment fault/failure	10.53%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	21.05%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	10.53%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	15.79%
590 Weather, other	5.26%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	15.79%

100%

Corrective Action Plan
 Circuit is scheduled to be trimmed in 2019

Substation Name Burna
Substation Number 14
Circuit Name Smithland
Circuit Number 14254
Circuit Location 14254-Smithland
Total Circuit Length (Miles) 69.97
Customer Count 334.512328
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 173.001958
Reporting Year (SAIDI) 454.222422
Circuit 5 Year Average (SAIFI) 1.312565493
Reporting Year (SAIFI) 2.884796521

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	4.35%
110 Maintenance	4.35%
190 Other planned	0%
300 Material or equipment fault/failure	4.35%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	8.70%
430 Tree failure from overhang or dead tree without ice/snow	30.43%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	13.04%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	4.35%
630 Squirrel	4.35%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	8.70%
999 Cause unknown	17.39%

100%

Corrective Action Plan
 Circuit is scheduled to be trimmed in 2019

Substation Name Ragland
Substation Number 19
Circuit Name Ragland
Circuit Number 19224
Circuit Location 19224-Ragland
Total Circuit Length (Miles) 31.2
Customer Count 235.506849
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 31.79470109
Reporting Year (SAIDI) 426.989705
Circuit 5 Year Average (SAIFI) 0.41873375
Reporting Year (SAIFI) 1.184678922

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	9.09%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	9.09%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	36.36%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	9.09%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	18.18%
690 Animal, other	0%
700 Customer-caused	9.09%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	9.09%
999 Cause unknown	0%

100%

Corrective Action Plan
 No corrective action planned at this time.

Substation Name Kevil
Substation Number 28
Circuit Name Hobbs Rd
Circuit Number 28214
Circuit Location 28214-Hobbs Rd
Total Circuit Length (Miles) 53.6
Customer Count 554.599447
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 221.7035739
Reporting Year (SAIDI) 130.532045
Circuit 5 Year Average (SAIFI) 1.650629182
Reporting Year (SAIFI) 2.156511346

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	7.41%
110 Maintenance	22.22%
190 Other planned	0%
300 Material or equipment fault/failure	3.70%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	3.70%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	7.41%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	3.70%
600 Animal/bird	3.70%
630 Squirrel	18.52%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	3.70%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	14.81%
999 Cause unknown	11.11%

100%

Corrective Action Plan

Weather events and a broken pole due to a car accident affected all members on this circuit multiple times

Substation Name Smithland
Substation Number 32
Circuit Name Tiline
Circuit Number 3202
Circuit Location 3202-Tiline
Total Circuit Length (Miles) 109.1
Customer Count 561.654794
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 429.1170746
Reporting Year (SAIDI) 427.958601
Circuit 5 Year Average (SAIFI) 3.5621153
Reporting Year (SAIFI) 3.7745605

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	13.95%
110 Maintenance	6.98%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	23.26%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	6.98%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	6.98%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	2.33%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	2.33%
800 Other	9.30%
999 Cause unknown	27.91%

100%

Corrective Action Plan
 Circuit was trimmed at the end of 2018.

Substation Name Smithland
Substation Number 32
Circuit Name Mitchell Store
Circuit Number 3204
Circuit Location 3204-Mitchell Store
Total Circuit Length (Miles) 56.3
Customer Count 378.205479
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 318.1126652
Reporting Year (SAIDI) 444.700062
Circuit 5 Year Average (SAIFI) 2.018211927
Reporting Year (SAIFI) 3.989894604

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	5.26%
110 Maintenance	15.79%
190 Other planned	0%
300 Material or equipment fault/failure	5.26%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	5.26%
430 Tree failure from overhang or dead tree without ice/snow	31.58%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	5.26%
510 Wind, not trees	5.26%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	5.26%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	5.26%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	10.53%
999 Cause unknown	5.26%

100%

Corrective Action Plan
 Circuit was trimmed at the end of 2018.

Substation Name Little Union
Substation Number 39
Circuit Name Airport
Circuit Number 3901
Circuit Location 3901-Airport
Total Circuit Length (Miles) 35.9
Customer Count 542.642857
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SAIDI) 107.0982868
Reporting Year (SAIDI) 179.20258
Circuit 5 Year Average (SAIFI) 1.324333296
Reporting Year (SAIFI) 2.6094511

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	23.33%
110 Maintenance	26.67%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	10.00%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	3.33%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	3.33%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	10.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	6.67%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	3.33%
999 Cause unknown	13.33%

100%

Corrective Action Plan
 Multiple vehicle accidents. No corrective action planned at this time.

Substation Name Husbands Road
Substation Number 40
Circuit Name Husbands Rd
Circuit Number 40224
Circuit Location 40224-Husbands Rd
Total Circuit Length (Miles) 44.28
Customer Count 771.509589
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 88.13324134
Reporting Year (SAIDI) 186.849265
Circuit 5 Year Average (SAIFI) 1.028607212
Reporting Year (SAIFI) 1.37263362

Outage Causes	
Cause	Percentage (%)
000 Power supply	4.17%
100 Construction	12.50%
110 Maintenance	25.00%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	4.17%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	8.33%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	4.17%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	8.33%
630 Squirrel	12.50%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	8.33%
999 Cause unknown	12.50%
100%	

Corrective Action Plan
 Power supply outage affected all members on the circuit.

Substation Name Husbands Road
Substation Number 40
Circuit Name Lydon Rd
Circuit Number 40234
Circuit Location 40234-Lydon Rd
Total Circuit Length (Miles) 31.88
Customer Count 454.161643
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 35.33015942
Reporting Year (SAIDI) 158.492028
Circuit 5 Year Average (SAIFI) 0.512191553
Reporting Year (SAIFI) 1.171389104

Outage Causes	
Cause	Percentage (%)
000 Power supply	4.00%
100 Construction	20.00%
110 Maintenance	20.00%
190 Other planned	0%
300 Material or equipment fault/failure	4.00%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	8.00%
430 Tree failure from overhang or dead tree without ice/snow	12.00%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	12.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	12.00%
999 Cause unknown	8.00%

100%

Corrective Action Plan
 Power supply outage affected all members on the circuit.

Substation Name Husbands Road
Substation Number 40
Circuit Name Clarkline Rd
Circuit Number 40244
Circuit Location 40244-Clarkline Rd
Total Circuit Length (Miles) 26.46
Customer Count 299.906849
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 50.38904437
Reporting Year (SAIDI) 140.770376
Circuit 5 Year Average (SAIFI) 0.561490312
Reporting Year (SAIFI) 1.110344766

Outage Causes	
Cause	Percentage (%)
000 Power supply	9.09%
100 Construction	18.18%
110 Maintenance	18.18%
190 Other planned	0%
300 Material or equipment fault/failure	9.09%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	9.09%
430 Tree failure from overhang or dead tree without ice/snow	9.09%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	9.09%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	9.09%
999 Cause unknown	9.09%

100%

Corrective Action Plan
 Power supply outage affected all members on the circuit.

Substation Name Reidland
Substation Number 41
Circuit Name Ken Mar Rd
Circuit Number 4101
Circuit Location 4101-Ken Mar Rd
Total Circuit Length (Miles) 19.85
Customer Count 323.679452
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SAIDI) 33.7999277
Reporting Year (SAIDI) 114.026391
Circuit 5 Year Average (SAIFI) 0.579610331
Reporting Year (SAIFI) 1.263595812

Outage Causes

Cause	Percentage (%)
-------	----------------

000 Power supply	0%
100 Construction	20.00%
110 Maintenance	6.67%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	6.67%
430 Tree failure from overhang or dead tree without ice/snow	13.33%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	20.00%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	6.67%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	26.67%
999 Cause unknown	0%

100%

Corrective Action Plan
 Circuit was trimmed late in 2018

Substation Name Reidland
Substation Number 41
Circuit Name Reidland Water
Circuit Number 4102
Circuit Location 102-Reidland Water
Total Circuit Length (Miles) 2.9
Customer Count 53.89863
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 81.77262239
Reporting Year (SAIDI) 54.416967
Circuit 5 Year Average (SAIFI) 0.639572869
Reporting Year (SAIFI) 0.760687238

Outage Causes

Cause	Percentage (%)
000 Power supply	0%
100 Construction	40.00%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	40.00%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	20.00%

100%

Corrective Action Plan

No corrective action planned at this time.

Substation Name Culp
Substation Number 42
Circuit Name Possum Trot
Circuit Number 42234
Circuit Location 2234-Possum Trot
Total Circuit Length (Miles) 18.5
Customer Count 205.273972
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SAIDI) 58.95149841
Reporting Year (SAIDI) 30.417884
Circuit 5 Year Average (SAIFI) 0.494221106
Reporting Year (SAIFI) 0.511511513

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	11.11%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	22.22%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	11.11%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	22.22%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	11%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	11.11%
999 Cause unknown	11.11%

100%

Corrective Action Plan
 Circuit was trimmed in 2018

Substation Name Vulcan
Substation Number 45
Circuit Name Vulcan 2 Hwy 62
Circuit Number 4505
Circuit Location 4505-Vulcan 2 Hwy 62
Total Circuit Length (Miles) 4.99
Customer Count 3
Date of Last Circuit Trim 0
Circuit 5 Year Average (SAIDI) 41.1
Reporting Year (SAIDI) 77.333333
Circuit 5 Year Average (SAIFI) 0.233333333
Reporting Year (SAIFI) 0.666666667

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	100%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 No corrective action planned at this time.

Outage Causes

Substation Name Lovelaceville
Substation Number 49
Circuit Name Blandville
Circuit Number 4901
Circuit Location 4901-Blandville
Total Circuit Length (Miles) 20.3
Customer Count 132.841095
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 213.5525786
Reporting Year (SAIDI) 138.428548
Circuit 5 Year Average (SAIFI) 1.73579184
Reporting Year (SAIFI) 1.934642288

Cause	Percentage (%)
000 Power supply	11.11%
100 Construction	0%
110 Maintenance	22.22%
190 Other planned	0%
300 Material or equipment fault/failure	11.11%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	11.11%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	11.11%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	11.11%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	11.11%
999 Cause unknown	11.11%

100%

Corrective Action Plan

A power supply outage affected all members on this circuit. Circuit is scheduled to be trimmed in 2019

Substation Name Lovelaceville
Substation Number 49
Circuit Name Lovelaceville
Circuit Number 4902
Circuit Location 4902-Lovelaceville
Total Circuit Length (Miles) 57.87
Customer Count 522.734246
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 135.3080419
Reporting Year (SAIDI) 18.445319
Circuit 5 Year Average (SAIFI) 0.786054832
Reporting Year (SAIFI) 1.155462847

Outage Causes	
Cause	Percentage (%)
000 Power supply	5.56%
100 Construction	11.11%
110 Maintenance	5.56%
190 Other planned	0%
300 Material or equipment fault/failure	5.56%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	5.56%
430 Tree failure from overhang or dead tree without ice/snow	22.22%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	5.56%
690 Animal, other	0%
700 Customer-caused	5.56%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	11.11%
999 Cause unknown	22.22%

100%

Corrective Action Plan

A power supply outage affected all members on this circuit. Circuit is scheduled to be trimmed in 2019

Substation Name Lovelaceville
Substation Number 49
Circuit Name Cunningham
Circuit Number 4903
Circuit Location 4903-Cunningham
Total Circuit Length (Miles) 64.47
Customer Count 526.986301
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 206.5207352
Reporting Year (SAIDI) 73.119547
Circuit 5 Year Average (SAIFI) 1.536269589
Reporting Year (SAIFI) 2.390953992

Outage Causes

Cause	Percentage (%)
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000 Power supply	5.88%
100 Construction	0%
110 Maintenance	5.88%
190 Other planned	17.65%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	23.53%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	23.53%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	11.76%
999 Cause unknown	11.76%

100%

Corrective Action Plan

A power supply outage affected all members on this circuit. Circuit is scheduled to be trimmed in 2019

Substation Name Krebs Station Road
Substation Number 50
Circuit Name Browns Plating
Circuit Number 5001
Circuit Location 5001-Browns Plating
Total Circuit Length (Miles) 37.55
Customer Count 514.345205
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 287.3221023
Reporting Year (SAIDI) 147.513769
Circuit 5 Year Average (SAIFI) 1.587068042
Reporting Year (SAIFI) 2.078370693

Outage Causes	
Cause	Percentage (%)
000 Power supply	4.76%
100 Construction	19.05%
110 Maintenance	19.05%
190 Other planned	0%
300 Material or equipment fault/failure	4.76%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	4.76%
430 Tree failure from overhang or dead tree without ice/snow	4.76%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	9.52%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	10%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	4.76%
999 Cause unknown	19.05%

100%

Corrective Action Plan
 A power supply outage affected all members on this circuit.

Substation Name Krebs Station Road
Substation Number 50
Circuit Name Clinton Road
Circuit Number 5003
Circuit Location 5003-Clinton Rd
Total Circuit Length (Miles) 52.5
Customer Count 603.553424
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 127.0858602
Reporting Year (SAIDI) 162.250757
Circuit 5 Year Average (SAIFI) 1.146365418
Reporting Year (SAIFI) 2.074381406

Outage Causes	
Cause	Percentage (%)
000 Power supply	3.23%
100 Construction	22.58%
110 Maintenance	16.13%
190 Other planned	0%
300 Material or equipment fault/failure	3.23%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	6.45%
430 Tree failure from overhang or dead tree without ice/snow	9.68%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	3.23%
500 Lightning	3.23%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	16.13%
690 Animal, other	3.23%
700 Customer-caused	3.23%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	9.68%

100%

Corrective Action Plan
 A power supply outage affected all members on this circuit.

Substation Name Freemont
Substation Number 51
Circuit Name Symsonia
Circuit Number 51214
Circuit Location 51214-Symsonia
Total Circuit Length (Miles) 93.38
Customer Count 1013.772602
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 71.70120988
Reporting Year (SAIDI) 179.069743
Circuit 5 Year Average (SAIFI) 0.827550453
Reporting Year (SAIFI) 1.71636124

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	22.06%
110 Maintenance	25.00%
190 Other planned	1.47%
300 Material or equipment fault/failure	2.94%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	5.88%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	1.47%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	2.94%
630 Squirrel	4.41%
690 Animal, other	1.47%
700 Customer-caused	0%
710 Motor vehicle	16.18%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	1.47%
999 Cause unknown	14.71%

100%

Corrective Action Plan
 Multiple vehicle accidents on this circuit.

Substation Name Freemont
Substation Number 51
Circuit Name Freemont
Circuit Number 51244
Circuit Location 51244-Freemont
Total Circuit Length (Miles) 25.78
Customer Count 345.750684
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 53.09429307
Reporting Year (SAIDI) 159.661289
Circuit 5 Year Average (SAIFI) 0.551113102
Reporting Year (SAIFI) 1.258132001

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	21.43%
110 Maintenance	14.29%
190 Other planned	0%
300 Material or equipment fault/failure	7.14%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	7.14%
430 Tree failure from overhang or dead tree without ice/snow	28.57%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	7.14%
999 Cause unknown	14.29%

100%

Corrective Action Plan
 Circuit was trimmed in 2018.

Substation Name Palma
Substation Number 54
Circuit Name Draffenville
Circuit Number 54224
Circuit Location 54224-Draffenville
Total Circuit Length (Miles) 21.36
Customer Count 287.69041
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 6.38023991
Reporting Year (SAIDI) 131.144447
Circuit 5 Year Average (SAIFI) 0.039841222
Reporting Year (SAIFI) 1.244393235

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	30.00%
110 Maintenance	10.00%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	10.00%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	10.00%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	20.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	10.00%
999 Cause unknown	10.00%

100%

Corrective Action Plan

A station upgrade was completed in 2018 which included new electronic relays. A setting on one of those relays was incorrect which caused the station to operate incorrectly. The problem was found and fixed.

Substation Name Palma
Substation Number 54
Circuit Name Palma
Circuit Number 54234
Circuit Location 54234-Palma
Total Circuit Length (Miles) 56.46
Customer Count 732.547945
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SAIDI) 66.81210355
Reporting Year (SAIDI) 259.667645
Circuit 5 Year Average (SAIFI) 0.804384668
Reporting Year (SAIFI) 2.745212807

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	26.09%
110 Maintenance	4.35%
190 Other planned	0%
300 Material or equipment fault/failure	4.35%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	4.35%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	8.70%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	4.35%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	4.35%
630 Squirrel	21.74%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	8.70%
999 Cause unknown	13.04%

100%

Corrective Action Plan

A station upgrade was completed in 2018 which included new electronic relays. A setting on one of those relays was incorrect which caused the station to operate incorrectly. The problem was found and fixed.

Substation Name Kansas
Substation Number 61
Circuit Name Lowes
Circuit Number 6101
Circuit Location 6101-Lowes
Total Circuit Length (Miles) 58.3
Customer Count 454.304109
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SAIDI) 119.8663158
Reporting Year (SAIDI) 47.785172
Circuit 5 Year Average (SAIFI) 0.764224538
Reporting Year (SAIFI) 1.274476696

Outage Causes	
Cause	Percentage (%)
000 Power supply	7.14%
100 Construction	14.29%
110 Maintenance	14.29%
190 Other planned	0%
300 Material or equipment fault/failure	7.14%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	7.14%
430 Tree failure from overhang or dead tree without ice/snow	7.14%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	7.14%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	7.14%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	7.14%
999 Cause unknown	21.43%

100%

Corrective Action Plan

A power supply outage affected all members on this circuit. Circuit is scheduled to be trimmed in 2019

Substation Name Kansas
Substation Number 61
Circuit Name US 45-Folsomdale
Circuit Number 6102
Circuit Location 6102-US 45 Folsomdale
Total Circuit Length (Miles) 29.15
Customer Count 213.284931
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SAIDI) 115.809028
Reporting Year (SAIDI) 31.193014
Circuit 5 Year Average (SAIFI) 0.744115818
Reporting Year (SAIFI) 1.279977909

Outage Causes	
Cause	Percentage (%)
000 Power supply	10.00%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	10.00%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	10.00%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	10.00%
690 Animal, other	10.00%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	10.00%
999 Cause unknown	40.00%

100%

Corrective Action Plan

A power supply outage affected all members on this circuit. Circuit is scheduled to be trimmed in 2019

Substation Name Kansas
Substation Number 61
Circuit Name Melber
Circuit Number 6103
Circuit Location 6103-Melber
Total Circuit Length (Miles) 52.6
Customer Count 527.673972
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 158.3419176
Reporting Year (SAIDI) 54.944912
Circuit 5 Year Average (SAIFI) 0.84870963
Reporting Year (SAIFI) 1.334157145

Outage Causes	
Cause	Percentage (%)
000 Power supply	5.88%
100 Construction	0%
110 Maintenance	11.76%
190 Other planned	0%
300 Material or equipment fault/failure	5.88%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	5.88%
430 Tree failure from overhang or dead tree without ice/snow	11.76%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	5.88%
500 Lightning	11.76%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	17.65%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	5.88%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	17.65%

100%

Corrective Action Plan

A power supply outage affected all members on this circuit. Circuit is scheduled to be trimmed in 2019

Substation Name Kansas
Substation Number 61
Circuit Name Pottsville
Circuit Number 6104
Circuit Location 6104-Pottsville
Total Circuit Length (Miles) 46.87
Customer Count 360.101369
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 317.425882
Reporting Year (SAIDI) 121.787929
Circuit 5 Year Average (SAIFI) 1.520281495
Reporting Year (SAIFI) 2.429871351

Cause		Percentage (%)
000 Power supply		4.00%
100 Construction		0%
110 Maintenance		4.00%
190 Other planned		0%
300 Material or equipment fault/failure		0%
310 Installation fault		0%
320 Conductor sag or inadequate clearance		0%
340 Overload		0%
350 Miscoordination of protection devices		0%
360 Other equipment installation/design		0%
400 Decay/age of material/equipment		0%
420 Tree growth		8.00%
430 Tree failure from overhang or dead tree without ice/snow		12.00%
440 Trees with ice/snow		0%
470 Borrower crew cuts tree		0%
490 Maintenance, other		0%
500 Lightning		8.00%
510 Wind, not trees		0%
520 Ice, sleet, frost, not trees		0%
530 Flood		0%
540 Storm		0%
590 Weather, other		0%
600 Animal/bird		12.00%
630 Squirrel		0%
690 Animal, other		0%
700 Customer-caused		0%
710 Motor vehicle		0%
715 Farming Equipment		0%
720 Aircraft		0%
730 Fire		0%
740 Public cuts tree		0%
750 Vandalism		0%
760 Switching error or caused by construction or maintenance		0%
790 Public, other		4.00%
800 Other		8.00%
999 Cause unknown		40.00%

100%

Corrective Action Plan

A power supply outage affected all members on this circuit. Circuit is scheduled to be trimmed in 2019

Outage Causes

Substation Name Olivet Church Road
Substation Number 74
Circuit Name Olivet Ch Rd
Circuit Number 74214
Circuit Location 74214-Olivet Ch Rd
Total Circuit Length (Miles) 21.4
Customer Count 557.663013
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 20.7189902
Reporting Year (SAIDI) 117.710872
Circuit 5 Year Average (SAIFI) 0.243595711
Reporting Year (SAIFI) 1.031088644

Cause	Percentage (%)
000 Power supply	0%
100 Construction	12.50%
110 Maintenance	12.50%
190 Other planned	0%
300 Material or equipment fault/failure	12.50%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	12.50%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	25.00%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	25.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 Circuit is scheduled for trimming in 2019.

Substation Name Olivet Church Road
Substation Number 74
Circuit Name Info Age Park
Circuit Number 74234
Circuit Location 74234-Info Age Park
Total Circuit Length (Miles) 2.45
Customer Count 8
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SAIDI) 0
Reporting Year (SAIDI) 247.625
Circuit 5 Year Average (SAIFI) 0
Reporting Year (SAIFI) 0.875

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	100%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 No corrective action planned at this time.

Substation Name Grand Rivers
Substation Number 76
Circuit Name luka
Circuit Number 7601
Circuit Location 7601-luka
Total Circuit Length (Miles) 47.8
Customer Count 299.016438
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 127.3813609
Reporting Year (SAIDI) 223.385712
Circuit 5 Year Average (SAIFI) 1.24208091
Reporting Year (SAIFI) 1.190569998

Outage Causes

Cause	Percentage (%)
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000 Power supply	0%
100 Construction	6.67%
110 Maintenance	6.67%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	33.33%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	20.00%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	6.67%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	26.67%

100%

Corrective Action Plan
 No corrective action planned at this time.

Substation Name Grand Rivers
Substation Number 76
Circuit Name Averitt-GR #2
Circuit Number 7605
Circuit Location 7605-Averitt GR #2
Total Circuit Length (Miles) 43.19
Customer Count 659.49589
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 181.6467181
Reporting Year (SAIDI) 318.899637
Circuit 5 Year Average (SAIFI) 1.565638876
Reporting Year (SAIFI) 1.072030942

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	20.00%
110 Maintenance	10.00%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	20.00%
430 Tree failure from overhang or dead tree without ice/snow	20.00%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	10.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	10.00%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	10.00%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 No corrective action planned at this time.

Substation Name Strawberry Hill
Substation Number 77
Circuit Name Hansen Rd-Top Circuit
Circuit Number 7702
Circuit Location 7702-Hansen Rd
Total Circuit Length (Miles) 29.4
Customer Count 639.756164
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 93.85658822
Reporting Year (SAIDI) 182.260064
Circuit 5 Year Average (SAIFI) 1.108820859
Reporting Year (SAIFI) 1.972626558

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	5.56%
110 Maintenance	16.67%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	5.56%
400 Decay/age of material/equipment	0%
420 Tree growth	5.56%
430 Tree failure from overhang or dead tree without ice/snow	27.78%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	5.56%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	16.67%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	16.67%

100%

Corrective Action Plan

No corrective action planned at this time. Circuit is scheduled to be trimmed in 2019

Substation Name Strawberry Hill
Substation Number 77
Circuit Name Hwy 60-Jas Sanders-Top Cir
Circuit Number 7706
Circuit Location 7706-Hwy 60
Total Circuit Length (Miles) 1.6
Customer Count 12.361643
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 12.7784812
Reporting Year (SAIDI) 52.905588
Circuit 5 Year Average (SAIFI) 0.219286485
Reporting Year (SAIFI) 1.051640142

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	0%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	0%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	100%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan

No corrective action planned at this time.

Substation Name Possum Trot
Substation Number 78
Circuit Name Hwy 95 North
Circuit Number 7802
Circuit Location 7802-Possum Trot
Total Circuit Length (Miles) 42.4
Customer Count 533.389041
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 31.79113357
Reporting Year (SAIDI) 51.139033
Circuit 5 Year Average (SAIFI) 0.275088371
Reporting Year (SAIFI) 0.414331722

Outage Causes

Cause	Percentage (%)
000 Power supply	0%
100 Construction	9.09%
110 Maintenance	4.55%
190 Other planned	0%
300 Material or equipment fault/failure	4.55%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	0%
350 Miscoordination of protection devices	0%
360 Other equipment installation/design	0%
400 Decay/age of material/equipment	0%
420 Tree growth	9.09%
430 Tree failure from overhang or dead tree without ice/snow	13.64%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	4.55%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	22.73%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	4.55%
999 Cause unknown	27.27%

100%

Corrective Action Plan

No corrective action planned at this time. Circuit is scheduled to be trimmed in 2019

Substation Name Possum Trot
Substation Number 78
Circuit Name Possum Trot
Circuit Number 7803
Circuit Location 7803-Hwy 95
Total Circuit Length (Miles) 15
Customer Count 195.39178
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 23.9700972
Reporting Year (SAIDI) 202.679969
Circuit 5 Year Average (SAIFI) 0.224141781
Reporting Year (SAIFI) 1.699150292

		Outage Causes	
		Cause	Percentage (%)
		000 Power supply	0%
		100 Construction	0%
		110 Maintenance	5.88%
		190 Other planned	0%
		300 Material or equipment fault/failure	0%
		310 Installation fault	0%
		320 Conductor sag or inadequate clearance	0%
		340 Overload	0%
		350 Miscoordination of protection devices	0%
		360 Other equipment installation/design	0%
		400 Decay/age of material/equipment	0%
		420 Tree growth	0%
		430 Tree failure from overhang or dead tree without ice/snow	35.29%
		440 Trees with ice/snow	0%
		470 Borrower crew cuts tree	0%
		490 Maintenance, other	0%
		500 Lightning	5.88%
		510 Wind, not trees	5.88%
		520 Ice, sleet, frost, not trees	0%
		530 Flood	0%
		540 Storm	0%
		590 Weather, other	0%
		600 Animal/bird	5.88%
		630 Squirrel	11.76%
		690 Animal, other	5.88%
		700 Customer-caused	0%
		710 Motor vehicle	0%
		715 Farming Equipment	0%
		720 Aircraft	0%
		730 Fire	5.88%
		740 Public cuts tree	0%
		750 Vandalism	0%
		760 Switching error or caused by construction or maintenance	0%
		790 Public, other	0%
		800 Other	0%
		999 Cause unknown	17.65%

100%

Corrective Action Plan

No corrective action planned at this time. Circuit is scheduled to be trimmed in 2019