



Jackson Purchase Energy Cooperative
6525 US Highway 60 W
Paducah, KY 42001
270.442.7321 • 800.633.4044
www.JPEnergy.com

November 24, 2021

RECEIVED
NOV 24 2021

Ms. Linda Bridwell
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40602

**PUBLIC SERVICE
COMMISSION**

RE: 2020 Annual Distribution Reliability Report

Executive Director Bridwell:

Please find enclosed Jackson Purchase Energy Corporation's 2020 Annual Distribution Reliability Report as outlined by Administrative Case 2011-00450.

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

Sincerely,

Travis Spiceland
Jackson Purchase Energy Corporation

enclosures



KENTUCKY PUBLIC SERVICE COMMISSION

[Electric Distribution Utility Annual Reliability ReportA1:144](#)

SECTION 1: CONTACT INFORMATION

	UTILITY NAME	1.1	Jackson Purchase Energy Corporation
	REPORT PREPARED BY	1.2	Kristy Reed
	E-MAIL ADDRESS OF PREPARER	1.3	kristy.reed@jpenergy.com
	PHONE NUMBER OF PREPARER	1.4	270-442-7321

SECTION 2: REPORT YEAR

	CALENDAR YEAR OF REPORT	2.1	2020
--	-------------------------	-----	------

SECTION 3: MAJOR EVENT DAYS

	TMED	3.1	9.77
	FIRST DATE USED TO DETERMINE TMED	3.2	1/1/2015
	LAST DATE USED TO DETERMINE TMED	3.3	12/31/2019
	NUMBER OF MED IN REPORT YEAR	3.4	1

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	30337		Total Circuits	91
Excluding MED					
	5 Year Average			Reporting Year	
	SAIDI	108.07		SAIDI	93.058
	SAIFI	1.17		SAIFI	1.185
Including MED					
	5 Year Average			Reporting Year	
	SAIDI	343.12		SAIDI	102.878
	SAIFI	1.73		SAIFI	1.248

KENTUCKY PUBLIC SERVICE COMMISSION

[Electric Distribution Utility Annual Reliability Report](#)

Additional pages may be attached as necessary

SECTION 7: VEGETATION MANAGEMENT PLAN REVIEW

JPEC had established a four (4) year cycle on right-of-way maintenance and employs a contractor to perform that cycle clearing. JPEC is looking at increasing that cycle due to the cost per mile of trimming and clearing trees triple. JPEC has begun reclaiming the full width of the ROW to help extend the process. JPEC will use outage data to track tree related outages and will prioritize ROW spending to those circuits that require it. JPEC also employs contract crews that handles "hot-spot" or service order 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.

SECTION 8: UTILITY COMMENTS

Overall, JPEC's system averaged 99.98% reliable when factoring out major event days and power supply outages. JPEC reliability numbers ended at CAIDI - 93.4 mins, SAIFI - 1.17, and SAIDI - 108.1. All reliability indices were within the past 5 year average. Engineering and Operations is focusing on a number of different areas in 2021 including the continuing our ROW program, bird deterrents around the lakes area, substation maintenance program and improving sectionalizing system-wide.

Substation Name Joy
Substation Number 5
Circuit Name Lola
Circuit Number 5254
Circuit Location 05254-Lola
Total Circuit Length (Miles) 56.5
Customer Count 298.467048
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 321.0893508
Reporting Year (SAIDI) 237.778342
Circuit 5 Year Average (SAIFI) 1.366327628
Reporting Year (SAIFI) 1.430643694

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	7.14%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	14.29%
435 Tree failure from outside of ROW	28.57%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	21.43%
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	7.14%
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	14.29%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Burna
Substation Number 14
Circuit Name Hampton
Circuit Number 14214
Circuit Location 14214-Hampton
Total Circuit Length (Miles) 12.6
Customer Count 87.681948
Date of Last Circuit Trim 2020
Circuit 5 Year Average (SADI) 262.7378392
Reporting Year (SAIDI) 83.061567
Circuit 5 Year Average (SAIFI) 0.929837385
Reporting Year (SAIFI) 1.049246762

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	25.00%
190 Other planned	0%
300 Material or equipment fault/failure	50.00%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lighting	25.00%
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	0%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Burna
Substation Number 14
Circuit Name Salem
Circuit Number 14244
Circuit Location 14244-Salem
Total Circuit Length (Miles) 52.9
Customer Count 317.547277
Date of Last Circuit Trim 2020
Circuit 5 Year Average (SADI) 207.927674
Reporting Year (SAIDI) 146.047544
Circuit 5 Year Average (SAIFI) 0.971261915
Reporting Year (SAIFI) 1.429708371

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	6.25%
190 Other planned	0%
300 Material or equipment fault/failure	43.75%
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	6.25%
435 Tree failure from outside of ROW	12.50%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	6.25%
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	18.75%
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	6.25%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Burna
Substation Number 14
Circuit Name Smithland
Circuit Number 14254
Circuit Location 14254-Smithland
Total Circuit Length (Miles) 69.7
Customer Count 343.068767
Date of Last Circuit Trim 2020
Circuit 5 Year Average (SADI) 386.666194
Reporting Year (SAIDI) 131.562544
Circuit 5 Year Average (SAIFI) 1.999883507
Reporting Year (SAIFI) 2.235703374

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	10.53%
110 Maintenance	5.26%
190 Other planned	0%
300 Material or equipment fault/failure	15.79%
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	5.26%
435 Tree failure from outside of ROW	5.26%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	5.26%
490 Maintenance, other	0%
500 Lightning	21.05%
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	15.79%
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
 No Corrective Action is planned.

Substation Name Cumberland
Substation Number 15
Circuit Name Pinckneyville
Circuit Number 15224
Circuit Location 15224-Pinckneyville
Total Circuit Length (Miles) 28
Customer Count 114.564469
Date of Last Circuit Trim 2019
Circuit 5 Year Average (SADI) 256.8558156
Reporting Year (SAIDI) 247.746969
Circuit 5 Year Average (SAIFI) 1.604879043
Reporting Year (SAIFI) 2.025060667

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	20.00%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	20.00%
435 Tree failure from outside of ROW	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	20.00%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	20.00%
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	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Cumberland
Substation Number 15
Circuit Name Quarry
Circuit Number 15234
Circuit Location 15234-Quarry
Total Circuit Length (Miles) 5.5
Customer Count 31
Date of Last Circuit Trim 2019
Circuit 5 Year Average (SADI) 195.3342188
Reporting Year (SAIDI) 65.32258
Circuit 5 Year Average (SAIFI) 0.634257888
Reporting Year (SAIFI) 1.129032258

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	25.00%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	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	25.00%
700 Customer-caused	25.00%
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	25.00%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name LaCenter
Substation Number 26
Circuit Name Damron's
Circuit Number 26214
Circuit Location 26214-Damrons
Total Circuit Length (Miles) 39.7
Customer Count 228.879656
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 272.5503874
Reporting Year (SAIDI) 163.10755
Circuit 5 Year Average (SAIFI) 1.156041837
Reporting Year (SAIFI) 1.826287261

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	15.63%
110 Maintenance	50.00%
190 Other planned	0%
300 Material or equipment fault/failure	6.25%
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	3.13%
430 Tree failure from overhang or dead tree without ice/snow	3.13%
435 Tree failure from outside of ROW	6.25%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lighting	6.25%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	0%
590 Weather, other	3.13%
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	6.25%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Kevil
Substation Number 28
Circuit Name Hobbs Rd
Circuit Number 28214
Circuit Location 28214-Hobbs Rd
Total Circuit Length (Miles) 53.7
Customer Count 554.690544
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 327.570387
Reporting Year (SAIDI) 229.019588
Circuit 5 Year Average (SAIFI) 2.021995795
Reporting Year (SAIFI) 4.719748747

Outage Causes	
Cause	Percentage (%)
000 Power supply	2.33%
100 Construction	9.30%
110 Maintenance	32.56%
190 Other planned	0%
300 Material or equipment fault/failure	9.30%
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	6.98%
435 Tree failure from outside of ROW	2.33%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	11.63%
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	9.30%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	2.33%
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	13.95%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Kevil
Substation Number 28
Circuit Name Kelley Rd
Circuit Number 28234
Circuit Location 28234-Kelley Rd
Total Circuit Length (Miles) 46.8
Customer Count 409.719197
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 162.9733494
Reporting Year (SAIDI) 42.465669
Circuit 5 Year Average (SAIFI) 0.911076209
Reporting Year (SAIFI) 1.310653745

Outage Causes	
Cause	Percentage (%)
000 Power supply	4.55%
100 Construction	13.64%
110 Maintenance	22.73%
190 Other planned	0%
300 Material or equipment fault/failure	13.64%
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	9.09%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	13.64%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	4.55%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	4.55%
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	13.64%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name High Point
Substation Number 29
Circuit Name Carneal Rd
Circuit Number 29224
Circuit Location 29224-Carneal Rd
Total Circuit Length (Miles) 33.2
Customer Count 248.426934
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 436.6488758
Reporting Year (SAIDI) 171.627928
Circuit 5 Year Average (SAIFI) 2.307331906
Reporting Year (SAIFI) 6.766577089

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	10.00%
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	10.00%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	10.00%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	10.00%
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	10.00%
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	30.00%

100%

Corrective Action Plan
 No Corrective Action is planned.

Outage Causes

Substation Name Coleman Road
Substation Number 30
Circuit Name Holt Rd
Circuit Number 30244
Circuit Location 30244-Hwy 60 Business
Total Circuit Length (Miles) 7.7
Customer Count 102.180515
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 42.4978166
Reporting Year (SAIDI) 77.66647
Circuit 5 Year Average (SAIFI) 0.614525632
Reporting Year (SAIFI) 1.115672592

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%
435 Tree failure from outside of ROW	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	33.33%
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	33.33%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	33.33%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 No corrective action is planned.

Substation Name Ledbetter
Substation Number 31
Circuit Name US 60 East
Circuit Number 31224
Circuit Location 31224-US 60 East
Total Circuit Length (Miles) 35.6
Customer Count 320.853868
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 44.4334658
Reporting Year (SAIDI) 28.732706
Circuit 5 Year Average (SAIFI) 0.292192134
Reporting Year (SAIFI) 0.317901731

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	14.29%
110 Maintenance	7.14%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	35.71%
435 Tree failure from outside of ROW	0%
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	7.14%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	0%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	7.14%
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	14.29%

100%

Corrective Action Plan
 No corrective action is planned.

Substation Name Ledbetter
Substation Number 31
Circuit Name River Crossing
Circuit Number 31234
Circuit Location 31234-River Crossing
Total Circuit Length (Miles) 4.3
Customer Count 33.727793
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 15.315179
Reporting Year (SAIDI) 64.575823
Circuit 5 Year Average (SAIFI) 0.229374802
Reporting Year (SAIFI) 0.978421565

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%
435 Tree failure from outside of ROW	100.00%
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	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 is planned.

Substation Name Ledbetter
Substation Number 31
Circuit Name Ledbetter
Circuit Number 31244
Circuit Location 31244-Ledbetter
Total Circuit Length (Miles) 61.6
Customer Count 1018.358166
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 169.813556
Reporting Year (SAIDI) 63.191912
Circuit 5 Year Average (SAIFI) 1.009017608
Reporting Year (SAIFI) 1.253979241

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	3.03%
110 Maintenance	24.24%
190 Other planned	0%
300 Material or equipment fault/failure	12.12%
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	6.06%
430 Tree failure from overhang or dead tree without ice/snow	6.06%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	6.06%
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	3.03%
630 Squirrel	6.06%
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	33.33%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Little Union
Substation Number 39
Circuit Name US 60 West
Circuit Number 39224
Circuit Location 39224-US 60 West
Total Circuit Length (Miles) 37.2
Customer Count 474.363896
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 260.1536298
Reporting Year (SAIDI) 178.032098
Circuit 5 Year Average (SAIFI) 1.454332938
Reporting Year (SAIFI) 2.289381652

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	10.53%
110 Maintenance	26.32%
190 Other planned	0%
300 Material or equipment fault/failure	21.05%
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	5.26%
435 Tree failure from outside of ROW	5.26%
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	5.26%
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	0%
999 Cause unknown	21.05%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Husbands Road
Substation Number 40
Circuit Name Lydon Rd
Circuit Number 40234
Circuit Location 40234-Lydon Rd
Total Circuit Length (Miles) 32.1
Customer Count 456.180515
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 98.8846112
Reporting Year (SAIDI) 99.03974
Circuit 5 Year Average (SAIFI) 0.826935402
Reporting Year (SAIFI) 0.694900351

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	6.67%
110 Maintenance	20.00%
190 Other planned	0%
300 Material or equipment fault/failure	6.67%
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%
435 Tree failure from outside of ROW	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	20.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	20.00%
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	20.00%

100%

Corrective Action Plan
 No Corrective Action is planned.

Outage Causes

Substation Name Reidland
Substation Number 41
Circuit Name Reidland Water
Circuit Number 41224
Circuit Location 41224-Reidland Water
Total Circuit Length (Miles) 2.9
Customer Count 52.730659
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 53.5190884
Reporting Year (SAIDI) 28.80677
Circuit 5 Year Average (SAIFI) 0.445394926
Reporting Year (SAIFI) 0.663750476

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%
435 Tree failure from outside of ROW	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	100.00%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Culp
Substation Number 42
Circuit Name Sharpe
Circuit Number 42244
Circuit Location 42244-Sharpe
Total Circuit Length (Miles) 78.8
Customer Count 1089.389684
Date of Last Circuit Trim 2018
Circuit 5 Year Average (SADI) 78.323032
Reporting Year (SAIDI) 170.000691
Circuit 5 Year Average (SAIFI) 1.01961759
Reporting Year (SAIFI) 1.850577465

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	4.26%
110 Maintenance	6.38%
190 Other planned	0%
300 Material or equipment fault/failure	19.15%
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	2.13%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	4.26%
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	6.38%
630 Squirrel	25.53%
690 Animal, other	2.13%
700 Customer-caused	0%
710 Motor vehicle	14.89%
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	2.13%
800 Other	0%
999 Cause unknown	12.77%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Calvert City
Substation Number 43
Circuit Name Gilbertsville
Circuit Number 43234
Circuit Location 43234-Gilbertsville
Total Circuit Length (Miles) 23.6
Customer Count 348.366762
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 99.6642198
Reporting Year (SAIDI) 71.381666
Circuit 5 Year Average (SAIFI) 0.36117859
Reporting Year (SAIFI) 1.188402698

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	25.00%
190 Other planned	0%
300 Material or equipment fault/failure	8.33%
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	8.33%
435 Tree failure from outside of ROW	8.33%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lighting	8.33%
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	16.67%
800 Other	0%
999 Cause unknown	8.33%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Calvert City
Substation Number 43
Circuit Name CC Ind Park
Circuit Number 43244
Circuit Location 43244-Industrial Park
Total Circuit Length (Miles) 4.9
Customer Count 25.979942
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 87.978791
Reporting Year (SAIDI) 138.145035
Circuit 5 Year Average (SAIFI) 0.421340474
Reporting Year (SAIFI) 2.07852658

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	33.33%
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%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	33.33%
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	33.33%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Vulcan
Substation Number 45
Circuit Name Kinder Morgan 1
Circuit Number 45244
Circuit Location 45244-Kinder Morgan 1
Total Circuit Length (Miles) 7.8
Customer Count 34.928366
Date of Last Circuit Trim 0
Circuit 5 Year Average (SADI) 244.2124682
Reporting Year (SAIDI) 4419.846035
Circuit 5 Year Average (SAIFI) 1.195718651
Reporting Year (SAIFI) 44.97776964

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	14.29%
110 Maintenance	14.29%
190 Other planned	0%
300 Material or equipment fault/failure	14.29%
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	14.29%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	14.29%
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	14.29%
630 Squirrel	0%
690 Animal, other	14.29%
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

Substation lightning arrester failure and Osprey nests. JPEC has installed nesting deterrents to limit Osprey caused outages.

Outage Causes

Substation Name Vulcan
Substation Number 45
Circuit Name Vulcan 2 Hwy 62
Circuit Number 45254
Circuit Location 45254-Vulcan 2 Hwy 62
Total Circuit Length (Miles) 5
Customer Count 3
Date of Last Circuit Trim 0
Circuit 5 Year Average (SADI) 84.0333332
Reporting Year (SAIDI) 184
Circuit 5 Year Average (SAIFI) 0.633333333
Reporting Year (SAIFI) 1.333333333

Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	100.00%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	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 is planned.

Substation Name New York
Substation Number 47
Circuit Name Hinkleville
Circuit Number 47214
Circuit Location 47214-Hinkleville
Total Circuit Length (Miles) 44.7
Customer Count 263.865329
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 545.81478
Reporting Year (SAIDI) 82.288188
Circuit 5 Year Average (SAIFI) 2.931320235
Reporting Year (SAIFI) 3.054588502

Outage Causes	
Cause	Percentage (%)
000 Power supply	7.69%
100 Construction	7.69%
110 Maintenance	30.77%
190 Other planned	0%
300 Material or equipment fault/failure	7.69%
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	7.69%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lighting	7.69%
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	30.77%

100%

Corrective Action Plan
 No corrective action is planned.

Substation Name New York
Substation Number 47
Circuit Name Blandville
Circuit Number 47234
Circuit Location 47234-Blandville
Total Circuit Length (Miles) 30.2
Customer Count 222.553008
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 864.0127602
Reporting Year (SAIDI) 502.648789
Circuit 5 Year Average (SAIFI) 3.010921
Reporting Year (SAIFI) 3.599142547

Outage Causes	
Cause	Percentage (%)
000 Power supply	5.56%
100 Construction	0%
110 Maintenance	0%
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	11.11%
435 Tree failure from outside of ROW	22.22%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	5.56%
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	5.56%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	5.56%
740 Public cuts tree	5.56%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	0%
800 Other	0%
999 Cause unknown	11.11%

100%

Corrective Action Plan
 No corrective action is planned.

Substation Name New York
Substation Number 47
Circuit Name Wickliffe
Circuit Number 47244
Circuit Location 47244-Wickliffe
Total Circuit Length (Miles) 49.2
Customer Count 347.584527
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 440.0805634
Reporting Year (SAIDI) 237.087653
Circuit 5 Year Average (SAIFI) 1.895882096
Reporting Year (SAIFI) 2.989200955

Outage Causes	
Cause	Percentage (%)
000 Power supply	3.85%
100 Construction	3.85%
110 Maintenance	7.69%
190 Other planned	0%
300 Material or equipment fault/failure	11.54%
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	3.85%
400 Decay/age of material/equipment	0%
420 Tree growth	3.85%
430 Tree failure from overhang or dead tree without ice/snow	19.23%
435 Tree failure from outside of ROW	7.69%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	7.69%
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	7.69%
630 Squirrel	7.69%
690 Animal, other	3.85%
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	3.85%
800 Other	0%
999 Cause unknown	7.69%

100%

Corrective Action Plan
 JPEC plans to cut ROW in 2021.

Substation Name Lovelaceville
Substation Number 49
Circuit Name Lovelaceville
Circuit Number 49224
Circuit Location 49224-Lovelaceville
Total Circuit Length (Miles) 57.9
Customer Count 527.257879
Date of Last Circuit Trim 2020
Circuit 5 Year Average (SADI) 240.015947
Reporting Year (SAIDI) 76.161972
Circuit 5 Year Average (SAIFI) 1.024903405
Reporting Year (SAIFI) 1.302967727

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	5.26%
110 Maintenance	36.84%
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	10.53%
430 Tree failure from overhang or dead tree without ice/snow	5.26%
435 Tree failure from outside of ROW	0%
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	0%
590 Weather, other	0%
600 Animal/bird	0%
630 Squirrel	5.26%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	5.26%
715 Farming Equipment	5.26%
720 Aircraft	0%
730 Fire	0%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	5.26%
790 Public, other	0%
800 Other	0%
999 Cause unknown	10.53%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Freemont
Substation Number 51
Circuit Name Symsonia
Circuit Number 51214
Circuit Location 51214-Symsonia
Total Circuit Length (Miles) 93.3
Customer Count 1014.661891
Date of Last Circuit Trim 2019
Circuit 5 Year Average (SADI) 149.4781972
Reporting Year (SAIDI) 52.333689
Circuit 5 Year Average (SAIFI) 1.156499836
Reporting Year (SAIFI) 1.435946312

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	9.52%
110 Maintenance	26.19%
190 Other planned	0%
300 Material or equipment fault/failure	9.52%
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	4.76%
435 Tree failure from outside of ROW	4.76%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lighting	9.52%
510 Wind, not trees	0%
520 Ice, sleet, frost, not trees	0%
530 Flood	0%
540 Storm	2.38%
590 Weather, other	0%
600 Animal/bird	2.38%
630 Squirrel	11.90%
690 Animal, other	2.38%
700 Customer-caused	0%
710 Motor vehicle	0%
715 Farming Equipment	0%
720 Aircraft	0%
730 Fire	2.38%
740 Public cuts tree	0%
750 Vandalism	0%
760 Switching error or caused by construction or maintenance	0%
790 Public, other	2.38%
800 Other	0%
999 Cause unknown	11.90%

100%

Corrective Action Plan
 No corrective action is planned.

Substation Name Freemont
Substation Number 51
Circuit Name Bonds Rd
Circuit Number 51254
Circuit Location 51254-Bonds Rd
Total Circuit Length (Miles) 17.5
Customer Count 123.968481
Date of Last Circuit Trim 2019
Circuit 5 Year Average (SADI) 273.1015442
Reporting Year (SAIDI) 168.341176
Circuit 5 Year Average (SAIFI) 1.672285032
Reporting Year (SAIFI) 2.702299789

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	16.67%
110 Maintenance	33.33%
190 Other planned	0%
300 Material or equipment fault/failure	16.67%
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	16.67%
435 Tree failure from outside of ROW	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	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	0%

100%

Corrective Action Plan
 No corrective action is planned.

Outage Causes

Substation Name Palma
Substation Number 54
Circuit Name Draffenville
Circuit Number 54224
Circuit Location 54224-Draffenville
Total Circuit Length (Miles) 21.3
Customer Count 295.464183
Date of Last Circuit Trim 2019
Circuit 5 Year Average (SADI) 34.6814258
Reporting Year (SAIDI) 78.127913
Circuit 5 Year Average (SAIFI) 0.306188013
Reporting Year (SAIFI) 1.07288808

Cause	Percentage (%)
000 Power supply	0%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	50.00%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	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	50.00%

100%

Corrective Action Plan
 No corrective action is planned.

Substation Name Kansas
Substation Number 61
Circuit Name Pottsville
Circuit Number 61244
Circuit Location 61244-Pottsville
Total Circuit Length (Miles) 47.2
Customer Count 503.455587
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 286.5715678
Reporting Year (SAIDI) 460.098181
Circuit 5 Year Average (SAIFI) 1.408653952
Reporting Year (SAIFI) 4.065899859

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	13.95%
110 Maintenance	20.93%
190 Other planned	0%
300 Material or equipment fault/failure	9.30%
310 Installation fault	0%
320 Conductor sag or inadequate clearance	0%
340 Overload	2.33%
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	6.98%
435 Tree failure from outside of ROW	6.98%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	2.33%
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	9.30%
630 Squirrel	13.95%
690 Animal, other	0%
700 Customer-caused	2.33%
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	0%
999 Cause unknown	9.30%

100%

Corrective Action Plan
 No corrective action is planned.

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) 23.2
Customer Count 573.702005
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 45.7292296
Reporting Year (SAIDI) 136.504664
Circuit 5 Year Average (SAIFI) 0.448948383
Reporting Year (SAIFI) 3.027704252

Outage Causes	
Cause	Percentage (%)
000 Power supply	11.11%
100 Construction	22.22%
110 Maintenance	44.44%
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%
435 Tree failure from outside of ROW	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 is planned.

Substation Name Olivet Church Road
Substation Number 74
Circuit Name Highland Ch Rd
Circuit Number 74224
Circuit Location 74224-Highland Ch Rd
Total Circuit Length (Miles) 36
Customer Count 453.922636
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 157.9316616
Reporting Year (SAIDI) 131.678826
Circuit 5 Year Average (SAIFI) 0.987856766
Reporting Year (SAIFI) 2.396884213

Outage Causes	
Cause	Percentage (%)
000 Power supply	6.25%
100 Construction	6.25%
110 Maintenance	31.25%
190 Other planned	0%
300 Material or equipment fault/failure	18.75%
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	6.25%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	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	25.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	6.25%
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 is planned.

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) 2.7
Customer Count 9
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 69.7641022
Reporting Year (SAIDI) 189.111111
Circuit 5 Year Average (SAIFI) 0.224727524
Reporting Year (SAIFI) 2.111111111

Outage Causes	
Cause	Percentage (%)
000 Power supply	20.00%
100 Construction	0%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	80.00%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	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 is planned.

Substation Name Grand Rivers
Substation Number 76
Circuit Name Averitt-GR #2
Circuit Number 76254
Circuit Location 76254-Averitt GR #2
Total Circuit Length (Miles) 44.1
Customer Count 653.87679
Date of Last Circuit Trim 2016
Circuit 5 Year Average (SADI) 487.9584516
Reporting Year (SAIDI) 282.310066
Circuit 5 Year Average (SAIFI) 3.169503041
Reporting Year (SAIFI) 3.300315951

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	10.00%
110 Maintenance	40.00%
190 Other planned	5.00%
300 Material or equipment fault/failure	10.00%
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	5.00%
430 Tree failure from overhang or dead tree without ice/snow	5.00%
435 Tree failure from outside of ROW	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	10.00%
690 Animal, other	0%
700 Customer-caused	0%
710 Motor vehicle	5.00%
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	10.00%

100%

Corrective Action Plan
 No Corrective Action is planned.

Substation Name Strawberry Hill
Substation Number 77
Circuit Name almart-Hansen Rd Bottom
Circuit Number 7703
Circuit Location 7703-Walmart
Total Circuit Length (Miles) 9.6
Customer Count 532.458452
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 20.787157
Reporting Year (SAIDI) 25.949442
Circuit 5 Year Average (SAIFI) 0.458338059
Reporting Year (SAIFI) 1.004773233

Outage Causes	
Cause	Percentage (%)
000 Power supply	25.00%
100 Construction	25.00%
110 Maintenance	0%
190 Other planned	0%
300 Material or equipment fault/failure	25.00%
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	0%
430 Tree failure from overhang or dead tree without ice/snow	0%
435 Tree failure from outside of ROW	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	25.00%

100%

Corrective Action Plan
 No Corrective Action is planned.

Outage Causes

Substation Name Strawberry Hill
Substation Number 77
Circuit Name 31--Jas Sanders-Botom Cir
Circuit Number 7705
Circuit Location 7705-CSI
Total Circuit Length (Miles) 4.9
Customer Count 87.054441
Date of Last Circuit Trim 2015
Circuit 5 Year Average (SADI) 21.097768
Reporting Year (SAIDI) 5.444868
Circuit 5 Year Average (SAIFI) 0.452490291
Reporting Year (SAIFI) 1.010861697

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%
435 Tree failure from outside of ROW	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	100.00%
790 Public, other	0%
800 Other	0%
999 Cause unknown	0%

100%

Corrective Action Plan
 No corrective action is planned.

Substation Name Maxon
Substation Number 79
Circuit Name Express
Circuit Number 79224
Circuit Location 79224-Express
Total Circuit Length (Miles) 20.9
Customer Count 320.945558
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 179.5924288
Reporting Year (SAIDI) 162.697375
Circuit 5 Year Average (SAIFI) 1.155783268
Reporting Year (SAIFI) 2.196634234

Outage Causes	
Cause	Percentage (%)
000 Power supply	0%
100 Construction	10.00%
110 Maintenance	40.00%
190 Other planned	0%
300 Material or equipment fault/failure	10.00%
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	10.00%
400 Decay/age of material/equipment	0%
420 Tree growth	0%
430 Tree failure from overhang or dead tree without ice/snow	10.00%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	10.00%
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	10.00%
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 is planned.

Outage Causes

Substation Name Maxon
Substation Number 79
Circuit Name Industrial Park
Circuit Number 79234
Circuit Location 79234-Industrial Park
Total Circuit Length (Miles) 0.8
Customer Count 3.037037
Date of Last Circuit Trim 2017
Circuit 5 Year Average (SADI) 23.44618
Reporting Year (SAIDI) 28.317073
Circuit 5 Year Average (SAIFI) 0.336617638
Reporting Year (SAIFI) 0.658536593

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%
435 Tree failure from outside of ROW	0%
440 Trees with ice/snow	0%
470 Borrower crew cuts tree	0%
490 Maintenance, other	0%
500 Lightning	100.00%
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	0%

100%

Corrective Action Plan
 No corrective action is planned.