

# Grayson Rural Electric Cooperative Corporation

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RECEIVED

MAR 30 2021

PUBLIC SERVICE  
COMMISSION

March 29, 2021

Director of Engineering  
Kentucky Public Service Commission  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, Kentucky 40602-0615

RE: Administrative Case No. 2011-00450

Dear Director:

Please find enclosed for filing with the Commission Grayson Rural Electric Cooperative Cooperative's Distribution Utility Annual Reliability and Accountability Report for the year ending in 2020.

If any additional information is needed, please let us know.

Sincerely,



Bradley Cherry  
President and CEO

Enclosure

# KENTUCKY PUBLIC SERVICE COMMISSION

## Electric Distribution Utility Annual Reliability Report

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### SECTION 1: CONTACT INFORMATION

UTILITY NAME	Grayson Rural Electric Cooperative Corporation
REPORT PREPARED BY	Brian Poling/Mike Martin/Kyle Clevenger
E-MAIL ADDRESS OF PREPARER	<a href="mailto:kyle.clevenger@graysonrecc.com">kyle.clevenger@graysonrecc.com</a>
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E-MAIL ADDRESS OF PREPARER	<a href="mailto:brian.poling@graysonrecc.com">brian.poling@graysonrecc.com</a>
PHONE NUMBER OF PREPARER	606-474-5136

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### SECTION 2: REPORTING YEAR

CALENDAR YEAR OF REPORT	2020
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### SECTION 3: MAJOR EVENT DAYS (MED)

	T <sub>MED</sub>	30.324
FIRST DATE USED TO DETERMINE	T <sub>MED</sub>	1/1/2020
LAST DATE USED TO DETERMINE	T <sub>MED</sub>	12/31/2020
NUMBER OF MED IN REPORT YEAR		0

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NOTE: Per IEEE 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

# KENTUCKY PUBLIC SERVICE COMMISSION

## SECTION 4: SYSTEM RELIABILITY INFORMATION AND RESULTS

### System-wide Information

TOTAL CUSTOMERS:	14,246	TOTAL CIRCUITS	42
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#### Excluding MED

	5 YEAR AVERAGE		REPORTING YEAR
SAIDI	437.7	SAIDI	338.4
SAIFI	3.13	SAIFI	2.48

#### Including MED

	5 YEAR AVERAGE		REPORTING YEAR
SAIDI	465.2	SAIDI	338.4
SAIFI	3.22	SAIFI	2.48

NOTES:

- 1) All durations indices (SAIDI) are to be reported in units of minutes.
- 2) Reports are due on the first business day of April of each year.
- 3) Reports cover the calendar year ending in the December before the reports are due.
- 4) IEEE 1366 (latest version) issued to define SAIDI, SAIFI and MED

# KENTUCKY PUBLIC SERVICE COMMISSION

## SECTION 5: CIRCUIT REPORTING

(CIRCUITS WITH SAIDI AND/OR SAIFI EXCEEDING 5 YEAR AVERAGE)

(CIRCUIT NUMBERS SHOULD BE REPORTED EXCLUDING MED)

1. Airport Road (Sub #12)
2. Located approximately 0.2 miles off Rt. 7 on Rt. 986
3. Feeder 1
4. South along Rt. 7 toward Elliott County
5. There are approximately 78.7 miles of primary line.
6. 527 active consumers.
7. Circuit was cut in 2015
8. Causes of last years outages:

431 Tree Failure-off ROW	40.0%	26
600 Small animal/bird	21.5%	14
110 Maintenance	13.8%	9
300 Material or equipment fault/failure	4.6%	3
400 Decay/age of material/equipment	3.1%	2
430 Tree failure from overhang or dead tree without ice/snow	3.1%	2
100 Construction	1.5%	1
190 Other planned	1.5%	1
420 Tree growth	1.5%	1
500 Lightning	1.5%	1
520 Ice, sleet, frost, not trees	1.5%	1
710 Motor vehicle	1.5%	1
730 Fire	1.5%	1
800 Other	1.5%	1
999 Cause unknown	1.5%	1
9. The average SAIDI is 428.12
10. The SAIDI for 2020 was 435.05
11. The average SAIFI is 2.74
12. The SAIFI for 2020 was 3.42
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts.

# KENTUCKY PUBLIC SERVICE COMMISSION

## SECTION 5: CIRCUIT REPORTING

### Continued

1. Elliottville (Sub #7)
2. Located at the end of Fouch Rd of Rt. 32 near Elliottville
3. Feeder 4
4. Rt. 504
5. There are approximately 72.2 miles of primary line.
6. 445 active consumers.
7. Circuit was cut in 2019
8. Causes of last years outages:

431 Tree Failure-off ROW	28.4%	19
110 Maintenance	16.4%	11
600 Small animal/bird	14.9%	10
100 Construction	7.5%	5
500 Lightning	6.0%	4
300 Material or equipment fault/failure	4.5%	3
420 Tree growth	4.5%	3
430 Tree failure from overhang or dead tree without ice/snow	4.5%	3
590 Weather, other	3.0%	2
800 Other	3.0%	2
470 Borrower crew cuts tree	1.5%	1
510 Wind, not trees	1.5%	1
730 Fire	1.5%	1
770 Consumer's Problem	1.5%	1
790 Public, other	1.5%	1
9. The average SAIDI is 265.61
10. The SAIDI for 2020 was 280.21
11. The average SAIFI is 2.34
12. The SAIFI for 2020 was 1.44
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts.

# KENTUCKY PUBLIC SERVICE COMMISSION

## SECTION 5: CIRCUIT REPORTING

### Continued

1. Argentum (Sub #1)
2. Located on Rt. 7, 0.6 miles north of the junction of AA Highway.
3. Feeder 2
4. South along Rt. 7 toward gas plant
5. There are approximately 92.6 miles of primary line.
6. 700 active consumers.
7. Circuit was cut in 2011
8. Causes of last years outages:

431 Tree Failure-off ROW	28.4%	19
110 Maintenance	16.4%	11
600 Small animal/bird	14.9%	10
100 Construction	7.5%	5
500 Lightning	6.0%	4
300 Material or equipment fault/failure	4.5%	3
420 Tree growth	4.5%	3
430 Tree failure from overhang or dead tree without ice/snow	4.5%	3
590 Weather, other	3.0%	2
800 Other	3.0%	2
470 Borrower crew cuts tree	1.5%	1
510 Wind, not trees	1.5%	1
730 Fire	1.5%	1
770 Consumer's Problem	1.5%	1
790 Public, other	1.5%	1
9. The average SAIDI is 508.46
10. The SAIDI for 2020 was 490.22
11. The average SAIFI is 2.59
12. The SAIFI for 2020 was 4.26
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts. We are also putting our own hot-line crew to reduce the maintenance outages.

# KENTUCKY PUBLIC SERVICE COMMISSION

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Argentum (Sub #1)
2. Located on Rt. 7, 0.6 miles north of the junction of AA Highway.
3. Feeder 3
4. East Tygart Road
5. There are approximately 23.2 miles of primary line.
6. 241 active consumers.
7. Circuit was cut in 2020
8. Causes of last years outages:

300 Material or equipment fault/failure	13.6%	3
100 Construction	13.6%	3
590 Weather, other	13.6%	3
430 Tree failure from overhang or dead tree without ice/snow	9.1%	2
470 Borrower crew cuts tree	9.1%	2
600 Small animal/bird	9.1%	2
770 Consumer's Problem	9.1%	2
110 Maintenance	4.5%	1
410 Corrosion/abrasion of material/equipment	4.5%	1
420 Tree growth	4.5%	1
500 Lightning	4.5%	1
510 Wind, not trees	4.5%	1
9. The average SAIDI is 251.10
10. The SAIDI for 2020 was 208.22
11. The average SAIFI is 1.51
12. The SAIFI for 2020 was 2.63
13. The Material failure was a bad breaker that was replaced. We are putting our own hot-line together to reduce the maintenance and construction outages. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system.

# KENTUCKY PUBLIC SERVICE COMMISSION

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Carter City (Sub #10)
2. Located approx 0.2 miles north of Jct of 474 on Rt. 2 & 7
3. Feeder 4
4. Rt. 2 & 7 North
5. There are approximately 67.3 miles of primary line.
6. 437 active consumers.
7. Circuit was cut in 2009
8. Causes of last years outages:

431 Tree Failure-off ROW	36.36%
110 Maintenance	15.91%
600 Small animal/bird	11.36%
100 Construction	4.55%
300 Material or equipment fault/failure	4.55%
400 Decay/age of material/equipment	4.55%
420 Tree growth	4.55%
590 Weather, other	4.55%
800 Other	4.55%
430 Tree failure from overhang or dead tree without ice/snow	2.27%
500 Lightning	2.27%
770 Consumer's Problem	2.27%
790 Public, other	2.27%
9. The average SAIDI is 496.36
10. The SAIDI for 2020 was 168.43
11. The average SAIFI is 1.31
12. The SAIFI for 2020 was 1.91
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts. We are also putting our own hot-line crew to reduce the maintenance outages.



# KENTUCKY PUBLIC SERVICE COMMISSION

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## SECTION 5: CIRCUIT REPORTING

Continued

1. Leon (Sub #2)
2. The sub is located on Rt. 1661 approximately 1.8 miles from Jct Rt. 7
3. Feeder 1
4. North Rt. 7 toward Grayson
5. There are approximately 12.9 miles of primary line.
6. 178 active consumers.
7. Circuit was cut in 2009
8. Causes of last years outages:

110 Maintenance	28.6%	4
600 Small animal/bird	21.4%	3
431 Tree Failure-off ROW	14.3%	2
100 Construction	7.1%	1
360 Other equipment installation/design	7.1%	1
420 Tree growth	7.1%	1
510 Wind, not trees	7.1%	1
700 Customer-caused	7.1%	1
9. The average SAIDI is 443.90
10. The SAIDI for 2020 was 268.04
11. The average SAIFI is 1.74
12. The SAIFI for 2020 was 2.35
13. We are training our own hot-line crew which will reduce the maintenance/construction outages.  
We have also started installing small animal guards in areas with higher than normal occurrences.

# KENTUCKY PUBLIC SERVICE COMMISSION

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Leon (Sub #2)
2. The sub is located on Rt. 1661 approximately 1.8 miles from Jct Rt. 7
3. Feeder 2
4. Four Mile toward Adkins Loop
5. There are approximately 31.1 miles of primary line.
6. 237 active consumers.
7. Circuit was cut in 2015
8. Causes of last years outages:

431 Tree Failure-off ROW	35.42%
600 Small animal/bird	25.00%
110 Maintenance	10.42%
420 Tree growth	4.17%
190 Other planned	4.17%
100 Construction	4.17%
800 Other	2.08%
790 Public, other	2.08%
770 Consumer's Problem	2.08%
740 Public cuts tree	2.08%
610 Large animal	2.08%
590 Weather, other	2.08%
520 Ice, sleet, frost, not trees	2.08%
500 Lightning	2.08%
9. The average SAIDI is 827.38
10. The SAIDI for 2020 was 834.04
11. The average SAIFI is 3.11
12. The SAIFI for 2020 was 4.09
13. We are training our own hot-line crew which will reduce the maintenance/construction outages.  
We have also started installing small animal guards in areas with higher than normal occurrences.

# KENTUCKY PUBLIC SERVICE COMMISSION

## SECTION 5: CIRCUIT REPORTING

### Continued

1. Leon (Sub #2)
2. The sub is located on Rt. 1661 approximately 1.8 miles from Jct Rt. 7
3. Feeder 3
4. South Rt. 7 toward Lake
5. There are approximately 23.5 miles of primary line.
6. 246 active consumers.
7. Circuit was cut in 2013
8. Causes of last years outages:

431 Tree Failure-off ROW	28.3%	13
600 Small animal/bird	21.7%	10
110 Maintenance	13.0%	6
300 Material or equipment fault/failure	6.5%	3
420 Tree growth	6.5%	3
100 Construction	4.3%	2
430 Tree failure from overhang or dead tree without ice/snow	4.3%	2
400 Decay/age of material/equipment	2.2%	1
500 Lightning	2.2%	1
520 Ice, sleet, frost, not trees	2.2%	1
590 Weather, other	2.2%	1
700 Customer-caused	2.2%	1
770 Consumer's Problem	2.2%	1
999 Cause unknown	2.2%	1
9. The average SAIDI is 411.51
10. The SAIDI for 2020 was 681.50
11. The average SAIFI is 2.09
12. The SAIFI for 2020 was 3.55
13. We are training our own hot-line crew which will reduce the maintenance/construction indices.  
We have also started installing small animal guards in areas with higher than normal occurrences.

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Low Gap (Sub #11)
2. Located just off Rt. 2 approximately 1 mile from the junction of Rt. 1459
3. Feeder 3
4. Low Gap Rd to Rt. 1/Argillite
5. There are approximately 45.6 miles of primary line.
6. 468 active consumers.
7. Circuit was cut in 2014
8. Causes of last years outages:

431 Tree Failure-off ROW	38.60%
110 Maintenance	19.30%
600 Small animal/bird	14.04%
590 Weather, other	7.02%
100 Construction	5.26%
430 Tree failure from overhang or dead tree without ice/snow	3.51%
770 Consumer's Problem	3.51%
300 Material or equipment fault/failure	1.75%
470 Borrower crew cuts tree	1.75%
490 Maintenance, other	1.75%
510 Wind, not trees	1.75%
800 Other	1.75%
9. The average SAIDI is 747.11
10. The SAIDI for 2020 was 361.18
11. The average SAIFI is 3.90
12. The SAIFI for 2020 was 3.91
13. We are training our own hot-line crew which will reduce the maintenance/construction indices.  
We have also started installing small animal guards in areas with higher than normal occurrences.

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Mazie (Sub #4)
2. Located approximately 11.5 miles east of Sandy Hook on Rt. 32.
3. Feeder 1
4. Rt. 32 toward Isonville
5. There are approximately 61.2 miles of primary line.
6. 427 active consumers.
7. Circuit was cut in 2018
8. Causes of last years outages:

431 Tree Failure-off ROW	27.27%
600 Small animal/bird	24.24%
110 Maintenance	22.73%
400 Decay/age of material/equipment	7.58%
300 Material or equipment fault/failure	4.55%
190 Other planned	3.03%
420 Tree growth	3.03%
430 Tree failure from overhang or dead tree without ice/snow	1.52%
470 Borrower crew cuts tree	1.52%
710 Motor vehicle	1.52%
790 Public, other	1.52%
800 Other	1.52%
9. The average SAIDI is 689.50
10. The SAIDI for 2020 was 610.09
11. The average SAIFI is 4.16
12. The SAIFI for 2020 was 4.20
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts. We are also putting our own hot-line crew to reduce the maintenance outages.

# KENTUCKY PUBLIC SERVICE COMMISSION

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Pelfrey (Sub #5)
2. Located on US 60 0.8 miles west from the Junction of Grahn Road (Rt. 182)
3. Feeder 1
4. West to West Carter/Rt. 2
5. There are approximately 74 miles of primary line.
6. 603 active consumers.
7. Circuit was cut in 2012
8. Causes of last years outages:

431 Tree Failure-off ROW	22.89%
600 Small animal/bird	21.69%
110 Maintenance	15.66%
510 Wind, not trees	6.02%
800 Other	6.02%
100 Construction	4.82%
300 Material or equipment fault/failure	4.82%
400 Decay/age of material/equipment	2.41%
420 Tree growth	2.41%
500 Lightning	2.41%
590 Weather, other	2.41%
320 Conductor sag or inadequate clearance	1.20%
610 Large animal	1.20%
700 Customer-caused	1.20%
730 Fire	1.20%
750 Vandalism	1.20%
999 Cause unknown	2.41%
9. The average SAIDI is 455.44
10. The SAIDI for 2020 was 825.30
11. The average SAIFI is 2.47
12. The SAIFI for 2020 was 3.26
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts. We are also putting our own hot-line crew to reduce the maintenance outages.

# KENTUCKY PUBLIC SERVICE COMMISSION

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Pelfrey (Sub #5)
2. Located on US 60 0.8 miles west from the Junction of Grahn Road (Rt. 182)
3. Feeder 2
4. East toward Cascade Road/Biggs Hill
5. There are approximately 26 miles of primary line.
6. 350 active consumers.
7. Circuit was cut in 2017
8. Causes of last years outages:

431 Tree Failure-off ROW	25.49%
600 Small animal/bird	11.76%
110 Maintenance	9.80%
400 Decay/age of material/equipment	7.84%
510 Wind, not trees	7.84%
300 Material or equipment fault/failure	5.88%
420 Tree growth	5.88%
500 Lightning	5.88%
770 Consumer's Problem	5.88%
430 Tree failure from overhang or dead tree without ice/snow	3.92%
590 Weather, other	3.92%
470 Borrower crew cuts tree	1.96%
790 Public, other	1.96%
800 Other	1.96%
9. The average SAIDI is 763.17
10. The SAIDI for 2020 was 651.56
11. The average SAIFI is 3.36
12. The SAIFI for 2020 was 4.32
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts. We are also putting our own hot-line crew to reduce the maintenance outages.

# KENTUCKY PUBLIC SERVICE COMMISSION

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## SECTION 5: CIRCUIT REPORTING

### Continued

1. Warnock (Sub #6)
2. Located on Hoods Run Road located 1.7 miles from Jct of Rt. 7 & 2 off Rt. 2
3. Feeder 2
4. Rt. 2 to Greenbo
5. There are approximately 7.2 miles of primary line.
6. 52 active consumers.
7. Circuit was cut in 2011
8. Causes of last years outages:

600 Small animal/bird	42.86%
431 Tree Failure-off ROW	28.57%
110 Maintenance	14.29%
800 Other	14.29%
9. The average SAIDI is 148.07
10. The SAIDI for 2020 was 262.37
11. The average SAIFI is 0.71
12. The SAIFI for 2020 was 3.17
13. We will be hiring an arborist to evaluate our options for dealing with off right-of-way trees across our system. We have also started installing small animal guards in areas with higher than normal contacts. We are also putting our own hot-line crew to reduce the maintenance outages.



SECTION 6: VEGETATION MANAGEMENT PLAN REVIEW

INCLUDE CURRENT VEGETATION MANAGEMENT PLAN

Additional pages may be attached as needed.

In 2020 we cleared 64.5 miles of line in our circuit cutting program on Warnock Feeder 1 and Argentum Feeder 1. We also trimmed 10,302 yard trees.

We plan on cutting three circuits in 2021, Leon Feeder 1, Pactolus Feeder 2, and Carter City Feeder 4. These circuits total 94.9 miles of line.

SECTION 7: UTILITY COMMENTS

Due to the increasing number of off right of way trees that are causing outages across our system, we plan on utilizing an arborist for at least 6 months in hopes they can help us develop a cost effective way of dealing with this problem. In our observations, there has not always been an obvious visual indication forewarning us of a potential problem. A majority of the trees that have fallen have been hollow oak trees with no outward signs of problems.

We have been addressing those off right of way trees that show warning signs with utilizing our circuit cutting crews as they move down a circuit.