

KENTUCKY PUBLIC SERVICE COMMISSION

Electric Distribution Utility Annual Reliability Report

SECTION 1: CONTACT INFORMATION

UTILITY NAME	Meade County RECC
REPORT PREPARED BY	David R. Poe
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SECTION 2: REPORTING YEAR

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

TMED	9.62359
FIRST DATE USED TO DETERMINE TMED	1/1/2020
LAST DATE USED TO DETERMINE TMED	12/31/2020
NUMBER OF MED IN REPORT YEAR	0

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 INFORMATION AND RESULTS

System-wide Information			
TOTAL CUSTOMERS	<u>30282</u>	TOTAL CIRCUITS	<u>79</u>
		Excluding MED	
5 YEAR AVERAGE		REPORTING YEAR	
SAIDI	<u>103.85</u>	SAIDI	<u>68.42</u>
SAIFI	<u>1.34</u>	SAIFI	<u>0.78</u>
		Including MED	
5 YEAR AVERAGE		REPORTING YEAR	
SAIDI	<u>303.09</u>	SAIDI	<u>68.42</u>
SAIFI	<u>1.65</u>	SAIFI	<u>0.78</u>

Notes:

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

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SECTION 5: CIRCUIT REPORTING

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

(CIRCUIT NUMBERS SHOULD BE REPORTED EXCLUDING MED)

CIRCUIT #1

1. SUBSTATION NAME AND NUMBER IRVINGTON
 2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)
North side of Irvington at the very west end of Kentucky Street
 3. CIRCUIT NAME AND NUMBER
Feeder 6
 4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)
Northwest from station to Hwy 477, west along Hwy 261 to Hwy 86, north along Hwy 261, northwest
 5. TOTAL CIRCUIT LENGTH (MILES) along Fackler Rd, and northwest along Webster/Lodiburg Road.
68.8
 6. CUSTOMER COUNT FOR THIS CIRCUIT
534
 7. DATE OF LAST CIRCUIT TRIM (VM)
2016
- | 8. Cause | Count | Percentage | Customer-Hours | Customer-Count | SAIDI | SAIFI |
|------------------|-------|------------|----------------|----------------|-------|-------|
| Public Cause | 3 | 30 | 504.4 | 550 | 56.67 | 1.03 |
| Line Hardware | 1 | 10 | 324.58 | 205 | 36.47 | 0.38 |
| Pre-Arranged | 1 | 10 | 261.23 | 528 | 29.35 | 0.99 |
| Trees out of R/W | 2 | 20 | 13.68 | 3 | 1.54 | 0.01 |
| Other | 2 | 20 | 4.02 | 2 | 0.45 | 0 |
9. CIRCUIT 5 YEAR AVERAGE (SAIDI) 41.42
 10. REPORTING YEAR (SAIDI) 124.71
 11. CIRCUIT 5 YEAR AVERAGE (SAIFI) 0.56
 12. REPORTING YEAR (SAIFI) 2.42
 13. CORRECTIVE ACTION PLAN

On 3/12/20 a car ran off of the road, struck, and broke a 3-phase pole. The situation was temporarily repaired for the night and then taken back out of service the following day to permanently repair the pole.

No further actions are deemed necessary.

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)

CIRCUIT #2

1. SUBSTATION NAME AND NUMBER HARDINBURG2

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

West side of Hardinsburg along Hwy 992

3. CIRCUIT NAME AND NUMBER

Feeder 5

4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)

East into Hardinsburg

5. TOTAL CIRCUIT LENGTH (MILES)

1.92

6. CUSTOMER COUNT FOR THIS CIRCUIT

111

7. DATE OF LAST CIRCUIT TRIM (VM)

2016

8. Cause	Count	Percentage	Customer-Hours	Customer-Count	SAIDI	SAIFI
Birds/Animals	2	40	243	116	131.35	1.05
Power Supplier	1	20	108	108	58.38	0.97
Broken Pole	1	20	14.67	5	7.93	0.05
KVA	1	20	2.86	4	1.55	0.04

9. CIRCUIT 5 YEAR AVERAGE (SAIDI) 20.04

10. REPORTING YEAR (SAIDI) 199.2

11. CIRCUIT 5 YEAR AVERAGE (SAIFI) 0.23

12. REPORTING YEAR (SAIFI) 2.1

13. CORRECTIVE ACTION PLAN

On 7/26/20 a hawk flew into the substation, causing the high-side fuses to blow and creating a 2 1/4 hour outage on the entire substation.

On 10/15/20, Big Rivers Electric (power supplier) experienced an outage of the 69 KV feed to the substation creating an hour long outage on the entire substation.

Relatively high reliably feeder and substation; therefore no action is deemed necessary.

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)

CIRCUIT #3

1. SUBSTATION NAME AND NUMBER IRVINGTON

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

3. CIRCUIT NAME AND NUMBER
Feeder 4

4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)

5. TOTAL CIRCUIT LENGTH (MILES)

6. CUSTOMER COUNT FOR THIS CIRCUIT
475

7. DATE OF LAST CIRCUIT TRIM (VM)
2016

8. Cause	Count	Percentage	Customer-Hours	Customer-Count	SAIDI	SAIFI
Trees out of R/W	1	10	1218.28	35	153.89	0.07
Public Cause	2	20	988.16	483	124.82	1.02
Storms	4	40	89.99	22	11.37	0.05
Pre-Arranged	2	20	5.12	8	0.65	0.02
Birds/Animals	1	10	1.34	2	0.17	0

9. CIRCUIT 5 YEAR AVERAGE (SAIDI) 23.4

10. REPORTING YEAR (SAIDI) 290.89

11. CIRCUIT 5 YEAR AVERAGE (SAIFI) 0.58

12. REPORTING YEAR (SAIFI) 1.16

13. CORRECTIVE ACTION PLAN

On 10/23/20 a car ran off of the road, struck, and broke a 3-phase pole outaging the entire feeder for approximately 2 hours.

No further actions are deemed necessary.

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)

CIRCUIT #4

- 1. SUBSTATION NAME AND NUMBER HARDINSBURG2
- 2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)
West side of Hardinsburg along Hwy 992
- 3. CIRCUIT NAME AND NUMBER
Feeder 4
- 4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)
Northwest along US-60
- 5. TOTAL CIRCUIT LENGTH (MILES)
11.5
- 6. CUSTOMER COUNT FOR THIS CIRCUIT
109
- 7. DATE OF LAST CIRCUIT TRIM (VM)
2016

8. Cause	Count	Percentage	Customer-Hours	Customer-Count	SAIDI	SAIFI
Birds/Animals	1	25	241.41	108	132.89	0.99
Power Supplier	1	25	109	109	60	1
Storms	2	50	15.21	22	8.37	0.2

- 9. CIRCUIT 5 YEAR AVERAGE (SAIDI) 34.11
- 10. REPORTING YEAR (SAIDI) 201.26
- 11. CIRCUIT 5 YEAR AVERAGE (SAIFI) 0.35
- 12. REPORTING YEAR (SAIFI) 2.19
- 13. CORRECTIVE ACTION PLAN

On 7/26/20 a hawk flew into the substation, causing the high-side fuses to blow and creating a 2 1/4 hour outage on the entire substation.

On 10/15/20, Big Rivers Electric (power supplier) experienced an outage of the 69 KV feed to the substation creating an hour long outage on the entire substation.

Relatively high reliably feeder and substation; therefore no action is deemed necessary.

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)

CIRCUIT #5

1. SUBSTATION NAME AND NUMBER HARDINSBURG2
2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)
West side of Hardinsburg along Hwy 992
3. CIRCUIT NAME AND NUMBER
Feeder 3
4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)
West along Hwy 992
5. TOTAL CIRCUIT LENGTH (MILES)
27.2
6. CUSTOMER COUNT FOR THIS CIRCUIT
36
7. DATE OF LAST CIRCUIT TRIM (VM)
2016

8.	Cause	Count	Percentage	Customer-Hours	Customer-Count	SAIDI	SAIFI
	Birds/Animals	1	50	64.8	35	108	0.97
	Power Supplier	1	50	36	36	60	1

9. CIRCUIT 5 YEAR AVERAGE (SAIDI) 31.08
10. REPORTING YEAR (SAIDI) 168
11. CIRCUIT 5 YEAR AVERAGE (SAIFI) 0.77
12. REPORTING YEAR (SAIFI) 1.97
13. CORRECTIVE ACTION PLAN

On 7/26/20 a hawk flew into the substation, causing the high-side fuses to blow and creating a 2 1/4 hour outage on the entire substation.

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SECTION 5: CIRCUIT REPORTING

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

(CIRCUIT NUMBERS SHOULD BE REPORTED EXCLUDING MED)

CIRCUIT #6

1. SUBSTATION NAME AND NUMBER

FORDSVILLE

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

East along Hwy 54 from Fordsville, left onto Fordsville-Askins Rd, sub is on right

3. CIRCUIT NAME AND NUMBER

Feeder 3

4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)

East along Hwy 54, then northeast along Hwy 110

5. TOTAL CIRCUIT LENGTH (MILES)

41.4

6. CUSTOMER COUNT FOR THIS CIRCUIT

226

7. DATE OF LAST CIRCUIT TRIM (VM)

2019

8. Cause	Count	Percentage	Customer-Hours	Customer-Count	SAIDI	SAIFI
Storms	2	18.18	979.26	237	259.98	1.05
Trees out of R/W	4	36.36	448.1	227	118.97	1
KVA	2	18.18	130.87	36	34.74	0.16
Birds/Animals	1	9.09	23.26	10	6.18	0.04
Public Cause	2	18.18	17.02	11	4.52	0.05

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

132.24

10. REPORTING YEAR (SAIDI)

424.38

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

1.42

12. REPORTING YEAR (SAIFI)

2.31

13. CORRECTIVE ACTION PLAN

On 7/11/21, storms rolled through the area toppling trees and outaging the entire feeder for 4 1/4 hrs.

On 4/29/21, a tree located outside of the ROW fell onto the line outaging the entire feeder for approximately 2 hours.

The substation ROW was trimmed in 2019 and sprayed in 2020. This feeder distributes power in some of the most rugged and tree covered terrain in the service territory. No further action is deemed necessary.

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SECTION 5: CIRCUIT REPORTING

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

(CIRCUIT NUMBERS SHOULD BE REPORTED EXCLUDING MED)

CIRCUIT #7

1. SUBSTATION NAME AND NUMBER HARDINSBURG2
2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)
West side of Hardinsburg along Hwy 992
3. CIRCUIT NAME AND NUMBER
Feeder 2
4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)
West along Hwy 992
5. TOTAL CIRCUIT LENGTH (MILES)
27.2
6. CUSTOMER COUNT FOR THIS CIRCUIT
193
7. DATE OF LAST CIRCUIT TRIM (VM)
2016
8.

Cause	Count	Percentage	Customer-Hours	Customer-Count	SAIDI	SAIFI
Birds/Animals	3	37.5	423.31	201	131.6	1.04
Power Supplier	1	12.5	192	192	59.69	0.99
Storms	3	37.5	9.6	7	2.98	0.04
Trees out of R/W	1	12.5	1.99	2	0.62	0.01
9. CIRCUIT 5 YEAR AVERAGE (SAIDI) 23.83
10. REPORTING YEAR (SAIDI) 194.89
11. CIRCUIT 5 YEAR AVERAGE (SAIFI) 0.37
12. REPORTING YEAR (SAIFI) 2.08
13. CORRECTIVE ACTION PLAN

On 7/26/20 a hawk flew into the substation, causing the high-side fuses to blow and creating a 2 1/4 hour outage on the entire substation.

On 10/15/20, Big Rivers Electric (power supplier) experienced an outage of the 69 KV feed to the substation creating an hour long outage on the entire substation.

Relatively high reliability feeder and substation; therefore no action is deemed necessary.

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

(CIRCUIT NUMBERS SHOULD BE REPORTED EXCLUDING MED)

CIRCUIT #8

1. SUBSTATION NAME AND NUMBER FLAHERTY
2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)
North edge of Flaherty on a hill to the west of Hwy 144
3. CIRCUIT NAME AND NUMBER
Feeder 1
4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)
North along Hwy 313 to Hwy 333, west and south along Hwy 333, also west along Shircliff Rd
5. TOTAL CIRCUIT LENGTH (MILES)
41.9
6. CUSTOMER COUNT FOR THIS CIRCUIT
458
7. DATE OF LAST CIRCUIT TRIM (VM)
2020
- | 8. Cause | Count | Percentage | Customer-Hours | Customer-Count | SAIDI | SAIFI |
|------------------|-------|------------|----------------|----------------|-------|-------|
| Trees out of R/W | 2 | 28.57 | 74.58 | 75 | 9.77 | 0.16 |
| Public Cause | 1 | 14.29 | 48.51 | 56 | 6.35 | 0.12 |
| Birds/Animals | 2 | 28.57 | 22.58 | 27 | 2.96 | 0.06 |
| Pre-Arranged | 1 | 14.29 | 7.13 | 3 | 0.93 | 0.01 |
| Conductor | 1 | 14.29 | 0.81 | 1 | 0.11 | 0 |
9. CIRCUIT 5 YEAR AVERAGE (SAIDI) 6.78
10. REPORTING YEAR (SAIDI) 20.12
11. CIRCUIT 5 YEAR AVERAGE (SAIFI) 0.24
12. REPORTING YEAR (SAIFI) 0.35
13. CORRECTIVE ACTION PLAN

This feeder is one the most reliable feeders in the system as the 5-yr average shows. No further actions are deemed necessary.

KENTUCKY PUBLIC SERVICE COMMISSION

SECTION 6: VEGETATION MANAGEMENT PLAN REVIEW

INCLUDE CURRENT VEGETATION MANAGEMENT PLAN

Additional page may be attached as needed.

Meade County RECC is now in year 2 of a 3 year contract with Townsend Tree Service. As noted last year, ROW maintenance costs have increased greatly; costs have increased approximately 50% from two years ago, due mainly to the cost of labor.

Vegetation's contribution to the SAIDI of the system was only 0.56 minutes for "In the ROW" events and 0.0078 for SAIFI which was the 2nd lowest within the last 6 years for both indices.

At this time there is no anticipated change to the existing ROW program.

SECTION 7: UTILITY COMMENTS

The reliability numbers have improved considerably over the last 6 years. SAIFI and SAIDI indices have both decreased by more than 50 %. Weather was particularly kind in 2020 but most causes showed improvement. The one area that still shows concern is public causes, particularly distracted driving. There were several events where drivers left the roadways and hit poles, thus outaging the circuits.

Overall 2020 was the best in service reliability for MCRECC in many years.