### **Cumberland Valley Electric, Inc.**

P.O. Box 440 Gray, Kentucky 40734

## RECEIVED

APR 26 2016

Public Service Commission

Executive Director
Public Service Commission
211 Sower Blvd
Frankfort, KY 40602

April 21, 2016

RE: Cumberland Valley Electric's 2015 Reliability Report

Dear Sir:

Please find enclosed herewith a CD that contains Cumberland Valley Electric's annual distribution reliability report for 2015. This report was previously sent electronically via email to Steve Kingsolver. It is now submitted in a hard copy format.

Sincerely,

Mark D. Abner, P.E.

Cumberland Valley Electric, Inc.

Mark almer

### Electric Distribution Utility Annual Reliability Report

### **SECTION 1: CONTACT INFORMATION**

UTILITY NAME REPORT PREPARED BY E-MAIL ADDRESS OF PREPARER PHONE NUMBER OF PREPARER Cumberland Valley Electric

Mark Abner

mark.abner@cumberlandvalley.coop

1-800-513-2677

### **SECTION 2: REPORTING YEAR**

CALENDAR YEAR OF REPORT

2015

### **SECTION 3: MAJOR EVENT DAYS (MED)**

 $\mathsf{T}_{\mathsf{MED}}$ 

13.262

FIRST DATE USED TO DETERMINE  $T_{\text{MED}}$  LAST DATE USED TO DETERMINE  $T_{\text{MED}}$ 

1/1/2010

NUMBER OF MED IN REPORT YEAR

0

NOTE: Per IEEE 1366  $T_{\text{MED}}$  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 23809

09 TOTAL CIRCUITS

64

#### **Excluding MED**

	5 YEAR AVERAGE	<b>5 YEAR AVERAGE</b>		REPORTING YEAR
SAIDI	127.66	127.66	SAIDI	169.361
SAIFI	1.36	1.36	SAIFI	1.98

### **Including MED**

5 YEAR AVERAGE			REPORTING YEAR	
SAIDI	166.9	SAIDI	169.361	
SAIFI	1.78	SAIFI	1.98	

#### 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 T<sub>MFD</sub>

#### **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

Bacon Creek 87

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley Bacon Crk Rd Corbin

3. CIRCUIT NAME AND NUMBER

I 75

- 4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)
- S Corbin I-75 Exit 25 US 25W
- 5. TOTAL CIRCUIT LENGTH (MILES)

6.3

6. CUSTOMER COUNT FOR THIS CIRCUIT

43

7.. DATE OF LAST CIRCUIT TRIM (VM)

2013

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

power supplier 25%, unknown 76%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

1.2

10. REPORTING YEAR (SAIDI)

2.359

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

ი 12

12. REPORTING YEAR (SAIFI)

0.07

13. CORRECTIVE ACTION PLAN

Can not design corrective plan when majority of outage causes are unknown.

# REPEAT INFORMATION FOR EACH CIRCUIT EXCEEDING ITS 5 YEAR AVERAGE FOR SAIDI AND/OR SAIFI

### SECTION 6: VEGETATION MANAGEMENT PLAN REVIEW

### **INCLUDE CURRENT VEGETATION MANAGEMENT PLAN**

Additional page may be attached as needed.

CVE plans to trim Jellico Creek and Goldbug substation circuits in 2016.		
Emanuel and Girdler substation circuits are planned for 2017.		
SECTION 7: UTILITY COMMENTS		
SECTION 7: UTILITY COMMENTS		
SECTION 7: UTILITY COMMENTS	,	
SECTION 7: UTILITY COMMENTS		

### **CIRCUIT #7:**

1. SUBSTATION NAME AND NUMBER

Chad 103

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Harlan KY522 Chad

3. CIRCUIT NAME AND NUMBER

Line Fork

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

KY522, US119, Chad, Totz, Putney

5. TOTAL CIRCUIT LENGTH (MILES)

80

6. CUSTOMER COUNT FOR THIS CIRCUIT

1004

7.. DATE OF LAST CIRCUIT TRIM (VM)

2012

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unknown 10%, bad r/w 3%, on r/w tree 41%, off r/w tree 29%, equip fail 17%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

712.76

10. REPORTING YEAR (SAIDI)

821.885

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

29.29

12. REPORTING YEAR (SAIFI)

9.46

13. CORRECTIVE ACTION PLAN

### **CIRCUIT #9:**

1. SUBSTATION NAME AND NUMBER

Emanuel 2

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, KY229, Bailey Switch

3. CIRCUIT NAME AND NUMBER

Swan Pond

1

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

Barbourville, KY459, KY11, Baily Sw. California Hol, Sharps Gap, Swan Pond, Davis Bend

5. TOTAL CIRCUIT LENGTH (MILES)

83.1

6. CUSTOMER COUNT FOR THIS CIRCUIT

819

7.. DATE OF LAST CIRCUIT TRIM (VM)

2011

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unknown 5%, bad r/w 12%, sm animal 6%, on r/w tree 58%, off r/w tree 19%, equip fail 1%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

147.33

10. REPORTING YEAR (SAIDI)

207.645

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

8.26

12. REPORTING YEAR (SAIFI)

3.65

13. CORRECTIVE ACTION PLAN

trim/cut trees as needed

### **CIRCUIT #10:**

1. SUBSTATION NAME AND NUMBER

Emanuel 2

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, KY229, Bailey Switch

3. CIRCUIT NAME AND NUMBER

Canon

2

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

KY229, KY3438, KY11, Valentine Br

5. TOTAL CIRCUIT LENGTH (MILES)

27

6. CUSTOMER COUNT FOR THIS CIRCUIT

369

7.. DATE OF LAST CIRCUIT TRIM (VM)

2011

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unknown 12%, sm animal 10%, on r/w tree 33%, storm 43%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

54.7

10. REPORTING YEAR (SAIDI)

65.202

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

2.78

12. REPORTING YEAR (SAIFI)

0.54

13. CORRECTIVE ACTION PLAN

### **CIRCUIT #12:**

1. SUBSTATION NAME AND NUMBER

Girdler 106

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, Hampton Cemetery, Girdler

3. CIRCUIT NAME AND NUMBER

Girdler

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

Woollum, KY11, Hammons Fork, Disapointment

5. TOTAL CIRCUIT LENGTH (MILES)

68.4

6. CUSTOMER COUNT FOR THIS CIRCUIT

348

7.. DATE OF LAST CIRCUIT TRIM (VM)

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

planned const 7%, planned maint 13%, sm animal 1%, on r/w tree 28%, eq fail 30%, unk 18%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

293.58

10. REPORTING YEAR (SAIDI)

581.134

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

10.01

12. REPORTING YEAR (SAIFI)

7.88

13. CORRECTIVE ACTION PLAN

inspect facilities for deficiencies, trim/remove trees as needed

### CIRCUIT #14:

1. SUBSTATION NAME AND NUMBER

Girdler 106

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, Hampton Cemetery, Girdler

3. CIRCUIT NAME AND NUMBER

Girdler

3

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

Cranes Nest, KY1304, KY1803

5. TOTAL CIRCUIT LENGTH (MILES)

47.3

6. CUSTOMER COUNT FOR THIS CIRCUIT

386

7.. DATE OF LAST CIRCUIT TRIM (VM)

2014

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unk 9%, on r/w tree 1%, off r/w tree 77%, vehicle accident 13%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

245.79

10. REPORTING YEAR (SAIDI)

475.736

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

5.42

12. REPORTING YEAR (SAIFI)

2.13

13. CORRECTIVE ACTION PLAN

### **CIRCUIT #16:**

1. SUBSTATION NAME AND NUMBER

Goldbug 64

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, US25W, Goldbug

3. CIRCUIT NAME AND NUMBER

Canadatown

4

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

Canadatown, US25W, KY204, Clio

5. TOTAL CIRCUIT LENGTH (MILES)

112

6. CUSTOMER COUNT FOR THIS CIRCUIT

1044

7.. DATE OF LAST CIRCUIT TRIM (VM)

2011

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

bad r/w 1%, sm animal 2%, on r/w tree 56%, off r/w tree 2%, storm 28%, eg fail 4%, unk 7%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

52.92

10. REPORTING YEAR (SAIDI)

96.558

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

3.21

12. REPORTING YEAR (SAIFI)

1.65

13. CORRECTIVE ACTION PLAN

### CIRCUIT #18:

1. SUBSTATION NAME AND NUMBER

Hinkle 53

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, KY1304, Bimble

3. CIRCUIT NAME AND NUMBER

Road Fork

1

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

Bimble, KY1304, KY223, Road Fork

5. TOTAL CIRCUIT LENGTH (MILES)

43

6. CUSTOMER COUNT FOR THIS CIRCUIT

391

7.. DATE OF LAST CIRCUIT TRIM (VM)

2013

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unk 56%, bad r/w 1%, on r/w tree 24%, off r/w tree 1%, storm 2%, eq fail 5%, vehicle accident 10%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

72.05

10. REPORTING YEAR (SAIDI)

96.668

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

3.18

12. REPORTING YEAR (SAIFI)

1.86

13. CORRECTIVE ACTION PLAN

### CIRCUIT #20:

1. SUBSTATION NAME AND NUMBER

Hinkle 53

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, KY1304, Bimble

3. CIRCUIT NAME AND NUMBER

Road Fork

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

Artemus, KY225, Artemus, Trosper

5. TOTAL CIRCUIT LENGTH (MILES)

68.6

6. CUSTOMER COUNT FOR THIS CIRCUIT

454

7.. DATE OF LAST CIRCUIT TRIM (VM)

2013

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unk 10%, on r/w tree 88%, off r/w tree 1%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

248.57

10. REPORTING YEAR (SAIDI)

621.713

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

3.73

12. REPORTING YEAR (SAIFI)

3.07

13. CORRECTIVE ACTION PLAN

### **CIRCUIT #22:**

1. SUBSTATION NAME AND NUMBER

Oven Fork 64

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Letcher, US119, Oven Fork

3. CIRCUIT NAME AND NUMBER

Partridge

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

Partridge, US119

5. TOTAL CIRCUIT LENGTH (MILES)

47.1

6. CUSTOMER COUNT FOR THIS CIRCUIT

470

7.. DATE OF LAST CIRCUIT TRIM (VM)

2012

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unk 2%, bad r/w 1%, off r/w tree 58%, eq fail 38%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

87.93

10. REPORTING YEAR (SAIDI)

96.468

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

2.55

12. REPORTING YEAR (SAIFI)

0.75

13. CORRECTIVE ACTION PLAN

### **CIRCUIT #24:**

1. SUBSTATION NAME AND NUMBER

Rockhold 22

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, KY3423, Rockhold

3. CIRCUIT NAME AND NUMBER

Meadow Creek

2

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

Rockhold, KY3423, KY779, KY1064, Meadow Creek

5. TOTAL CIRCUIT LENGTH (MILES)

61.5

6. CUSTOMER COUNT FOR THIS CIRCUIT

386

7.. DATE OF LAST CIRCUIT TRIM (VM)

2015

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unk 53%, power supply 1%, sm animal 13%, on r/w tree 26%, off r/w tree 2%, eq fail 1%, vehicle accident 3%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

99.53

10. REPORTING YEAR (SAIDI)

115.809

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

4.24

12. REPORTING YEAR (SAIFI)

1.88

13. CORRECTIVE ACTION PLAN

majority of outage cause is unknown, trim/remove trees as identified, install animal protection where needed

### CIRCUIT #26:

1. SUBSTATION NAME AND NUMBER

South Corbin 49

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, Corinth Ch Rd, Corbin

3. CIRCUIT NAME AND NUMBER

High Top

2

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

Corbin, US25W, High Top Rd

5. TOTAL CIRCUIT LENGTH (MILES)

50.3

6. CUSTOMER COUNT FOR THIS CIRCUIT

649

7.. DATE OF LAST CIRCUIT TRIM (VM)

2012

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

power supply 14%, sm animal 5%, storm 2%, eq fail 76%, lightning 1%, unk 1%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

91.04

10. REPORTING YEAR (SAIDI)

191.879

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

3.85

12. REPORTING YEAR (SAIFI)

2.06

13. CORRECTIVE ACTION PLAN

76% equip failure is believed attributable to power supply equipment beyond control of cooperative.

### CIRCUIT #28:

1. SUBSTATION NAME AND NUMBER

South Corbin 4

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, Corinth Ch Rd, Corbin

3. CIRCUIT NAME AND NUMBER

I 75/S Corbin

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

Corbin, US25W, Exit 25

5. TOTAL CIRCUIT LENGTH (MILES)

11.6

6. CUSTOMER COUNT FOR THIS CIRCUIT

170

7.. DATE OF LAST CIRCUIT TRIM (VM)

2012

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

power supply 67%, sm animal 27%, storm 1%, lightning 4%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

38.15

10. REPORTING YEAR (SAIDI)

67.767

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

3.44

12. REPORTING YEAR (SAIFI)

2.22

13. CORRECTIVE ACTION PLAN

power supply beyond cooperative control. Install animal protection where needed.

SECTION 5: CIRCUIT REPORTING	CIRCL
(CIRCUITS WITH SAIDI AND/OR SAIFI EXCEEDING 5 YEAR AVERAGE)	1. SUBST/
(CIRCUIT NUMBERS SHOULD BE REPORTED EXCLUDING MED) CIRCUIT #2:	Carpenter 2. SUBST/ Whitley 3. CIRCUI
1. SUBSTATION NAME AND NUMBER Bacon Creek 87 2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN) Whitley Bacon Crk Rd Corbin 3. CIRCUIT NAME AND NUMBER Hospital 2 4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA) Baptist Regional Med Ctr	Greasy Cro 4. CIRCUI Siler, KY92 5. TOTAL 80.9 6. CUSTO 1557 7 DATE ( 2013
5. TOTAL CIRCUIT LENGTH (MILES) 1.14	8. LIST OI NUMBE
6. CUSTOMER COUNT FOR THIS CIRCUIT  1  7 DATE OF LAST CIRCUIT TRIM (VM)  2013	sm animal: 9. CIRCUI 60.69 10. REPOI
<ul> <li>8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE failed URD cable 100%</li> <li>9. CIRCUIT 5 YEAR AVERAGE (SAIDI)</li> <li>73</li> <li>10. REPORTING YEAR (SAIDI)</li> <li>219</li> <li>11. CIRCUIT 5 YEAR AVERAGE (SAIFI)  1</li> <li>12. REPORTING YEAR (SAIFI)  1</li> <li>13. CORRECTIVE ACTION PLAN Inspect facilities for deficiencies, repair/replace as needed.</li> </ul>	N135.818 11. CIRCU 1.74 12. REPOI 1.26 13. CORR Installation

CIRCUIT #3:	CIRCL
1. SUBSTATION NAME AND NUMBER	1. SUBST/
Bacon Creek 87	Carpenter
2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)	2. SUBST/
Whitley Bacon Crk Rd Corbin	Whitley
3. CIRCUIT NAME AND NUMBER	3. CIRCUI
Scuffletown 3	Williamsbu
4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)	4. CIRCUI
S Corbin, US 25W, Scuffletown Rd	KY92, Gat
5. TOTAL CIRCUIT LENGTH (MILES)	5. TOTAL
12.6	146
6. CUSTOMER COUNT FOR THIS CIRCUIT	6. CUSTO
125	1127
7 DATE OF LAST CIRCUIT TRIM (VM)	7 DATE (
2013	2013
8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE	
NUMBERS REPRESENTED BY EACH CAUSE	NUMBE
power supplier 3%, on R/W tree 67%, equipment failure 30% 9. CIRCUIT 5 YEAR AVERAGE (SAIDI)	power sup 9. CIRCUI
15.98	9. CIRCUI 101.54
10. REPORTING YEAR (SAIDI)	101.34 10. REPOI
34.99	107.931
11. CIRCUIT 5 YEAR AVERAGE (SAIFI)	11. CIRCU
0.68	3.79
12. REPORTING YEAR (SAIFI)	12. REPOI
0.35	1.1
13. CORRECTIVE ACTION PLAN	13. CORR
Spot trim trees as needed.	trim or rem

CIRCUIT #6:	CIRCL
1. SUBSTATION NAME AND NUMBER	1. SUBST/
Chad 103	Cumberlar
2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)	2. SUBST/
Harlan KY522 Chad	Whitley
3. CIRCUIT NAME AND NUMBER	3. CIRCUI
Line Fork 1	Corbin
	4. CIRCUI
4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA) KY160, Gordon, Kingdom Come School	S Corbin, l
5. TOTAL CIRCUIT LENGTH (MILES)	5. TOTAL
18.1	67.9
6. CUSTOMER COUNT FOR THIS CIRCUIT	6. CUSTO
214	1388
7 DATE OF LAST CIRCUIT TRIM (VM)	7 DATE (
2012	2013
8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE	
NUMBERS REPRESENTED BY EACH CAUSE	NUMBE
unknown 10%, bad r/w 3%, on r/w tree 41%, off r/w tree 29%, equip fail 17%	planned cc
9. CIRCUIT 5 YEAR AVERAGE (SAIDI)	9. CIRCUI
190.54	20.85
190.54 10. REPORTING YEAR (SAIDI)	20.65 10. REPOI
305.28	50.774
11. CIRCUIT 5 YEAR AVERAGE (SAIFI)	11. CIRCU
4.25	0.87
12. REPORTING YEAR (SAIFI)	12. REPOI
2.15	0.67
13. CORRECTIVE ACTION PLAN	13. CORR
trim/remove trees as needed	13. 001111
amy omore access as needed	

CIRCUIT #8:	CIRCL
1. SUBSTATION NAME AND NUMBER	1. SUBST/
Cumberland Falls 26	Cumberlar
2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)	2. SUBST/
Whitley US25W Corbin	Whitley
3. CIRCUIT NAME AND NUMBER	3. CIRCUI
Corbin 1	Cumb. Fal
4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)	4. CIRCUI
S Corbin, US25W, KY511	Cumb Fall
5. TOTAL CIRCUIT LENGTH (MILES)	5. TOTAL
67.9	54.4
6. CUSTOMER COUNT FOR THIS CIRCUIT	6. CUSTO
1388	425
7 DATE OF LAST CIRCUIT TRIM (VM)	7 DATE (
2013	2013
8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE	E 18. LIST O
NUMBERS REPRESENTED BY EACH CAUSE	NUMBE
planned const 1%, sm animals 2%, on r/w tree2%, off r/w tree 69%, storm 3%, eq fail 12%, vehi	
9. CIRCUIT 5 YEAR AVERAGE (SAIDI)	9. CIRCUI
20.85	21.76
10. REPORTING YEAR (SAIDI)	10. REPOI
50.774	27.114
11. CIRCUIT 5 YEAR AVERAGE (SAIFI)	11. CIRCU
0.87	1.08
12. REPORTING YEAR (SAIFI)	12. REPOI
0.67	0.44
13. CORRECTIVE ACTION PLAN	13. CORR
trim/remove trees as deemed necessary	trim/remov

### **CIRCUIT #8:**

1. SUBSTATION NAME AND NUMBER

Cumberland Falls 26

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley US25W Corbin

3. CIRCUIT NAME AND NUMBER

Devils Crk

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

Devils Crk, Frankfort School

5. TOTAL CIRCUIT LENGTH (MILES)

32.4

6. CUSTOMER COUNT FOR THIS CIRCUIT

353

7.. DATE OF LAST CIRCUIT TRIM (VM)

2013

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

sm animals30%, on r/w tree 30%, off r/w tree 12%, lightning 37%, eq fail 3%, unk 7%, storm 6%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

54.88

10. REPORTING YEAR (SAIDI)

146.883

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

2.4

12. REPORTING YEAR (SAIFI)

2.07

13. CORRECTIVE ACTION PLAN

trim/remove trees as needed, install varmint guard, inspect/replace arrestors as needed

### **CIRCUIT #11:**

1. SUBSTATION NAME AND NUMBER

Emanuel 2<sup>-</sup>

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, KY229, Bailey Switch

3. CIRCUIT NAME AND NUMBER

Knox Fork

3

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

KY229. Knox Fork

5. TOTAL CIRCUIT LENGTH (MILES)

30

6. CUSTOMER COUNT FOR THIS CIRCUIT

369

7.. DATE OF LAST CIRCUIT TRIM (VM)

201

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unknown 24%, sm animal 2%, on r/w tree 67%, off r/w tree 4%, vehicle accident 2%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

22.79

10. REPORTING YEAR (SAIDI)

38.38

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

1.43

12. REPORTING YEAR (SAIFI)

0.57

13. CORRECTIVE ACTION PLAN

### CIRCUIT #13:

1. SUBSTATION NAME AND NUMBER

Girdler 106

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, Hampton Cemetery, Girdler

3. CIRCUIT NAME AND NUMBER

Girdler

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

Girdler, KY11, KY1304, Calebs Crk

5. TOTAL CIRCUIT LENGTH (MILES)

33.6

6. CUSTOMER COUNT FOR THIS CIRCUIT

554

7.. DATE OF LAST CIRCUIT TRIM (VM)

2014

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE 1 NUMBERS REPRESENTED BY EACH CAUSE

unk 8%, sm animal 3%, on r/w tree 8%, off r/w tree 2%, eq fail 79%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

30.56

10. REPORTING YEAR (SAIDI)

47.899

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

1.95

12. REPORTING YEAR (SAIFI)

0.86

13. CORRECTIVE ACTION PLAN

inspect facilities for deficiencies

### **CIRCUIT #15:**

1. SUBSTATION NAME AND NUMBER

Girdler 106

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, Hampton Cemetery, Girdler

3. CIRCUIT NAME AND NUMBER

Hughs Hill

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

Girdler, KY11, Hughs Hill

5. TOTAL CIRCUIT LENGTH (MILES)

14.6

6. CUSTOMER COUNT FOR THIS CIRCUIT

168

7.. DATE OF LAST CIRCUIT TRIM (VM)

2014

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE 1 NUMBERS REPRESENTED BY EACH CAUSE

unk 33%, on r/w tree 26%, eq fail 41%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

57.33

10. REPORTING YEAR (SAIDI)

141.357

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

2.94

12. REPORTING YEAR (SAIFI)

1.91

13. CORRECTIVE ACTION PLAN

trim/removed trees as needed, inspect facilities for deficiencies

### **CIRCUIT #17:**

1. SUBSTATION NAME AND NUMBER

Goldbug 64

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, US25W, Goldbug

3. CIRCUIT NAME AND NUMBER

Three Point/Croley Be

3

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

Three Point/Croley Bend, US25W

5. TOTAL CIRCUIT LENGTH (MILES)

20.6

6. CUSTOMER COUNT FOR THIS CIRCUIT

117

7.. DATE OF LAST CIRCUIT TRIM (VM)

2011

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

bad r/w 2%, sm animal 55%, on r/w tree 3%, eq fail 28%, unk 11%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

95.26

10. REPORTING YEAR (SAIDI)

246.961

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

4.91

12. REPORTING YEAR (SAIFI)

4.03

13. CORRECTIVE ACTION PLAN

### CIRCUIT #19:

1. SUBSTATION NAME AND NUMBER

Hinkle 53

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, KY1304, Bimble

3. CIRCUIT NAME AND NUMBER

Shy Mug

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

Bimble, KY1304, Shy Mug

5. TOTAL CIRCUIT LENGTH (MILES)

25.2

6. CUSTOMER COUNT FOR THIS CIRCUIT

189

7.. DATE OF LAST CIRCUIT TRIM (VM)

2013

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

unk 69%, power supply 13%, sm animal 2%, on r/w tree 16%,

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

111.92

10. REPORTING YEAR (SAIDI)

208.102

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

2.24

12. REPORTING YEAR (SAIFI)

1.5

13. CORRECTIVE ACTION PLAN

no plan - majority of outages have unknown cause

### **CIRCUIT #21:**

1. SUBSTATION NAME AND NUMBER

Liberty Church 107

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Knox, KY3436, Liberty Church

3. CIRCUIT NAME AND NUMBER

Bill Smith Post Mill

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

KY3436

5. TOTAL CIRCUIT LENGTH (MILES)

0.5

6. CUSTOMER COUNT FOR THIS CIRCUIT

1

7.. DATE OF LAST CIRCUIT TRIM (VM)

2012

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE 1 NUMBERS REPRESENTED BY EACH CAUSE

on r/w tree 100%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

3642.5

10. REPORTING YEAR (SAIDI)

10927.5

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

77.5

12. REPORTING YEAR (SAIFI)

77.5

13. CORRECTIVE ACTION PLAN

no plan. This ckt, for most of reporting year, was only half mile long. Late during reporting year ckt was enlarged with load from another ckt on same sub.

### CIRCUIT #23:

1. SUBSTATION NAME AND NUMBER

Rockhold 2

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, KY3423, Rockhold

3. CIRCUIT NAME AND NUMBER

Woodbine

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

Faber, KY26, Woodbine

5. TOTAL CIRCUIT LENGTH (MILES)

66.7

6. CUSTOMER COUNT FOR THIS CIRCUIT

579

7.. DATE OF LAST CIRCUIT TRIM (VM)

2015

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE 1 NUMBERS REPRESENTED BY EACH CAUSE

unk 6%, overload 84%, bad r/w 2%, sm animal 1%, on r/w tree 4%, public cut tree 2%,

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

121.71

10. REPORTING YEAR (SAIDI)

136.936

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

3.36

12. REPORTING YEAR (SAIFI)

1.27

13. CORRECTIVE ACTION PLAN

validity of 84% overload outage cause is questionable. Plan is to review data and monitor ckt.

### **CIRCUIT #25:**

1. SUBSTATION NAME AND NUMBER

South Corbin 45

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, Corinth Ch Rd, Corbin

3. CIRCUIT NAME AND NUMBER

Tattersall

1

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

Corbin, KY727, Riva Ridge Trl, Tattersall Subd

5. TOTAL CIRCUIT LENGTH (MILES)

22

6. CUSTOMER COUNT FOR THIS CIRCUIT

314

7.. DATE OF LAST CIRCUIT TRIM (VM)

2012

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE

power supply 2%, sm animal 22%, storm 74%

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

79.35

10. REPORTING YEAR (SAIDI)

125.773

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

7.02

12. REPORTING YEAR (SAIFI)

2.86

13. CORRECTIVE ACTION PLAN

install animal protection where needed

### **CIRCUIT #27:**

1. SUBSTATION NAME AND NUMBER

South Corbin 45

2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)

Whitley, Corinth Ch Rd, Corbin

3. CIRCUIT NAME AND NUMBER

312

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

Corbin, KY727, KY312

5. TOTAL CIRCUIT LENGTH (MILES)

54.3

6. CUSTOMER COUNT FOR THIS CIRCUIT

721

7.. DATE OF LAST CIRCUIT TRIM (VM)

2012

8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE 1 NUMBERS REPRESENTED BY EACH CAUSE

unk 4%, power supply 25%, sm animal 14%, bad urd primary 11%, eq fail 10%, vehicle accident 31%, lightnir

9. CIRCUIT 5 YEAR AVERAGE (SAIDI)

57.41

10. REPORTING YEAR (SAIDI)

66.97

11. CIRCUIT 5 YEAR AVERAGE (SAIFI)

1.65

12. REPORTING YEAR (SAIFI)

0.83

13. CORRECTIVE ACTION PLAN

equip failure & bad URD are likely attributable to Laurel Bridge Rec Area cable failures owned by US Forest Svc. USFS plans to replace URD system. Install animal protection where needed

### JIT #4:

ATION NAME AND NUMBER

85

ATION LOCATION (COUNTY-ROAD-TOWN)

KY92E Carpenter

T NAME AND NUMBER

eek 2

T LOCATION (TOWN-ROAD-GENERAL AREA)

2E, Greasy Creek

CIRCUIT LENGTH (MILES)

MER COUNT FOR THIS CIRCUIT

**OF LAST CIRCUIT TRIM (VM)** 

UTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NERS REPRESENTED BY EACH CAUSE s 22%, tree on R/W 5%, tree off R/W 6%, storm 52%, equip fail 1%, unkown 9% IT 5 YEAR AVERAGE (SAIDI)

RTING YEAR (SAIDI)

IIT 5 YEAR AVERAGE (SAIFI)

RTING YEAR (SAIFI)

#### **ECTIVE ACTION PLAN**

of animal contact prevention devices is onging across system. Spot trim trees and danger tree removal as ne

### JIT #5:

ATION NAME AND NUMBER

85

ATION LOCATION (COUNTY-ROAD-TOWN)

KY92E Carpenter

T NAME AND NUMBER

a

T LOCATION (TOWN-ROAD-GENERAL AREA)

liff, Louden, Whetstone, Nevisdale

**CIRCUIT LENGTH (MILES)** 

MER COUNT FOR THIS CIRCUIT

OF LAST CIRCUIT TRIM (VM)

UTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE 1

ERS REPRESENTED BY EACH CAUSE

plier 7%, overload 10%, planned const 7%, planned maint 3%, on R/W tree 58%, storm 1%, lightning 1%, unk IT 5 YEAR AVERAGE (SAIDI)

RTING YEAR (SAIDI)

IIT 5 YEAR AVERAGE (SAIFI)

RTING YEAR (SAIFI)

ECTIVE ACTION PLAN love trees as needed

### JIT #8:

ATION NAME AND NUMBER

IN FAILS 26

ATION LOCATION (COUNTY-ROAD-TOWN)

US25W Corbin

T NAME AND NUMBER

1

T LOCATION (TOWN-ROAD-GENERAL ARE

T LOCATION (TOWN-ROAD-GENERAL AREA) JS25W, KY511 CIRCUIT LENGTH (MILES)

MER COUNT FOR THIS CIRCUIT

**OF LAST CIRCUIT TRIM (VM)** 

UTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE 1 ERS REPRESENTED BY EACH CAUSE onst 1%, sm animals 2%, on r/w tree2%, off r/w tree 69%, storm 3%, eq fail 12%, vehicle 9%, unk 2% IT 5 YEAR AVERAGE (SAIDI)

RTING YEAR (SAIDI)

IIT 5 YEAR AVERAGE (SAIFI)

RTING YEAR (SAIFI)

**ECTIVE ACTION PLAN** 

### JIT #8:

ATION NAME AND NUMBER

nd Falls 26

ATION LOCATION (COUNTY-ROAD-TOWN)

US25W Corbin

T NAME AND NUMBER

s :

T LOCATION (TOWN-ROAD-GENERAL AREA)

SRP, US25W

**CIRCUIT LENGTH (MILES)** 

MER COUNT FOR THIS CIRCUIT

**OF LAST CIRCUIT TRIM (VM)** 

UTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NERS REPRESENTED BY EACH CAUSE Is 13%, on r/w tree 30%, off r/w tree 12%, lightning 38%, eq fail 2%, unk 4%

IT 5 YEAR AVERAGE (SAIDI)

RTING YEAR (SAIDI)

IIT 5 YEAR AVERAGE (SAIFI)

RTING YEAR (SAIFI)

ECTIVE ACTION PLAN re trees as needed, inspect arrestors

ıg 3%

eded.

:11%