



LICKING VALLEY
RURAL ELECTRIC COOPERATIVE CORPORATION
P. O. Box 605 • 271 Main Street
West Liberty, KY 41472-0605
(606) 743-3179



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FEB 14 2022

**PUBLIC SERVICE
COMMISSION**

February 8, 2022

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

Dear Sir:

Enclosed you will find Licking Valley Rural Electric Cooperative Corporation's Electric Distribution Utility Annual Reliability and Accountability Report for the year ending 2021.

If additional information is needed, please let us know.

Sincerely,

Chris Murphy
Superintendent of Operations

CM:cjc

Report prepared for:

LICKING VALLEY RURAL ELECTRIC COOPERATIVE CORPORATION

Prepared by:

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2021 Annual Reliability Report

Major Event Days

SAIDI Value 2358.7906

First Date Used to Determine T'Med-----January 28, 2021

Last Date Used to Determine T'Med-----December 30, 2021

Number of MED in Report Year----26

System Reliability Information and Results

System-Wide Information

Total consumers 17,523

Total Circuits 36

System-Wide Results

Excluding MED

Reporting Year	5 Year Average
SAIDI 152.2485	162.6328
SAIFI 1.3721	1.3111

Including MED

Reporting Year	5 Year Average
SAIDI 2511.0391	805.6400
SAIFI 2.9104	2.1349

Ten Worst Performing Circuits and Major Outage Category Without T'Med for SAIFI Index:

Substation	Circuit	SAIFI Value	Major Cause
Campton	Vortex	5.0594	Consumer Caused
Campton	Stillwater	4.0663	Pre-Arranged Maintenance
Maggard	Flat Fork	3.4756	Pre-Arranged Maintenance
Crockett	Crockett	3.3857	Pre-Arranged Maintenance
Sublett	Gunlock	2.5288	Consumer Caused
Maytown	Hazel Green	2.3964	Pre-Arranged Maintenance
Sublett	Carver	2.1156	Pre-Arranged Maintenance
Helechawa	Belknap	2.0169	Pre-Arranged Maintenance
Zachariah	Leeco	2.0000	Right-of-Way Outside
Campton	Elkins Road	1.6888	Consumer Caused

Ten Worst Performing Circuits and Major Outage Category Without T'Med for SAIDI Index:

Substation	Circuit	SAIDI Value	Major Cause
Maggard	Flat Fork	554.2520	Pre-Arranged Maintenance
Campton	Vortex	404.1599	Consumer Caused
Sublett	Gunlock	338.1673	Consumer Caused
Helechawa	Belknap	327.4029	Pre-Arranged Maintenance
Maytown	Hazel Green	307.2045	Pre-Arranged Maintenance
Crockett	Crockett	265.9744	Pre-Arranged Maintenance
Campton	Stillwater	250.2364	Pre-Arranged Maintenance
Zachariah	Leeco	245.5291	Right-of-Way Outside
Maggard	Lick Creek	183.7093	Unknown
Sublett	Carver	159.7537	Pre-Arranged Maintenance

Ten Worst Performing Circuits and Major Outage Category Without T'Med for CAIDI Value:

Substation	Circuit	CAIDI Value	Major Cause
Hot Mix	519	227.54	Pre-Arranged Maintenance
Oakdale	War Creek	180.50	Fire
Helechawa	Belknap	162.33	Unknown
Maggard	Flat Fork	159.47	Other
Sublett	Gun Creek	153.84	Equipment Failure
Index	Mize	151.46	Right-of-Way Outside
Hot Mix	Liberty Road	143.87	Pre-Arranged Maintenance
Hot Mix	Elkfork	143.70	Right-of-Way Outside
Crockett	Williams Creek	142.31	Other
Sublett	Lakeville	141.47	Right-of-Way Outside

System-Wide SAIFI, SAIDI, and CAIDI for the past 5 years, Includes T'Med

	2017	2018	2019	2020	2021
SAIFI	2.4136	1.9134	1.8651	1.5720	2.9104
SAIDI	344.1047	639.5972	288.6765	244.7829	2511.0391
CAIDI	142.57	334.27	154.78	155.71	862.78

System-Wide SAIFI, SAIDI, and CAIDI for the past 5 years, Excludes T'Med

	2017	2018	2019	2020	2021
SAIFI	1.3105	1.2702	1.3666	1.2360	1.3721
SAIDI	137.2827	160.9228	199.2011	163.5087	152.2485
CAIDI	104.76	126.69	145.76	132.29	110.96

		SAIDI Values for every circuit--excluding MED's						
		2017	2018	2019	2020	2021	5 Year Average	
Campton Substation								
	Pine Ridge Circuit	41.7274	33.5112	111.4313	10.8499	31.0994	45.7238	
	Stillwater Circuit	96.1985	52.5457	92.0354	47.0074	250.2364	107.6047	
	Vortex Circuit	90.2226	252.4380	280.1667	429.3910	404.1599	291.2756	
	Elkins Road Circuit	120.7291	21.1634	101.6542	156.8476	88.138	97.7065	
Index Substation								
	Caney Circuit	66.3265	38.4080	86.6418	31.5979	106.4042	65.8757	
	Index Circuit	75.5798	44.1217	52.6201	132.9455	40.4897	69.1514	
	Mize Circuit	29.8132	338.1005	97.9194	90.7994	125.4847	136.4234	
	Prison Circuit		188.0000	27.7500			43.1500	
	School Circuit		2.2500		133.6309		27.1762	
Maytown Substation								
	Ezel Circuit	17.6252	100.6312	94.4000	29.1172	68.5674	62.0682	
	Hazel Green Circuit	79.6557	144.5493	43.0548	123.9489	307.2045	139.6826	
	Pomeroyton Circuit	20.0938	93.3734	35.6158	71.8441	113.0943	66.8043	
Crockett Substation								
	Lenox Circuit	45.9177	167.8000	49.8800	640.7659	34.4205	187.7568	
	Williams Creek Circuit	178.2226	249.0188	146.0522	141.8807	135.3076	170.0964	
	Crockett Circuit	276.2323	160.9704	61.9824	87.6890	265.9744	170.5697	

Circuit Reporting

Circuits With SAIFI or SAIDI Value Higher Than 5 Year Average

Circuit Reporting

Substation # 1, Zachariah Substation, located on Hwy 1036 at the edge of Wolfe and Lee Counties.

Circuit # 1, Leeco Circuit; this circuit serves areas of Little Sinking, Big Sinking, Leeco and Big Bend Road.

This circuit has approximately 29.9 miles of line and serves approximately 358 consumers.

This circuit was cut out in 2017.

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Right-of-Way Outside	63%	62%
Right-of-Way Inside	29%	27%
Pre-Arranged Maintenance	5%	1%
Equipment Failure	2%	9%
Animals	1%	1%
Consumer Caused	<1%	<1%

Circuit 5 Year Average SAIFI--.9512

Reporting Year, 2021, SAIFI—2.0000

Circuit 5 Year Average SAIDI—132.0308

Reporting Year, 2021, SAIDI—245.5291

We have no control over right-of-way outside of our cutting area.

Circuit Reporting

Substation # 3, Helechawa Substation, located on Hwy 205 in Wolfe County.

Circuit # 2, Cannel City Circuit; this circuit serves areas of Upper Stacy Fork, Cannel City, Johnson Fork, Adele and Cow Creek.

This circuit has approximately 104.9 miles of line and has approximately 854 consumers.

This circuit was cut out in 2017.

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Equipment Failure	82%	36%
Pre-Arranged Maintenance	11%	33%
Unknown	4%	10%
Right-of-Way Outside	2%	6%
Consumer Caused	1%	10%
Right-of-Way Inside	<1%	1%
Animals	<1%	4%

Circuit 5 Year Average SAIFI—1.2556

Reporting Year, 2021, SAIFI—1.2651

Circuit 5 Year Average SAIDI—27.1358

Reporting Year, 2021, SAIDI—116.6290

Equipment Failure is beyond our control.

Circuit Reporting

Substation # 3: Helechawa Substation, located on Hwy 205 in Wolfe County, near exit 57 off Mountain Parkway.

Circuit # 4, Belknap Circuit; this circuit serves the areas of Hwy 1094, Banks Fork, Hwy 378, Lower Taulbee Fork, and Davis Fork.

This circuit has approximately 66.4 miles of line and serves approximately 353 consumers.

This circuit was cut out in 2017 & 2018 .

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Pre-Arranged Maintenance	45%	58%
Right-of-Way Outside	33%	22%
Equipment Failure	13%	6%
Unknown	8%	13%
Animals	1%	1%
Consumer Caused	<1%	<1%
Fire	<1%	<1%

Circuit 5 Year Average SAIFI—1.1002

Reporting Year, 2021, SAIFI—2.0169

Circuit 5 Year Average SAIDI—143.9602

Reporting Year, 2021, SAIDI—327.4029

In order to complete necessary repairs safely, serviceman had to turn power off until repairs were completed.

Circuit Reporting

Substation # 4, Hot Mix Substation, located on Sugar Camp Road in Morgan County.

Circuit # 4; 519 Circuit; this circuit serves areas of Hwy 519, Yocum, Blaze, Zag and Dehart.

This circuit has approximately 99 miles of line and serves approximately 800 consumers.

This circuit was cut out in 2019.

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Pre-Arranged Maintenance	51%	70%
Right-of-Way Inside	39%	24%
Animals	4%	2%
Right-of-Way Out	2%	1%
Unknown	2%	2%
Equipment Failure	2%	1%

Circuit 5 Year Average SAIFI—.7764

Reporting Year, 2021, SAIFI--.6730

Circuit 5 Year Average SAIDI—96.1888

Reporting Year, 2021, SAIDI—153.1322

In order to complete necessary repairs safely, serviceman had to turn power off until repairs were completed.

Circuit Reporting

Substation #5, Maggard Substation, located on Rt. 1081 at Coon Creek in Magoffin County.

Circuit # 1; Rockhouse Circuit, this circuit serves areas of Improvement Fork, Rockhouse, and Logville.

This circuit has approximately 32.5 miles of line and serves approximately 278 consumers.

This circuit was cut out in 2013 & 2014.

Causes and percentages for this circuit 2013 & 2014:

Cause	% SAIFI	% SAIDI
Pre-Arranged Maintenance	59%	31%
Right-of-Way Inside	19%	23%
Consumer Caused	10%	28%
Unknown	10%	14%
Right-of-Way Outside	1%	1%
Equipment Failure	1%	2%
Animals	<1%	1%

Circuit 5 Year Average SAIFI—1.2452

Reporting Year, 2021, SAIFI—1.5906

Circuit 5 Year Average SAIDI—144.6522

Reporting Year, 2021, SAIDI—105.5255

In order to do necessary repairs safely, serviceman had to turn power off until repairs were completed.

Circuit Reporting

Substation # 5; Maggard Substation, located on Rt 1081 at Coon Creek in Magoffin County.

Circuit # 2, Flat Fork Circuit; this circuit serves areas of Coon Creek, Mud Lick, Flat Fork, Mine Fork and Litteral.

This circuit has approximately 43 miles of line and serves approximately 535 consumers.

This circuit was cut out in 2013 & 2014 .

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Pre-Arranged Maintenance	63%	70%
Right-of-Way Inside	30%	22%
Right-of-Way Outside	5%	7%
Animals	2%	1%
Equipment Failure	<1%	<1%
Unknown	<1%	<1%
Other	<1%	

Circuit 5 Year Average SAIFI—1.8104

Reporting Year, 2021, SAIFI—3.4756

Circuit 5 Year Average SAIDI—309.5850

Reporting Year, 2021, SAIDI—554.2520

In order to do necessary repairs safely, serviceman had to turn power off until repairs were completed.

Circuit Reporting

Substation # 5, Maggard Substation, located on Rt. 1081 at Coon Creek in Magoffin County.

Circuit # 3; Lick Creek Circuit, this circuit serves areas of Lick Creek Road, Buffalo, Brushy Fork, and Cripple Creek.

This circuit has approximately 48.5 miles of line and serves approximately 606 consumers.

This circuit was cut out in 2013 & 2014 .

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Unknown	30%	29%
Pre-Arranged Maintenance	23%	18%
Right-of-Way Outside	20%	23%
Consumer Caused	8%	7%
Equipment Failure	7%	9%
Animals	7%	9%
Right-of-Way Inside	5%	5%
Other	<1%	<1%

Circuit 5 Year Average SAIFI—1.1244

Reporting Year, 2021, SAIFI—1.5785

Circuit 5 Year Average SAIDI—174.9110

Reporting Year, 2021, SAIDI—183.7093

We will have to do more research to find a cause of line being out.

Circuit Reporting

Substation # 6, Sublett Substation, located on Rt.7 near Royalton in Magoffin County.

Circuit # 1; Carver Circuit; this circuit serves areas of Sublett, Stinson, Foraker and Hendricks.

This circuit has approximately 71.4 miles of line and serves approximately 675 consumers.

This circuit was cut out in 2012 & 2013 .

Causes and percentages for this circuit.

Cause	%SAIFI	%SAIDI
Pre-Arranged Maintenance	51%	37%
Equipment Failure	18%	16%
Unknown	14%	19%
Right-of-Way Outside	8%	14%
Right-of-Way Inside	3%	4%
Right-of-Way Crew	3%	1%
Animals	3%	9%

Circuit 5 Year Average SAIFI—1.8834

Reporting Year, 2021, SAIFI—2.1156

Circuit 5 Year Average SAIDI—383.1000

Reporting Year, 2021, SAIDI—159.7537

In order to do necessary repairs safely, serviceman had to turn power off until repairs were completed.

Circuit Reporting

Substation # 6, Sublett Substation, located on Rt 7 near Royalton in Magoffin County.

Circuit # 3; Gunlock Circuit; this circuit serves areas of Swampton, Puncheon, Big Half Mountain, Trace Fork, Salt Lick, Long Branch and Gypsy.

This circuit has approximately 101.8 miles of line and serves approximately 875 consumers.

This circuit was cut out in 2013 & 2014 .

Causes and percentages for this circuit:

Cause	% SAIFI	%SAIDI
Consumer Caused	41%	46%
Pre-Arranged Maintenance	20%	11%
Equipment Failure	17%	16%
Right-of-Way Inside	11%	11%
Right-of-Way Outside	4%	5%
Animals	3%	4%
Right-of-Way Crew	3%	4%
Unknown	1%	2%
Other	<1%	<1%

Circuit 5 Year Average SAIFI—2.2066

Reporting Year, 2021, SAIFI—2.5288

Circuit 5 Year Average SAIDI—319.5994

Reporting Year, 2021, SAIDI—338.1673

We have articles in Magazines, Newspaper and Radio to educate our consumers about watching for power lines when they are working outside. We also do Safety Demonstrations at the Annual Meeting and during Community Days in each County.

Circuit Reporting

Substation # 7, Campton Substation, located on Rt 15 in Campton in Wolfe County.

Circuit # 2, Stillwater Circuit; this circuit serves areas of Campton, Callaboose, Stillwater, Baptist Fork, and Trent.

This circuit has approximately 106.6 miles of line and serves approximately 1,074 consumers.

This circuit was cut out in 2015 & 2016 .

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Pre-Arranged Maintenance	46%	40%
Consumer Caused	22%	7%
Equipment Failure	13%	11%
Other	5%	16%
Right-of-Way Inside	5%	14%
Unknown	5%	5%
Animals	3%	4%
Right-of-Way Outside	1%	3%

Circuit 5 Year Average SAIFI—1.366

Reporting Year, 2021, SAIFI—4.0663

Circuit 5 Year Average SAIDI—107.6047

Reporting Year, 2021, SAIDI—250.2364

In order for necessary repairs to be made safely, the power had to be turned off until all repairs were completed.

Circuit Reporting

Substation # 7, Campton Substation, located on Rt 15 in Campton, Wolfe County.

Circuit # 3, Vortex Circuit, this circuit serves areas of Hwy 15, Flat Mary, Big Bloody and Bethany.

This circuit has approximately 83 miles of line and serves approximately 546 consumers.

This circuit was cut out in 2015 & 2016 .

Causes and percentages for this circuit:

Causes	% SAIFI	% SAIDI
Consumer Caused	56%	75%
Pre-Arranged Maintenance	21%	5%
Right-of-Way Outside	16%	14%
Right-of-Way Inside	3%	5%
Equipment Failure	2%	<1%
Unknown	1%	1%
Animals	1%	<1%
Other	<1%	<1%

Circuit 5 Year Average SAIFI—3.1224

Reporting Year, 2021, SAIFI—5.0594

Circuit 5 Year Average SAIDI—291.2756

Reporting Year, 2021, SAIDI—404.1599

We have articles in Magazines, Newspapers, and Radio to educate our consumers about watching for power lines when they are working outside. We also do Safety Demonstrations at the Annual Meeting and during Community Days in each County.

Circuit Reporting

Substation # 7, Campton Substation, located on Rt 15 in Campton, Wolfe County.

Circuit # 4, Elkins Road Circuit; this circuit serves areas of Sandy Ridge, Mullins Point, Elkins Road and Bear Pen.

This circuit has approximately 34.6 miles of line and serves approximately 298 consumers.

This circuit was cut out in 2015 & 2016 .

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Consumer Caused	70%	51%
Equipment Failure	9%	24%
Pre-Arranged Maintenance	8%	3%
Unknown	5%	8%
Right-of-Way Inside	3%	3%
Right-of-Way Outside	3%	7%
Animals	2%	4%

Circuit 5 Year Average SAIFI—.8494

Reporting Year, 2021, SAIFI—1.6888

Circuit 5 Year Average SAIDI—97.7065

Reporting Year, 2021, SAIDI—88.1380

We have articles in Magazines, Newspapers, and Radio to educate our consumers about watching for power lines when they are working outside. We also do Safety Demonstrations at the Annual Meeting and during Community Days in each County.

Circuit Reporting

Substation # 8, Index Substation, located on Rt 191 at Index in Morgan County.

Circuit # 1, Caney Circuit, this circuit serves areas of Malone, Stacy Fork, Vance Fork, and Caney.

This circuit has approximately 36.5 miles of line and serves approximately 402 consumers.

This circuit was cut out in 2021 .

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Animals	27%	18%
Pre-Arranged Maintenance	24%	17%
Right-of-Way Inside	16%	40%
Right-of-Way Crew	9%	7%
Unknown	8%	8%
Other	8%	5%
Right-of-Way Out	5%	3%
Equipment Failure	2%	1%
Consumer Caused	1%	1%

Circuit 5 Year Average SAIFI—.6594

Reporting Year, 2021, SAIFI—1.0363

Circuit 5 Year Average SAIDI—65.8757

Reporting Year, 2021, SAIDI—106.4042

In Animal problem areas, we will have to put more guards up on the transformer poles.

Circuit Reporting

Substation # 9, Maytown Substation, located on Rt 1010 in Morgan County.

Circuit # 1, Ezel Circuit; this circuit serves areas of Ezel, Greasy, Little Blackwater, Hwy 772 and Upper Long Branch.

This circuit has approximately 98.2 miles of line and serves approximately 730 consumers.

Last time circuit was trimmed was in 2015.

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Right-of- Way Outside	47%	26%
Equipment Failure	26%	39%
Pre-Arranged Maintenance	14%	13%
Right-of-Way Inside	6%	12%
Animals	5%	5%
Unknown	2%	2%
Consumer Caused	<1%	3%

Circuit 5 Year Average SAIFI--.5754

Reporting Year, 2021, SAIFI—.8457

Circuit 5 Year Average SAIDI—62.0682

Reporting Year, 2021, SAIDI—68.5674

We have no control over right-of-way outside of our cutting area, however, any danger trees that we see outside of our right-of-way, we will cut.

Circuit Reporting

Substation # 9, Maytown Substation, located on Rt. 1010 in Morgan County.

Circuit # 2; Hazel Green Circuit; this circuit serves areas of Rt 1010, Murphy Fork, Swango Fork, Maytown, Valeria and Big Branch.

This circuit has approximately 50.2 miles of line and serves approximately 335 consumers.

This circuit was cut out in 2015.

Causes and percentages for this circuit;

Cause	% SAIFI	% SAIDI
Pre-Arranged Maintenance	91%	93%
Consumer Caused	4%	3%
Animals	3%	1%
Right-of-Way Inside	1%	1%
Equipment Failure	1%	1%
Right-of-Way Outside	<1%	1%
Unknown	<1%	<1%

Circuit 5 Year Average SAIFI—1.2100

Reporting Year, 2021, SAIFI—2.3964

Circuit 5 Year Average SAIDI—139.6826

Reporting Year, 2021, SAIDI—307.2045

In order for necessary repairs to be made safely the power had to be turned off until all repairs were completed.

Circuit Reporting

Substation # 9, Maytown Substation, located on Rt. 1010 in Morgan County.

Circuit # 3, Pomeroyton Circuit; this circuit serves areas of Rt. 1010, Pine Branch, Landsaw, Long Branch, Pomeroyton and Broke Leg.

This circuit has approximately 51.9 miles of line and serves approximately 445 consumers.

This circuit was cut out in 2015.

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Right-of-Way Outside	23%	29%
Unknown	23%	40%
Pre-Arranged Maintenance	20%	6%
Fire	13%	8%
Equipment Failure	11%	7%
Right-of-Way Inside	10%	10%

Circuit 5 Year Average SAIFI--.6030

Reporting Year, 2021, SAIFI--.8350

Circuit 5 Year Average SAIDI—66.8043

Reporting Year, 2021, SAIDI—113.0943

We have no control over right-of-way outside of our cutting area, however, any danger trees that we see outside of our right-of-way we will cut.

Circuit Reporting

Substation # 10, Crockett Substation, located on Hwy 172 in Morgan County.

Circuit # 3; Crockett Circuit; this circuit serves areas of Elkfork, Moon and Middle Fork.

This circuit has approximately 54.4 miles of line and serves approximately 473 consumers.

Cut out circuit 2019.

Causes and percentages for this circuit:

Cause	% SAIFI	% SAIDI
Pre-Arranged Maintenance	49%	46%
Right-of-Way Crew	44%	44%
Consumer Caused	2%	2%
Right-of-Way Outside	2%	3%
Animals	2%	3%
Unknown	1%	1%
Equipment Failure	<1%	1%

Circuit 5 Year Average SAIFI—1.5626

Reporting Year, 2021, SAIFI—1.5626

Circuit 5 Year Average SAIDI—170.5697

Reporting Year, 2021, SAIDI—265.9744

In order for necessary repairs to be made safely the power had to be turned off until all repairs were completed.

Vegetation Management Plan

Licking Valley Rural Electric Cooperative Corporation has an aggressive vegetation program and has contracted B M C Contracting to address our cooperatives right-of-way requirements. Our cooperative likes to maintain a sixty (60) foot ground to sky right-of-way clearance on new and existing accounts; however, some variety in right-of-way clearance is based on geography/terrain, line voltages and property owner issues. At this time BMC Contracting is contracted to cut or trim on each side of the lines no less than 20 feet and no more than 30 feet and at least 4 foot below the neutral. Secondary lines have 4-foot swing path cut. If needed another crew is used to take care of call-ins and hot spots.

LVRECC is currently working on a ten (10) year rotation cycle. BMC Contracting has a crew that is cutting each substation by circuit. They also have an hourly crew that cuts hot spots, new right-of-way and consumer reports. Yard trees are dealt with on a case-by-case basis and will be trimmed as much as homeowner will allow (4 foot minimum below our neutral) or taken down if they will agree. In addition to BMC; the cooperative has a bush hog that is used for right-of-way clearing when time allows. The cooperative has a right-of-way foreman that oversees BMC contacting crews. BMC Contracting primarily does our Herbicide Treatment, mostly in the months of May through September. As time allows the cooperative also does some Herbicide Treatment.