



Big Sandy RECC

A Touchstone Energy® Cooperative



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May 17, 2021

Kent Chandler
Executive Director PSC
Public Service Commission
211 Sower Blvd.
Frankfort, Kentucky 40602-0615

RE: 2020 Annual Distribution Reliability Report.

Dear Honorable Executive Director,

Big Sandy RECC is filing this report in accordance with Case No. 2020-00085. Attached is Big Sandy's 2020 Annual Distribution Reliability Report. Please contact me with any questions.

Sincerely,

Jeff Prater
VP Operations
Big Sandy RECC

RECEIVED

MAY 26 2021

**PUBLIC SERVICE
COMMISSION**



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KENTUCKY PUBLIC SERVICE COMMISSION

Electric Distribution Utility Annual Reliability Report

SECTION 1: CONTACT INFORMATION

UTILITY NAME	Big Sandy RECC
REPORT PREPARED BY	Jeff Prater
E-MAIL ADDRESS OF PREPARER	jprater@bigsandyrecc.com
PHONE NUMBER OF PREPARER	606-791-4095

SECTION 2: REPORTING YEAR

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

T_{MED}	48.31
FIRST DATE USED TO DETERMINE T_{MED}	1-Jan-20
LAST DATE USED TO DETERMINE T_{MED}	31-Dec-21
NUMBER OF MED IN REPORT YEAR	1

NOTE: Per IEEE 1366 T_{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	12,845	TOTAL CIRCUITS	36
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Excluding MED

	5 YEAR AVERAGE		REPORTING YEAR
SAIDI	455.06	SAIDI	681.02
SAIFI	3.36	SAIFI	3.68

Including MED

	5 YEAR AVERAGE		REPORTING YEAR
SAIDI	607.46	SAIDI	734.258
SAIFI	3.8	SAIFI	3.797

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_{MED}

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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
2. SUBSTATION LOCATION (COUNTY-ROAD-TOWN)
3. CIRCUIT NAME AND NUMBER
4. CIRCUIT LOCATION (TOWN-ROAD-GENERAL AREA)
5. TOTAL CIRCUIT LENGTH (MILES)
6. CUSTOMER COUNT FOR THIS CIRCUIT
- 7.. DATE OF LAST CIRCUIT TRIM (VM)
8. LIST OUTAGE CAUSES FOR CIRCUIT ALONG WITH PERCENTAGE OF TOTAL OUTAGE NUMBERS REPRESENTED BY EACH CAUSE
9. CIRCUIT 5 YEAR AVERAGE (SAIDI)
10. REPORTING YEAR (SAIDI)
11. CIRCUIT 5 YEAR AVERAGE (SAIFI)
12. REPORTING YEAR (SAIFI)
13. CORRECTIVE ACTION PLAN

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

Utility Comments

During 2020, 33% of Big Sandy's outages occurred because of ~~an~~ out-of-R/W tree strikes. Also, 65.6% of outage time was directly caused by these same out-of-R/W tree strikes.

Overall SAIDI numbers have increased in the 2020 calendar year, however the increase is causally related to out-of-R/W tree strikes, increasingly diseased trees, and uncharacteristic weather patterns.

Big Sandy's R/W contractor will clear additional width and target out-of-R/W danger trees for all future cutting. Foliar herbicides will be used to reduce regrowth.

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SECTION 6: VEGETATION MANAGEMENT PLAN REVIEW

INCLUDE CURRENT VEGETATION MANAGEMENT PLAN

Additional page may be attached as needed.


See Attached

SECTION 7: UTILITY COMMENTS

Utility comment



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BIG SANDY RECC 2020 REPORTING OUTAGE CAUSES FOR CIRCUIT AND PERCENTAGES

SAIDI/ SAIFI

ARKANSAS #655	MILES-35 / MEMBERS-712	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
BILL WELLS-Substation(Floyd County) US 23, Bull Creek KY				
SAIDI- 373.88/SAIFI 1.94		2010		
Five Year Average: SAIDI- 239.03 /SAIFI- 1.46				
Maintenance		58%		28
Cause unknown		14%		7
Animals		10%		5
Weather		4%		2
Equipment or Installation		4%		2

CORRECTIVE ACTION:

Helicopter side trimming performed, evaluating out of R/W tree removal

ABBOTT #346	MILES-23/ MEMBERS-418	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Bonaza-Substation(Floyd County) RT 1427, Prestonsburg, KY				
SAIDI-244.58/ SAIFI- 2.47		2013		
Five Year Average: SAIDI- 236.93/SAIFI-2.52				
Maintenance		48%		48
Cause unknown		15%		15
Other		11%		11
Equipment or Installation		8%		8
Public		8%		8
Animals		4%		1

CORRECTIVE ACTION:

58% of outage time caused by out of right of way trees - no action planned

DENVER #708	MILES -37 / MEMBERS-439	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Bonanza Substation (Floyd County) RT 1427, Prestonsburg				
SAIDI-5164.03/ SAIFI -9.55		2017		
<i>Five Year Average: SAIDI- 1453.38/SAIFI-5.83</i>				
Maintenance		48%		30
Cause Unknown		16%		10
Equipment or Installation		8%		5
Public		6%		4
Weather		4%		3

CORRECTIVE ACTION:

95% of outage time was caused by out of right of way trees.

Heavy out of right of way tree exposure, evaluate out of r/w tree removal

MT. PARKWAY #608	MILES-25/ MEMBERS-350	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Bonanza Substation (Floyd County) RT 1427, Prestonsburg				
SAIDI-280.38/ SAIFI -3.40		2018		
<i>Five Year Average: SAIDI- 280.74/SAIFI-2.31</i>				
Maintenance		35%		7
Equipment or Installation		20%		4
Public		15%		3
Cause Unknown		10%		2
Animals		10%		2

CORRECTIVE ACTION:

60% of outate time caused by out of right of way trees, no action planned

BEECH FORK #416	MILES-36 / MEMBERS-448	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Jenny Wiley (Floyd County) KY RT 3, Prestonsburg Ky				
SAIDI-537.10/ SAIFI-2.82		2009		
<i>Five Year Average: SAIDI- 519.38/SAIFI-3.14</i>				
Maintenance		43%		17
Cause Unknown		17%		7
Equipment or Installation		10%		4
Weather		10%		4
Public		5%		2
		5%		2

CORRECTIVE ACTION:

Hot Spot and evaluate out of Right-of-way trees removal, if feasible

BOONSCAMP #552	MILES-31/ MEMBERS-331	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
MARTIN CO (Johnson County) KY RT 40, Tomahawk Ky				
SAIDI-637.07/SAIFI-4.14				
Five Year Average: SAIDI- 337.79 /SAIFI-3.10				
2014				
Maintenance		53%		22
Equipment or Installation		19%		8
Cause Unknown		12%		5
Animals		9%		4

CORRECTIVE ACTION:

77% outages caused by out r/w trees. Circuit has rugged terrain and heavy exposure to trees. No action planned.

CALLOWAY# 756	MILES-35/ MEMBERS-528	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Martin CO. (Johnson County) RT 40, Tomahawk KY				
SAIDI-605.13/SAIFI-2.28				
Five Year Average: SAIDI- 413.27/SAIFI-2.66				
2021				
Maintenance		55%		29
Cause Unknown		15%		8
Animals		9%		5
Weather		5%		3
Planned Outage		5%		3
Equipment or Installation		3%		2

CORRECTIVE ACTION:

Right of way cutting and trimming in 2021. Monitor circuit for additional needs.

MILO #551	MILES-15/ MEMBERS-265	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Martin CO. (Johnson County) RT 40, Tomahawk KY				
SAIDI-1283.76/SAIFI-2.50				
Five Year Average: SAIDI- 785.29/SAIFI-3.19				
2013				
Maintenance		40%		11
Animals		25%		7
Cause Unknown		14%		4
Other		7%		2
Equipment or Installation		7%		2

CORRECTIVE ACTION:

95% of outage time caused by out of R/W trees.

This Circuit has heavy out of Right of way tree exposure. No Action Planned.

TIGER MART #287	MILES-12/MEMBERS-221	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Middle Creek Substation (Floyd Co) Prestonsburg Rt 114				
SAIDI-918.62/SAIFI-5.59				
Five Year Average: SAIDI- 95.67 /SAIFI-0.77				
2015				
Maintenance		47%		16
Planned outage		11%		4
Cause Unknown		11%		4
Equipment or Installation		8%		3
Animals		5%		2
Public		5%		2

CORRECTIVE ACTION:

55% of outages time on this circuit caused by out of Right of way trees.
R/W crews have cut a large amount of trees to mitigate the problem.

HARGUS #256	MILES-49/ MEMBERS-458	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Redbush-substation (Johnson County) Flat Gap Rt 172				
SAIDI-2398.92/SAIFI-12.56				
Five Year Average: SAIDI- 1109.75/SAIFI-7.24				
2012				
Cause Unknown		40%		12
Maintenance		26%		8
Equipment or Installation		10%		3
Weather		6%		2
Animals		6%		2
Planned Outage		6%		2

CORRECTIVE ACTION:

This circuit is in rugged and remote terrain with heavy out of R/W tree exposure. One section was fed by alternative feeder and a second section was rerouted for improved reliability.

KEATON #720	MILES -12 / MEMBERS 125	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Redbush-substation (Johnson County) Keaton KY Rt 172				
SAIDI-587.74/SAIFI-3.76				
Five Year Average: SAIDI- 289.82/SAIFI-1.57				
Pre- 2009				
Maintenance		30%		6
Cause Unknown		30%		6
Animals		20%		4
Equipment or Installation		10%		2

CORRECTIVE ACTION:

Circuit scheduled for cut and trimming in 2021.
Will be evaluated for out of R/W tree removal.

ROCK FORK #679	MILES-22/ MEMBERS-378	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Salt Lick-substation (Knott Co) KY HWY 2029 Hueysville KY				
SAIDI-414.85/SAIFI-2.95				
Five Year Average: SAIDI- 193.81/SAIFI-.1.97				
2017				
Maintenance		36%		14
Animals		13%		5
Public		13%		5
Equipment or Installation		10%		4
Unknown		10%		4

CORRECTIVE ACTION:

This circuit has heavy out of R/W tree exposure. Several isolated areas have had additional trimming to mitigate outage time.

SPORTS PLEX # 678	MILES-16/ MEMBERS-83	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Salt Lick-substation (Knott Co) KY HWY 2029 Hueysville KY				
SAIDI-248.52/SAIFI-1.59				
Five Year Average: SAIDI- 67.10/SAIFI-.440				
2017				
Maintenance		75%		6
Equipment or Installation		12%		1
Animals		12%		1

CORRECTIVE ACTION:

97% of outage time caused by out of Right of way trees. No action planned.

BOONS CAMP #63	MILES-15/MEMBERS-195	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Thelma-substation (Johnson County) Thelma KY				
SAIDI-408.69/SAIFI-4.96				
Five Year Average: SAIDI-380.32 /SAIFI-3.37				
2019				
Maintenance		52%		12
Equipment or Installation		13%		3
Cause Unknown		8%		2
Public		8%		2
Weather		4%		1
Animals		4%		

CORRECTIVE ACTION:

47% of outages caused by out of Right of way trees. No action planned.

REHAB #107	MILES-9/MEMBERS-312	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Thelma-substation (Johnson County) Thelma KY				
SAIDI-96.37 /SAIFI-0.56				
<i>Five Year Average: SAIDI-67.71 /SAIFI-0.94</i>				
2016				
Maintenance		35%		5
Equipment or Installation		28%		4
Animals		14%		2
Public		14%		2

CORRECTIVE ACTION:

This is a short feeder and the SAIDI outage time is low.
No action planned.

VOLGA #95	MILES-29/MEMBERS-405	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Thelma-substation (Johnson County) Tutor Key Rt 581				
SAIDI-1535.86 /SAIFI-4.77				
<i>Five Year Average: SAIDI-652.62/SAIFI-4.02</i>				
2011				
Maintenance		42%		14
Cause Unknown		12%		4
Animals		12%		4
Public		9%		3
Planned Outage		9%		3
Weather		6%		2
Equipment or Installation		6%		2

CORRECTIVE ACTION:

This feeder shows an outage of 412 customers affected, however, all except 10 customers were restored. When reviewed, this feeder would not exceed its 5-year average.

DENVER #466	MILES-33/MEMBERS-758	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Volga-substation (Johnson County) Stone Coal Ky Rt 460				
SAIDI-805.73 /SAIFI-4.63				
<i>Five Year Average: SAIDI-628.18/SAIFI-4.75</i>				
2016				
Maintenance		43%		38
Equipment or Installation		12%		11
Cause Unknown		12%		11
Animals		9%		8
Weather		9%		8
Public		7%		7
Planned Outage		3%		3

CORRECTIVE ACTION:

Long feeder with rugged terrain and heavy out of R/W tree exposure. 73% of outages caused by out of R/W trees. No action planned.

FLAT GAP #661	MILES- 56 / MEMBERS - 597	PERCENT	DATE OF LAST CIRCUIT TRIM	OUTAGES
Volga-substation (Johnson County) Staffordsville Rt 172				
SAIDI-334.57/SAIFI-2.90			2014	
<i>Five Year Average: SAIDI-182.92/SAIFI-1.94</i>				

Maintenance	31%	22
Planned Outage	17%	12
Cause Unknown	15%	11
Public	11%	8
Equipment or Installation	10%	7

CORRECTIVE ACTION:

37% of outage time was planned and maintenance outages.
 19% of outages was R/W trees, no action planned for this circuit.



Big Sandy RECC Right-of-Way Plan and Procedures

Big Sandy RECC has 968 miles of distribution line.

Big Sandy's Right-of-Way plan is designed to establish a systematic and sustainable maintenance schedule. Right-of-Way clearing is being scheduled on individual feeder circuits from each substation with clearing to the end of each feeder.

Circuit cutting is being scheduled with a goal of 7-year rotations. Spraying is scheduled with a goal of 4-year rotations.

Spraying of vines that overtake poles and guys is a part of Big Sandy's vegetation Plan.

Big Sandy RECC plans to utilize hourly paid and firm price contracts for all right of way cutting and herbicide application.

Circuit Prioritization

Big Sandy's staff is responsible for establishing a preventative maintenance strategy, identifying an appropriate routine maintenance cycle, prioritizing, scheduling and completing routine maintenance systematically and on the desired cycle.

Vegetation maintenance records, service interruption data, detailed Line Worker Reports, ground patrols and member-customer input all contribute to assigning priorities for vegetation maintenance each year.

There are several factors the Big Sandy's staff must consider when evaluating vegetation management needs. These include the frequency of service interruptions, vegetation quantities and characteristics, time elapsed since last treatment and member-customer requests.

Right-of-Way Clearance Standards

1. Pruning Guidelines for On-R/W Trees - Effective tree clearance for line reliability is dependent on the voltage of the conductor, the type of tree, its growth rate and habit. Clearance shall be accomplished by ground cutting and removing all tall-growing tree species from within the R/W, whenever approved. Where pruning of residential or landscape trees become necessary, prune so as to provide a minimum of three (3) years of clearance. The guidelines for tree clearances apply at the time of pruning and clearing and are intended to protect the wires under normal operating conditions. Special clearances may be needed at times because of field conditions. Additional allowance should be made for wires with excess sag.
2. Pruning Along Distribution R/W Edge or Off-R/W Trees - Every tree shall be trimmed ground-to-sky in accordance with ANSI A-300. To the extent practicable, these limbs shall be



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trimmed back to the trunk of the tree except on species that are susceptible to sun scald. Clear the R/W of all trees or brush thirty-five (35) feet wide for three phase lines and thirty (30) feet wide for single phase lines.

3. Shaping or rounding-over trees beyond the extent required to achieve the desired conductor/vegetation clearance shall not be performed, unless specifically approved by BIG SANDY or it's REPRESENTATIVE.
4. Only trees that are directly involved with BIG SANDY' overhead lines, as defined by this specification shall be pruned. Pruning trees for privately owned lines, other utility lines, or consumer lines or wiring is not permitted.
5. On all secondary lines and service drops, as directed by BIG SANDY or its REPERSENTATIVE, drops shall be cleared to the extent that the conductor can swing free of obstructions.
6. Big Sandy shall not prune trees solely for area lighting illumination.
7. All low growing desirable species, if present, may be left unless:
 - a. they create clearance problems,
 - b. mechanical, non-selective equipment (e.g. mowing) is used, or
 - c. they block access to the rights-of-way or prevent facilities maintenance.
8. Ingested wilting foliage of wild cherry is poisonous to livestock. Remove all wild cherry foliage from fields where livestock graze.
9. All stumps from manual clearing operations shall be treated with herbicides approved by BIG SANDY.

Jeff Prater

VP Operations
Big Sandy RECC
504 11th Street
Paintsville, KY 41240



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