



Over a Century  
of Service

April 23, 2021

Ms. Rosemary Chiavetta  
Pennsylvania Public Utility Commission  
PO Box 3265  
Harrisburg, PA 17105-3265

RE: Docket No. M-2016-2522508 – Annual Reliability Report

Dear Secretary Chiavetta,

Enclosed please find the 2020 Annual Reliability Report for Citizens' Electric Company. Please contact me at 570-522-6143 or [johnsonn@citizenselectric.com](mailto:johnsonn@citizenselectric.com) if I can answer any questions.

Best Regards,

A handwritten signature in black ink, appearing to read "Nathan Johnson", written over a light blue horizontal line.

Nathan Johnson, PE  
Vice President of Engineering & Operations

cc: Dan Searfoorce (via email)  
John Van Zant (via email)

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*Serving the Wonderful Lewisburg-Buffalo Valley since 1911*

Citizens' Electric Company  
Annual Electric Service Reliability Report  
2020

Prepared by Nathan Johnson, PE  
Vice President of Engineering & Operations  
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[johnsonn@citizenselectric.com](mailto:johnsonn@citizenselectric.com)  
4/23/2021

**§ 57.195(b)(1) - An overall current assessment of the state of the system reliability in the EDC's service territory including a discussion of the EDC's current programs and procedures for providing reliable electric service.**

Citizens' Electric customers enjoyed one of the best years on Company record for reliability in 2020. Year end indices marked ten-year lows for SAIDI and SAIFI, a ten year high for Average Service Availability and CAIDI significantly below benchmark levels. This marks the third year of an overall positive trend in reliability.

While not reflected in reported indices, the Company experienced a typical number and severity of major events. The third quarter was the most active with respect to storm related interruptions. Three storm events impacted the Company's service area during the third quarter, two of which affected approximately 30% of Citizens' customers.

The Company again continued its commitment to a responsible vegetation management program as evidenced by its 18<sup>th</sup> consecutive year to be recognized as a "Tree Line USA" utility by the National Arbor Day Foundation. This award recognizes utilities for their use of nationally approved trimming techniques and vegetation management procedures. Of particular value within the Company's 'Tree Line' effort is its annual educational session hosted in cooperation with the Penn State Extension. This event provides education not only for Company employees, but also the current vegetation management contractor, and local municipal road and public works crews. Topics covered include directional pruning techniques, 'Right Tree in the Right Place' planning, and updates on current and expected threats to Pennsylvania forests. By inviting local municipalities, we encourage cooperative relationships, as well as garner the mutual benefits of consistent vegetation management practices throughout the area.

The Company continues to evaluate, compare and improve its practices through participation in a variety of industry peer groups. Its unique connection to both the rural electric and investor owned utility groups allow staff to tap a wide knowledge base, including the Pennsylvania Rural Electric Association, the Energy Association of Pennsylvania, the National Rural Electric Cooperative Association and the International Association of Arboriculture.

Citizens' Electric Company does not own or maintain any transmission facilities.

<b>Current Maintenance Program</b>		
<b>Program</b>	<b>Description</b>	<b>Cycle</b>
Infrared Inspection	All substation equipment biennially, and 1/3 of all overhead lines each year.	3 years
Vegetation Management	Each year, all primary lines are visually inspected. This comprehensive field inspection allows us to identify areas that require trimming. We maintain a 4-year trimming cycle, but all areas are inspected annually to help identify unexpected “hot spots.” All areas needing attention are trimmed by the end of the 3 <sup>rd</sup> quarter.	Annual
Visual Line Inspection	All distribution lines and pole hardware are visually inspected during preparation of tree trimming contract. Line sections receiving infrared inspection are also inspected visually during that process.	Annual
Padmount Equipment Inspection	Padmounted equipment is visually inspected to identify and correct any developing problems or safety concerns.	4 Years
3Ø Padmount Transformer Oil Test	Insulating oil is tested from every 3Ø padmounted transformer on our system, and all substation power transformers.	Annual
Line Equipment Inspection	All air switches, circuit tie switches, capacitors, regulators, and reclosers are visually inspected. Where applicable, proper operation of control equipment is verified and counter readings are recorded.	Annual
Pole Inspection and Treatment	Poles are inspected and treated at the ground line. External and/or internal decay inhibitors are applied where appropriate.	10 Years
Danger & Reject Pole Replacements	Replace condemned poles identified during pole inspection.	As needed, annually
Substation Equipment Inspection	Entire station is visually inspected. Equipment batteries are tested, communications equipment operation is verified, fans are tested, various gauge and counter readings are recorded. An infrared inspection is performed on all equipment twice a year.	Monthly
Recloser Maintenance	Change oil, check and adjust mechanism, check contacts, test operation.	5 Years

**§ 57.195(b)(2) - A description of each major event that occurred during the year being reported on, including the time and duration of the event, the number of customers affected, the cause of the event and any modified procedures adopted to avoid or minimize the impact of similar events in the future.**

<b>Date</b>	<b>Time</b>	<b>Duration (Minutes)</b>	<b>Customers Affected</b>	<b>Cause</b>
1/21/2020	07:31	96	1,028	At approximately 0730hrs on Tuesday, January 21 <sup>st</sup> , a primary conductor on a three-phase line broke at an angle clevis, causing the circuit recloser to trip to lockout, interrupting all 1,028 customers on the circuit.
7/8/20	17:46	591	2,463	At approximately 1745hrs on July 8th, a strong thunderstorm moved through Citizens' service area. The storm brought down trees that took down primary lines in several locations from outside the right-of-way. Two distribution feeders were interrupted.
8/27/20	18:58	1,546	2,070	At approximately 1850hrs on 8/27, a severe storm entered Citizens' service area moving southeast across Union County. The storm produced heavy rains and damaging winds in excess of 60mph. The strongest winds followed a similar track, affecting customers from an area north of Vicksburg southeast towards Winfield. Downed trees as well as limbs and debris propelled by high winds were responsible for all outages.
9/30/20	03:37	113	1,326	At approximately 0335hrs on 9/30, a tree limb fell on a three-phase line section during a period of heavy rainfall.
11/15/2020	11:26	146	1,326	A squirrel contacted a 3ph underground terminator on a section of line protected by the substation recloser, tripping the recloser to lockout.

**§ 57.195(b)(3) - A table showing the actual values of each of the reliability indices (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the EDC's service territory for each of the preceding 3 calendar years. The report shall include the data used in calculating the indices, namely the average number of customers served, the number of sustained customer minutes interruptions, the number of customers affected and the minutes of interruption. If MAIFI values are provided, the number of customer momentary interruptions shall also be reported.**

Prior 3 Years Reliability Indices							
Year	SAIFI	SAIDI	CAIDI	Avg # of Customers Served	# of Interruptions	# of Customers Interrupted	Customer Interruption Minutes
2020	0.08	7	87	7,045	43	561	48,645
2019	0.28	22	78	7,060	59	1,982	154,257
2018	0.21	16	76	7,056	49	1,449	109,478

**§ 57.195(b)(4) - A breakdown and analysis of outage causes during the year being reported on, including the number and percentage of service outages, the number of customers interrupted, and customer interruption minutes categorized by outage cause such as equipment failure, animal contact, tree related, and so forth. Proposed solutions to identified service problems shall be reported.**

<b>Outage Analysis by Cause</b>				
<b>Outage Cause</b>	<b>Number of Interruptions</b>	<b>% of Interruptions</b>	<b>Number of Customers Affected</b>	<b>Customer Interruption Minutes</b>
Off R/W Trees	11	26%	124	19,391
On R/W Trees	1	2%	19	2,736
Animal	9	21%	158	8,944
Weather	3	7%	21	1,332
Equipment	13	30%	58	5,503
Vehicle	2	5%	28	1,332
Other	4	9%	153	9,376
<b>Total</b>	<b>43</b>		<b>561</b>	<b>48,645</b>

Trees were again the most impactful cause of outages in 2020. Accounting for 26% of total outages, but nearly 40% of customer minutes interrupted. The company continues to emphasize hazard tree identification and removal with employees, tree contractors and customers. Equipment failures were also a significant cause of outages, accounting for 30% of total outages. The Company began to increase efforts during 2020 to replace porcelain cutouts in response to this trend and will continue to sustain the increased replacement efforts into 2021.

The Company continues to build its system to standards that typically exceed the NESC and to monitor industry best-practices regarding storm-hardening. New equipment, techniques and trends will be evaluated for their benefit to reliability.

**§ 57.195(b)(6) - A comparison of established transmission and distribution inspection and maintenance goals/objectives versus actual results achieved during the year being reported on. Explanations of any variances shall be included.**

<b>Program</b>	<b>Goal</b>	<b>Completed</b>	<b>Comment</b>
Infrared Inspection	Substation and 1/3 of all overhead lines	100%	Substation, all three phase line and 1/3 of single phase line inspected.
Vegetation Management	Entire System (9 circuits), as needed	100%	9 circuits inspected, trimmed as needed.
Visual Line Inspection	Entire System (9 circuits)	100%	9 circuits inspected.
Padmount Equipment Inspection	168	100%	168 locations inspected.
3Ø Padmount Transformer Oil Test	44	100%	46 transformers tested. Quantity revised to reflect actual quantity of transformers in service or inventory at time of testing.
Line Equipment Inspection	155	100%	155 locations inspected. <ul style="list-style-type: none"> <li>• 22 Capacitors</li> <li>• 46 Reclosers</li> <li>• 12 Regulators</li> <li>• 75 Switches</li> </ul>
Pole Inspection and Treatment	704	100%	736 Poles Inspected. Quantity revised to reflect the actual quantity of poles in service at time of inspection.
Danger and Reject Pole Replacement	“Danger” poles identified: 1 “Reject” poles identified: 4	100%	1 “danger” pole replaced. 4 “reject” poles replaced.
Substation Equipment Inspection	12 Monthly Inspections	100%	12 inspections completed.
Recloser Maintenance	10 Reclosers	50%	Completed maintenance on 5 units. Remaining 5 deferred due to COVID delays, scheduled for early 2021.

**§ 57.195(b)(7) - A comparison of budgeted versus actual transmission and distribution operation and maintenance expenses for the year being reported on in total and detailed by the EDC's own functional account code or FERC account code as available. Explanations of any variances 10% or greater shall be included.**

<b>Program</b>	<b>Budget \$</b>	<b>Actual \$</b>	<b>Comment</b>
Infrared Inspection		6,678	Not budgeted individually. 100% completed.
Vegetation Management	188,400	165,668	Budget for emergent removals based on historical averages, significantly under budget in 2020. 100% of planned work completed.
Visual Line Inspection			Not budgeted individually, included in Vegetation Management accounting. 100% completed.
Padmount Equipment Inspection		6,682	Not budgeted individually. 100% completed.
3Ø Padmount Transformer Oil Test		3,619	Not budgeted individually. 100% Completed.
Line Equipment Inspection		19,224	Not budgeted individually. 100% completed.
Pole Inspection and Treatment	31,000	32,225	100% completed. Variance within 10% of budget amount.
Substation Equipment Inspection		1,075	Not budgeted individually. 100% completed.
Recloser Maintenance		4,148	Not budgeted individually. 50% completed.
<b>Total</b>		<b>239,319</b>	

**§ 57.195(b)(8) - A comparison of budgeted versus actual transmission and distribution capital expenditures for the year being reported on in total and detailed by the EDC's own functional account code or FERC account code as available. Explanations of any variances 10% or greater shall be included.**

<b>Project</b>	<b>Budget Amount \$</b>	<b>Actual Expenditures \$</b>	<b>Variance \$</b>	<b>Comment</b>
General Construction	858,450	818,847	-39,603	
Transformers	96,140	55,064	-41,076	Lower than normal new service extensions, presumably due to COVID-19.
Meters	190,084	148,815	-41,269	Lower than normal new service extensions, presumably due to COVID-19.
Rt 15 Rebuild – Wyndham Hills	115,868	116,328	460	
UG Cable Replacement	55,241	70,554	15,313	Additional costs for equipment rental and labor for inaccessible pad foundation removals.
Lincoln Lane Relocation	21,349	20,579	-770	
<b>Total</b>	<b>1,337,132</b>	<b>1,230,187</b>	<b>106,945</b>	

**§ 57.195(b)(9) - Quantified transmission and distribution inspection and maintenance goals/objectives for the current calendar year detailed by system area (that is, transmission, substation and distribution).**

Program	Goal
Infrared Inspection	Substation and 3 circuits
Vegetation Management	Entire System (9 circuits), as needed
Visual Line Inspection	Entire System (9 circuits)
Padmount Equipment Inspection	168 Locations
3Ø Padmount Transformer Oil Test	44 Transformers
Line Equipment Inspection	155 Locations
Pole Inspection and Treatment	704 Poles
Danger and Reject Poles	To be determined from pole inspections
Substation Equipment Inspection	12 Monthly Inspections
Recloser Maintenance	10 Reclosers

All goals are in the substation and distribution areas. The Company does not own or operate any transmission facilities.

**§ 57.195(b)(10) - Budgeted transmission and distribution operation and maintenance expenses for the current year in total and detailed by the EDC's own functional account code or FERC account code as available.**

(These items are not budgeted by FERC account.)

<b>Program</b>	<b>Budget \$</b>	<b>Comment</b>
Infrared Inspection	N/A	Not budgeted individually
Vegetation Management	188,400	
Visual Line Inspection	N/A	Not budgeted individually
Padmount Transformer Inspection	N/A	Not budgeted individually
3Ø Padmount Transformer Oil Test	3,500 (estimated)	Not budgeted individually
Line Equipment Inspection	N/A	Not budgeted individually
Pole Inspection and Treatment	31,000	
Danger and Reject Poles	N/A	Not budgeted individually
Substation Equipment Inspection	N/A	Not budgeted individually
Recloser Maintenance	N/A	Not budgeted individually
<b>Total</b>		

**§ 57.195(b)(11) - Budgeted transmission and distribution capital expenditures for the current year in total and detailed by the EDC's own functional account code or FERC account code as available.**

(These items are not budgeted by FERC account.)

Project	Budget Amount \$
General Construction	858,450
Transformers	96,140
Meters	190,084
Rt 15 Rebuild – Wyndham Hills	115,868
UG Cable Replacement	55,241
Lincoln Lane Relocation	21,349
<b>Total</b>	<b>1,337,132</b>

**§ 57.195(b)(12) - Significant changes, if any, to the transmission and distribution inspection and maintenance programs previously submitted to the Commission.**

No significant changes.