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of Service

November 14, 2023

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

RE: Docket No. M-2023-3039027 – Annual Reliability Report

Dear Secretary Chiavetta,

Enclosed please find the Revised 2022 Annual Reliability Report for Citizens' Electric Company. This supersedes the previous 2022 Annual Reliability Report which was initially filed on April 28th of this year. That initial report shall be removed and replaced with this revised report. Please contact me at 570-522-6143 or andersonp@citizenselectric.com if I can answer any questions.

Best Regards,

A handwritten signature in black ink that reads "Patrick F. Anderson".

Patrick F. Anderson
Senior Director of Engineering & Operations

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

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Citizens' Electric Company
Annual Electric Service Reliability Report
2022

Prepared by Patrick F. Anderson
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November 14, 2023

§ 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.

Overall, Citizens' Electric saw a slight increase in reliability indices from 2021 to 2022. These figures, however, are within typical levels for the company, and do not represent a substantial change in customer experience. As discussed further in the Outage Analysis section, the year's performance was greatly impacted by increased outage activity in the month of December.

The Company continued its commitment to a responsible vegetation management program as evidenced by its 20th 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.

Current Maintenance Program		
Program	Description	Cycle
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 rd 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.

Date	Time	Duration (Minutes)	Customers Affected	Cause
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No excludable major events occurred during the 2022 calendar year.

§ 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
2022	0.27	27.5	100.5	7,103	62	1,947	195,608
2021	0.27	25.6	94.1	7,075	61	1,926	181,274
2020	0.08	7	87	7,045	43	561	48,645

§ 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.

Outage Analysis by Cause				
Outage Cause	Number of Interruptions	% of Interruptions	Number of Customers Affected	Customer Interruption Minutes
Off R/W Trees	29	47%	1,328	147,148
On R/W Trees	0	0%	0	0
Animal	15	24%	164	11,683
Weather	3	5%	38	3,210
Equipment	8	13%	57	4,858
Vehicle	2	3%	303	22,207
Other	5	8%	57	6,502
Total	62		1,947	195,608

Trees were again the most impactful cause of outages in 2022, accounting for 47% of total outages and 68% of customer minutes interrupted. All tree-related outages were attributed to off right-of-way trees and half of the total CMI due to tree-related outages occurred in the last month of the year. Over one third of customers affected and CMI from off right-of-way trees resulted from a single outage in December that was just under the major exclusion threshold. The company continues to emphasize hazard tree identification and removal with employees, tree contractors and customers.

The impact of equipment failures relative to total outages was reduced from 2021 to 2022 in terms of overall CMI and number of interruptions, highlighting the need for continued emphasis on identification of potential failures during I&M inspections. The Company has been increasing efforts in recent years to replace porcelain cutouts in response to this trend and will continue to sustain the increased replacement efforts into 2023. Additional locations for animal guarding will also be considered in locations that provide maximum benefit.

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.

Program	Goal	Completed	Comment
Infrared Inspection	Substation and 1/3 of all overhead lines	100%	Substation, all three-phase 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	208	100%	208 locations inspected. *
3Ø Padmount Transformer Oil Test	45	100%	45 transformers tested. *
Line Equipment Inspection	159	100%	159 locations inspected. * <ul style="list-style-type: none"> • 22 Capacitors • 46 Reclosers • 12 Regulators • 78 Switches
Pole Inspection and Treatment	636	100%	636 Poles Inspected. *
Danger and Reject Pole Replacement	“Danger” poles identified: 2 “Reject” poles identified: 8	100%	2 “danger” poles replaced. 8 “reject” poles replaced.
Substation Equipment Inspection	12 Monthly Inspections	100%	12 inspections completed.
Recloser Maintenance	10 Reclosers	0%	Program discontinued. <i>Recloser replacement program commencing in 2022. Recloser maintenance program is a voluntary initiative managed in parallel with the Company’s approved I&M plan.</i>

* *Quantity revised to reflect equipment in service at time of inspection.*

§ 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.

Program	Budget \$	Actual \$	Comment
Infrared Inspection		10,196	Not budgeted individually. 100% completed.
Vegetation Management	187,815	112,525	100% of planned work completed.
Visual Line Inspection			Not budgeted individually, included in Vegetation Management accounting. 100% completed.
Padmount Equipment Inspection		6,445	Not budgeted individually. 100% completed.
3Ø Padmount Transformer Oil Test		6,520	Not budgeted individually. 100% Completed.
Line Equipment Inspection		20,135	Not budgeted individually. 100% completed.
Pole Inspection and Treatment	29,500	28,690	100% completed.
Substation Equipment Inspection		3,420	Not budgeted individually. 100% completed.
Total		187,931	

§ 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.

Project	Budget Amount \$	Actual Expenditures \$	Variance \$	Comment
General Construction	1,153,966	935,755	218,210	This line item is heavily influenced by customer driven work. When customer work does not materialize as expected, manhours are reallocated to mix of capital and O&M work as necessary.
Transformers	98,541	107,776	(9,235)	
Meters	154,919	153,989	930	
Beagle Club Rd Reconductor	93,201	153,515	(60,314)	A scope change was approved to take advantage of the opportunity to perform other upgrades while on site due to the complexity and expense of traffic control. While this inflated total cost, it ultimately saves cost. Inflated material costs also impacted total spend.
Valley View Reconductor	92,264	112,758	(20,494)	Inflated contractor costs beyond those expected, as well as vacuum excavation to accommodate unmarked customer sewer lines increased costs.
Rt 45 Neutral Reconductor	39,937	41,051	(1,114)	
Single Phase Recloser Pilot	6,909	12,185	(5,276)	Material cost increase from original quote, additional site visits requiring traffic control and equipment setup for programming troubleshooting and settings.
Total	1,639,737	1,517,029	122,707	

§ 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	208 Locations
3Ø Padmount Transformer Oil Test	45 Transformers
Line Equipment Inspection	163 Locations
Pole Inspection and Treatment	636 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.)

Program	Budget \$	Comment
Infrared Inspection	N/A	Not budgeted individually
Vegetation Management	187,815	
Visual Line Inspection	N/A	Not budgeted individually
Padmount Transformer Inspection	N/A	Not budgeted individually
3Ø Padmount Transformer Oil Test	N/A	Not budgeted individually
Line Equipment Inspection	N/A	Not budgeted individually
Pole Inspection and Treatment	29,500	
Danger and Reject Poles	N/A	Not budgeted individually
Substation Equipment Inspection	N/A	Not budgeted individually
Recloser Maintenance	N/A	Not budgeted individually
Total		

§ 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	935,755
Transformers	107,776
Meters	153,989
Beagle Club Rd Reconductor	153,515
Valley View Reconductor	112,758
Rt 45 Neutral Reconductor	41,051
Single Phase Recloser Pilot	12,185
Total	1,517,029

§ 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.