



## CITIZENS' ELECTRIC COMPANY

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April 26, 2016

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

RE: Docket M-2016-2522508

Dear Secretary Chiavetta,

Enclosed please find the 2015 Annual Reliability Report for Citizens' Electric Company.

Please contact me at 570-522-6143 or [kelchnerj@citizenselectric.com](mailto:kelchnerj@citizenselectric.com) if I can answer any questions.

Sincerely,

A handwritten signature in cursive script that reads "John A. Kelchner". The signature is written in a dark ink and is positioned above the printed name and title.

John A. Kelchner, PE  
Vice President of Engineering & Operations

cc: Pennsylvania Office of Consumer Advocate  
Pennsylvania Office of Small Business Advocate  
Dave Washko (via email)  
Dan Searfoorce (via email)

Citizens' Electric Company  
Annual Electric Service Reliability Report  
2015

Prepared by John A. Kelchner, PE  
Vice President of Engineering & Operations  
570-522-6143

[kelchnerj@citizenselectric.com](mailto:kelchnerj@citizenselectric.com)

04/26/2016

**§ 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 Company completed 2015 with a rolling twelve-month SAIFI that was unchanged from the prior year. The Company experienced slight increases in SAIDI and CAIDI.

The Company set a new all-time peak system load on February 20, 2015, beating the prior record which had been set the year before. All facilities performed well and there were no temperature or load-related outages during this peak period.

As discussed below, all planned inspection and maintenance activities were completed. The Company is continuing to see significant impact from the Emerald Ash Borer throughout its territory. As this invasive beetle moved through, a significant number of deteriorating Ash trees became apparent. Beginning in 2014, the Company committed additional resources to identify, prioritize and remove significant threats to reliability from hazard trees. This effort continued throughout 2015.

To continue the Company's efforts to maximize reliability and customer service, it participates in and gathers information from various industry best practices groups. These groups include members from diverse utility groups such as the Pennsylvania Rural Electric Association, the Energy Association of Pennsylvania, and the National Rural Electric Cooperative Association. The Company will continue to implement best practices defined by these groups as appropriate.

Citizens' Electric was again recognized in 2015 as a "Tree Line USA" utility. This award from the National Arbor Day Foundation recognized the Company for the thirteenth consecutive year for its use of nationally approved trimming techniques and procedures in its vegetation management program.

The Company does not own or maintain any transmission facilities.

### Current Maintenance Programs

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 <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 airswitches, 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 of Event (Minutes)	# of Customers Affected	Cause
4/20/2015	6:29 AM	21	6,892	Transformer insulators failed at PPL’s Sunbury substation, causing an interruption of the Sunbury – Lewisburg 138 kV transmission line. This line is the normal feed to the Citizens’ Electric distribution substation. Citizens’ crews coordinated with PPL dispatchers to transfer all Citizens’ load to an alternate feed from PPL’s Lycoming substation. Service was restored to all Citizens’ customers within 21 minutes.
5/12/2015	4:24 AM	218	911	A porcelain cutout failed during rainy conditions. The failure caused damage to a pole-top, ultimately leading to the interruption of 911 customers. Crews responded quickly and had service restored to 898 customers within 2 hours. Service to the final 13 customers was restored in less than 4 hours.
9/17/2015	1:24 PM	37	1,387	Three fiberglass brackets failed on adjacent poles, causing attached overhead primary wire to fall to the ground. This resulted in a circuit lockout at the substation, interrupting 1,387 customers, occurring during calm weather. Although no witnesses came forward, it is apparent this outage was caused by farm equipment working in the area at the time of the outage that snagged a phone line attached to these poles, causing a sudden shock mechanical load on the brackets.

**§ 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.**

Year	SAIFI	SAIDI	CAIDI	Avg # of Customers Served	# of Interruptions	# of Customers Interrupted	Customer Interruption Minutes
2015	0.19	18	91	6,909	41	1,333	121,876
2014	0.19	17	88	6,881	35	1,306	115,083
2013	0.46	37	81	6,883	45	3,153	256,087

**§ 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 Cause	Number of Interruptions	% of Interruptions	Number of Customers Affected	Customer Interruption Minutes
On R/W Trees	1	2	5	350
Animals	12	29	205	10,779
Equipment	15	37	58	4,029
Off R/W Trees	4	10	825	101,955
Weather	3	7	23	1,719
Vehicle	3	7	203	1,515
Other	3	7	14	1,529
Total	41		1,333	121,876

Equipment failure remained the single largest outage cause during 2015. Types of equipment failure included insulators, cutouts, transformers and arrestors. No actionable trend of specific equipment failure is apparent.

The Company continues to build its system to standards that typically exceed the NESC and to monitor industry best-practices regarding storm-hardening. The Company is also continuing its efforts to address off right-of-way trees and the outages they cause. It is aggressively working with property owners to secure permission for removal of danger trees as they are identified, and is dedicating significant effort to address the continued Emerald Ash tree issues being observed again this year.

**§ 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%	All planned areas were 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	175 Locations	100%	175 locations inspected
3Ø Padmount Transformer Oil Test	39 Transformers	108%	42 transformers tested. Quantity revised to reflect actual quantity in service at time of inspection.
Line Equipment Inspection	140 Locations	103%	144 locations inspected. Quantity revised to reflect actual quantity in service at time of inspection.
Pole Inspection and Treatment	563 Poles	99%	559 poles inspected. Quantity revised to reflect actual quantity in service at time of inspection.
Danger and Reject Pole Replacement	“Danger” poles identified: 3 “Reject” poles identified: 35	32%	All three danger poles have been replaced. Nine reject poles have been replaced to date. The remaining poles will be replaced or eliminated within 12 months of identification.
Substation Equipment Inspection	12 Monthly Inspections	100%	12 inspections completed.
Recloser Maintenance	9 Reclosers	100%	Completed maintenance on 9 units.

**§ 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		4,775	Not budgeted individually. 100% completed.
Vegetation Management	128,500	177,732	Exceeded budget by 38%. This was due to significantly higher than budgeted contractor costs. To help mitigate this price pressure, the Company changed its schedule so as to solicit bids earlier in the year for 2016. This yielded a return to more typical contractor costs for the current year.
Visual Line Inspection		624	Not budgeted individually. 100% completed.
Padmount Equipment Inspection		4,926	Not budgeted individually. 100% completed.
3Ø Padmount Transformer Oil Test		1,734	Not budgeted individually. 100% Completed.
Line Equipment Inspection		27,312	Not budgeted individually. 100% completed.
Pole Inspection and Treatment	27,000	19,923	100% completed. Underran budgeted amount by 26% due to favorable contractor bid results.
Substation Equipment Inspection		3,887	Not budgeted individually. 100% completed.
Recloser Maintenance		6,906	Not budgeted individually. 100% completed.
<b>Total</b>		<b>\$247,819</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	747,213	666,033	-81,180	More crew labor was allocated to the specific capital projects listed below, resulting in a reduction labor allocation to small discretionary projects.
Transformers	117,740	89,092	-22,648	Due to the nature of new connections in 2015, fewer transformers were needed than budgeted.
Meters	54,892	100,893	46,001	The Company accelerated its mechanical meter replacement program, necessitating a larger purchase of new meters.
Rt. 45 Circuit Reconductor	54,523	64,983	10,460	Additional traffic control was necessary due to wet field conditions.
Newman Road Line Extension	45,059	114,483	69,424	Additional poles were replaced based on as-found field conditions. These replacements were not part of the original project estimate. Also, due to weather and road conditions, more traffic control was necessary than budgeted.
Supplee Mill Road Upgrade	64,962	87,459	22,497	This project was redesigned to accommodate the replacement of three obsolete voltage regulators.
Underground Cable Replacement – Wyndham Hills and Westridge	59,346	65,720	6,374	The bids for contract work on this project came in slightly higher than budgeted.
Total	1,143,735	1,188,663	50,928	

**§ 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).**

<b>Program</b>	<b>Goal</b>
Infrared Inspection	Substation and 3 circuits
Vegetation Management	Entire System (9 circuits), as needed
Visual Line Inspection	Entire System (9 circuits)
Padmount Equipment Inspection	166 Locations
3Ø Padmount Transformer Oil Test	42 Transformers
Line Equipment Inspection	144 Locations
Pole Inspection and Treatment	529 Poles
Danger and Reject Poles	To be determined from pole inspections
Substation Equipment Inspection	12 Monthly Inspections
Recloser Maintenance	19 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	185,500	
Visual Line Inspection	N/A	Not budgeted individually
Padmount Transformer Inspection	N/A	Not budgeted individually
3Ø Padmount Transformer Oil Test	2,500 (estimated)	Not budgeted individually
Line Equipment Inspection	N/A	Not budgeted individually
Pole Inspection and Treatment	22,000	
Danger and Reject Poles	N/A	Not budgeted individually
Substation Equipment Inspection	N/A	Not budgeted individually
Recloser Maintenance	N/A	Not budgeted individually
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.)

<b>Project</b>	<b>Budget Amount \$</b>
General Construction	824,110
Transformers	111,615
Meters	55,692
River Rd – Moore Tieline	130,209
Install additional capacitors	47,175
UG Replacement – Fairfield	85,913
Total	\$1,254,714

**§ 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.