

Citizens' Electric Company
Annual Electric Service Reliability Report
2013

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§ 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 the first three months of 2013 with a significant achievement. The Company experienced no outages of any kind until March 31st. As the year progressed, a handful of unusual, but significant outages caused an upward swing in SAIFI and SAIDI. With the very demanding reliability standards and benchmarks in place for the Company, and its small system size, a minimal amount of outage activity can cause a significant fluctuation in metrics. The abnormal deviations in 2013 can be traced to a total of seven outages, listed below:

Date	Cause	# of Customers Affected
4/3/2013	Vehicle Accident	135
4/8/2013	Equipment Failure	334
5/19/2013	Vehicle Accident	140
5/22/2013	On R/W Tree	485
7/22/2013	Employee Error	930
8/21/2013	Off R/W Tree	483
11/24/2013	Off R/W Tree	249

Unusual outages occurring in 2013

The following points further expand on the unique nature the above outages:

- In 2011 and 2012, no significant vehicle outages occurred, compared with two significant outages in 2013.
- The equipment failure on 4/8 involved a newer vintage electronic recloser control. This equipment is inspected annually and had been inspected on 1/14, with no observed issues. The failed unit was scrapped and a replacement unit was installed. No further problems are expected at the location.

- The on right-of-way tree outage occurred when a large limb broke out of a tree during a thunderstorm. The tree had been properly trimmed and showed no sign of potential problems.
- The Employee Error on 7/22 occurred when a line worker inadvertently made contact between an energized line and a grounded guy wire with a tool. All personal protective equipment was in use and the employees had placed the circuit protective equipment in sensitive trip “Hot Line Tag” mode as a precaution, all in accordance with the Company’s Safety Manual. No flash occurred and no injuries were sustained, however 930 customers were interrupted for a short time. Since this event was not beyond the control of the Company, a request for exclusion as a Major Event was not submitted, even though the number of customers affected was greater than 10%.
- An off right-of-way tree outage occurred on 8/21 when a branch came down unexpectedly during good weather.
- An off right-of-way tree outage occurred on 11/24 during winds gusting to just under 30 mph following a period of wet weather.

After thorough analysis of each incident the Company believes these isolated outages are not indicative of any continued downward trend or inadequacies in its inspection and maintenance program. The following actions were taken:

- The vehicle accidents were reviewed to look for any trends or emerging issues. It does not appear that pole location was a factor in either incident.
- Following the employee error on 7/22, a meeting was held with all line workers, where the employees directly involved in the outage described the specific actions that led to the interruption and how a moment of inattentiveness could have had much more serious results. Enthusiastic discussion and the exchange of ideas took place which allowed all employees to learn from the incident. This will help to prevent a recurrence.
- Early in 2013, the Company recognized that 2012 had been a prolific growing season throughout its territory. It was apparent that the trend would continue in 2013 as well. To ensure continued reliability, the Company increased its vegetation maintenance expenditures from the budgeted amount of \$92,250 to an actual amount of \$130,719, an increase of 42% over budget and 84% over 2012 expenditures. The Company has further increased its 2014 vegetation budget by another 10% over 2013 expenditure levels. The Company does not believe that any of the three tree outages discussed above were reasonably preventable. The increased expenditures and ongoing emphasis on vegetation management will permit aggressive danger tree removal and right-of-way maintenance.

A return to more typical reliability numbers is expected in 2014.

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.

Throughout 2013, Citizens' Electric worked closely with the National Rural Electric Cooperative Association, Pennsylvania Rural Electric Association and Federated Rural Electric Insurance Exchange to further develop the Company's foundation for continuous enhancement of its safety program. By embracing a top down commitment from the board of directors and senior managers through every level of the organization, the Company was recognized by NRECA's Rural Electric Safety Achievement Program (RESAP). To achieve this recognition, the Company underwent a rigorous inspection and evaluation program, conducted by an independent peer group of professionals. The program is designed to keep safety and all related issues at the forefront of all decisions made in the conduct of business.

Citizens' Electric was again recognized in 2013 as a "Tree Line USA" utility. This award from the National Arbor Day Foundation recognizes Citizens' for using 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 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 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 (Minutes)	Customers Affected	Cause
5/19/2013	6:36 AM	125	1,304	A fault occurred on a feeder recloser located at the Citizens' Electric substation. This fault resulted in an outage to 1,304 customers. Service was restored to 657 of the affected customers within 104 minutes. The remaining 647 customers were restored in a total of 125 minutes. No cause was immediately apparent, but animal contact is suspected. The weather was damp and drizzling at the time of the fault.
6/18/2013	2:04 PM	54	1,222	A porcelain pole-top insulator failed, allowing a phase wire to contact the pole. This resulted in an outage affecting 1,222 customers. The problem was located and repaired and service was restored to all customers in 53 minutes.
7/7/2013	4:37 PM	71	793	A fast-moving thunderstorm brought heavy rain and strong winds across the Company's service territory. Broken trees and limbs caused several outages to overhead lines. A peak gust of 46 mph was recorded at the Company's headquarters.

§ 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
2013	0.46	37	81	6,883	45	3,153	256,087
2012	0.09	11	129	6,831	32	596	77,030
2011	0.35	44	126	6,823	56	2,390	300,660

§ 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	485	43,165
Animals	9	20	126	6,214
Equipment	12	27	372	39,196
Off R/W Trees	6	13	761	59,653
Weather	9	20	152	51,612
Vehicle	4	9	323	47,465
Other	4	9	934	8,782
Total	45		3,153	256,087

Weather was the largest cause of outages during the past 12 months from both a quantity and customer minutes perspective. These outages generally involved lightning or wind. Frequent, strong spring and summer thunderstorms contributed to an overall increase in outages compared to the same period last year. Much of the increase in customer minutes was caused by off right-of-way tree issues, largely occurring during storms.

Additionally, the number of outages caused by vehicles jumped from 1 in 2012 to 4 in 2013. Likewise, outages resulting from equipment failure rose from 1 in 2012 to 12 in 2013. 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 increase in Emerald Ash tree issues being observed 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.

Program	Goal	Completed	Comment
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	204 Locations	98%	200 locations inspected. Quantity adjusted to reflect actual quantity in service at time of inspection.
3Ø Padmount Transformer Oil Test	35 Transformers	100%	35 transformers tested.
Line Equipment Inspection	140 Locations	100%	140 locations inspected.
Pole Inspection and Treatment	631 Poles	97%	611 poles inspected. Quantity revised to reflect actual quantity in service at time of inspection.
Danger and Reject Pole Replacement	10 Reject Poles – No Danger Poles identified	100%	10 poles replaced.
Substation Equipment Inspection	12 Monthly Inspections	100%	12 inspections completed.
Recloser Maintenance	10 Reclosers	100%	Completed maintenance on 10 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.

Program	Budget \$	Actual \$	Comment
Infrared Inspection		2,311	Not budgeted individually. 100% completed.
Vegetation Management	92,250	130,719	Significantly more trimming and removals were completed than budgeted based on actual field conditions found.
Visual Line Inspection		1,050	Not budgeted individually. 100% completed.
Padmount Equipment Inspection		2,941	Not budgeted individually. 100% completed.
3Ø Padmount Transformer Oil Test		1,937	Not budgeted individually. 100% Completed.
Line Equipment Inspection		14,063	Not budgeted individually. 100% completed.
Pole Inspection and Treatment	22,400	23,887	
Substation Equipment Inspection		4,683	Not budgeted individually. 100% completed.
Recloser Maintenance		7,794	Not budgeted individually. 100% completed.
Total		189,385	

§ 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	715,539	635,004	-80,535	Due to two large reimbursable "make-ready" projects for fiber optic attachments, less charges accrued to the GC projects during the year.
Transformers	117,224	97,092	-20,132	Due to the nature of new connections in 2013, fewer transformers were needed than budgeted.
Meters	46,284	63,431	17,147	A significant number of new cable TV power supply installations across the Company's territory caused an increase in the quantity of meters needed.
Rt. 45 Circuit Reconductor	152,080	157,605	5,525	
Replace UG in Spruce Hills	107,839	61,994	-45,845	Less rock was encountered than expected during directional boring, resulting in lower contractor costs and reduced crew labor.
Total	1,138,966	1,015,126	-123,840	

§ 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	197 Locations
3Ø Padmount Transformer Oil Test	35 Transformers
Line Equipment Inspection	140 Locations
Pole Inspection and Treatment	625 Poles
Danger and Reject Poles	To be determined from pole inspections
Substation Equipment Inspection	12 Monthly Inspections
Recloser Maintenance	8 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	143,500	
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	26,500	
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	781,011
Transformers	117,323
Meters	55,907
Rt. 45 Circuit Reconductor	32,423
Rt. 192 Circuit Reconductor	80,535
UG Replacement – Valley View.	88,538
Total	1,155,737

§ 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.