

ORDER NO. 88814

IN THE MATTER OF THE REVIEW
OF ANNUAL PERFORMANCE
REPORTS ON ELECTRIC SERVICE
RELIABILITY FILED PURSUANT
TO COMAR 20.50.12.11

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BEFORE THE
PUBLIC SERVICE COMMISSION
OF MARYLAND

Case No. 9353

Issue Date: September 4, 2018

Pursuant to the Maryland Electricity Service Quality and Reliability Act¹ and the Code of Maryland Regulations (“COMAR”) 20.50.12 *et seq.*, the Maryland Public Service Commission (“Commission”) accepts the annual reliability performance reports filed by Baltimore Gas and Electric Company (“BGE”), Potomac Electric Power Company (“Pepco”), Delmarva Power & Light Company (“Delmarva”), Potomac Edison Company (“Potomac Edison”), Choptank Electric Cooperative, Inc. (“Choptank”), and Southern Maryland Electric Cooperative, Inc. (“SMECO”) (collectively “the Electric Companies”), and notes the Corrective Action Plans filed by the Electric Companies addressing the standards for which they were deficient, as further discussed below.

I. INTRODUCTION AND PROCEDURAL HISTORY

The Maryland Electricity Service Quality and Reliability Act requires that “each electric company provide its customers with high levels of service quality and reliability

¹ Chapter 168 of the Acts of 2011.

in a cost-effective manner, as measured by objective and verifiable standards.”² In accordance with the Act, the Commission established specific service quality and reliability standards that are designed to improve reliability and ensure an objectively high level of performance tailored to each Electric Company. Specifically, the Commission enacted benchmark standards for service quality and reliability through Rule Making 43 (“RM43”), which are codified in COMAR 20.50.12 *et seq.*³ The Commission held a second rulemaking session on September 1-2, 2015, which set more stringent system-wide reliability standards for the Electric Companies to meet for years 2016 through 2019.⁴ On August 3, 2018, the Commission published for notice and comment in the Maryland Register proposed revisions to COMAR that would standardize the selection of poorest performing feeders by the use of performance-based criteria centered upon a comparison with the electric company’s system average reliability indexes.⁵ Those proposed regulations, however, have not yet been adopted as final regulations.

The service quality and reliability standards address a wide range of categories including system-wide reliability, poorest performing feeders, multiple device activation, service interruption, downed wire response, customer communication, and vegetation management. The 2017 reporting year, addressed herein, represents the fifth full year since these reliability standards were established.

² See Section 7-213(b) of the Public Utilities Article (“PUA”) of the Maryland Code.

³ See RM43, *Revisions to COMAR 20.50 – Service Supplied by Electric Companies – Proposed Reliability and Service Quality Standards*. The regulations became effective on May 28, 2012.

⁴ Pepco and Delmarva agreed to further reduce their System Average Interruption Duration Index and System Average Interruption Frequency Index scores below what COMAR would otherwise have required as a condition for Commission approval of the merger of their parent corporation, Pepco Holdings, Inc., with Exelon Corporation. See Order No. 86990 in Case 9361, *In the Matter of the Merger of Exelon Corporation and Pepco Holdings, Inc.* Although Pepco’s more stringent merger standards are applicable for this reporting year, Delmarva’s elevated targets do not take effect until 2018.

⁵ See RM63, *Revisions to COMAR 20.50.12.03 - Service Supplied by Electric Companies - Service Quality and Reliability Standards - Poorest Performing Feeder Standard*. The Commission will hold a rule making session on September 18, 2018, to consider whether to finally adopt these proposed revisions.

COMAR 20.50.12.11 requires that each Electric Company serving 40,000 or more customers in Maryland submit an annual performance report by April 1 of each year that summarizes the electric service reliability results for the preceding year. PUA § 7-213(f) provides that the Commission shall determine whether each Electric Company has met the relevant service quality and reliability standards and authorizes the Commission to take appropriate corrective action where compliance is not met.⁶

On or about April 1, 2018,⁷ the Electric Companies timely filed their respective annual reports with the Commission covering the period from January 1, 2017 through December 31, 2017.⁸ On May 23, 2018, the Commission issued a Notice establishing this proceeding, setting a date for hearing, and providing an opportunity for parties to file written comments. Specifically, the Notice set a legislative-style hearing for the purpose of (i) reviewing the annual performance reports of the Electric Companies to determine whether they have met the service quality and reliability standards adopted by the Commission; (ii) reviewing the Electric Companies' proposed reliability standards that will become applicable to the years 2020 through 2023; and (iii) considering whether the Commission should modify the definition of a "Major Outage Event" regarding the applicability of COMAR 20.50.01.03(27)b – declaration of a state of emergency – as it relates to Major Outage Event reporting.⁹ On July 24, 2018, the Commission issued a

⁶ For example, PUA §§ 7-213(f)(2)(ii) and 7-213(e)(1)(iii) authorize the Commission to require an Electric Company to file a Corrective Action Plan that delineates specific steps the company will take to meet the standards. PUA §§ 7-213(f)(2) and 13-201 authorize the Commission to impose appropriate civil penalties for noncompliance with the PUA or COMAR.

⁷ Because April 1 was a Sunday this year, all reports were due on and received by April 2, 2018.

⁸ The data provided by the Electric Companies in their reports cover the reporting period from January 1, 2017 through December 31, 2017, with the exception of the Poorest Performing Feeder and Multiple Device Activation standards, where outage data is submitted that covers the 12-month period ending on September 30, 2017.

⁹ The Commission does not decide in this Order whether the definition should be changed.

Notice of Modification of Hearing, granting the motion of BGE, Delmarva, and Pepco to delay review of the Electric Companies' recommended reliability standards covering the years 2020-2023.

On July 19, 2018, several intervening parties filed Comments addressing the issues set by the Commission's May 23 Notice. Those parties include Montgomery County, Maryland; the Maryland Office of the People's Counsel ("OPC"); and the Commission Technical Staff Counsel ("Staff").¹⁰ On August 22, 2018, BGE and Pepco filed joint reply comments. Also on that date, the following parties filed separate reply comments: Montgomery County, OPC, Staff, and Potomac Edison.

On Friday, July 27, 2018, the Commission conducted a legislative-style hearing to consider the reliability reports filed by the Electric Companies and the comments filed by the parties. Each party made a presentation to the Commission during this hearing and presented a witness to answer Commission questions.

II. DISCUSSION

A. System-Wide Reliability Standards

COMAR 20.50.12.02D(1) sets forth the minimum standards with which each Electric Company must comply regarding system-wide reliability. Specifically, those regulations set targets for each Electric Company for System Average Interruption Frequency Index ("SAIFI")¹¹ and System Average Interruption Duration Index

¹⁰ Staff filed three separate documents on July 19, which include (i) Staff Review of System-Wide Reliability Standards for 2020-2023; (ii) Staff Comments Regarding the Definition of Major Outage Event; and (iii) Staff Review of Annual Performance Reports on Electric Service Reliability (Staff Review).

¹¹ SAIFI represents how often customers on average experience an interruption in a given year. Mathematically, it is equal to the number of customer interruptions divided by the total number of customers serviced on the electric system.

(“SAIDI”).¹² For 2017, BGE, Pepco, Delmarva, Potomac Edison, and Choptank fully met their system-wide reliability performance standards. As Staff observed, BGE and Pepco outperformed their targets by “significant margins,” with BGE reporting a SAIFI of 0.80, well below its COMAR target of 1.27; and a SAIDI of 92.2 minutes, significantly below its COMAR target of 177.6 minutes.¹³ Similarly, Pepco achieved a SAIFI of 0.75 against a target of 0.99; and a SAIDI of 64 minutes, as contrasted to a target of 116 minutes. SMECO failed to meet its reliability targets. SMECO filed a Corrective Action Plan to improve its SAIDI and SAIFI scores, which is discussed further below.

Staff conducted several trend analyses for the reporting year to measure how the Electric Companies’ system-wide reliability has changed over time. In its three-year analysis (measuring performance from 2015 through 2017), Staff noted that BGE, Pepco, Potomac Edison, and Choptank performed better than their three-year average SAIFI.¹⁴ Additionally, Pepco demonstrated continuous improvement in SAIFI for each of the three years and posted the best SAIFI among all companies in 2017. Staff performed the same three-year trend analysis for SAIDI and found that all Electric Companies performed better than their respective three-year average SAIDI. Delmarva and Pepco showed continuous improvement for each of the three years and Pepco posted the best SAIDI among all companies for 2017.¹⁵ Staff also evaluated the Electric Companies using the

¹² SAIDI measures the total time that customers on average face interrupted service in a given year. It is equal to the number of customer interruption minutes divided by the total number of customers serviced on the electric system.

¹³ Staff Review at 18-19.

¹⁴ Staff Review at 21.

¹⁵ Staff Review at 22.

Customer Average Interruption Duration Index (“CAIDI”).¹⁶ For 2017, five of the Electric Companies (Pepco, Delmarva, Potomac Edison, Choptank, and SMECO) performed at or better than their three-year average CAIDI.¹⁷ Delmarva posted the best CAIDI among all Electric Companies for 2017.

Staff additionally conducted a rolling two-year trend analysis to eliminate aberrations that could be caused by a single good or bad year. Staff’s analysis began with the two-year period 2013/2014 and continued through the period 2016/2017. Regarding SAIFI, Staff noted “a continuous improvement in reliability for Delmarva and Pepco” for the time period 2013/2014 through 2016/2017.¹⁸ BGE and Potomac Edison demonstrated a “stable” performance during this time period, while the performances of Choptank and SMECO have demonstrated a “decline in reliability.”¹⁹ Likewise for SAIFI, Staff’s two-year trend revealed that BGE, Pepco, Delmarva, and Potomac Edison showed continuous improvement. The two-year trend demonstrated a decline in performance for Choptank and SMECO.²⁰ Finally, Staff performed a two-year trend analysis for CAIDI, which demonstrated continuous improvement in the time needed to restore service to customers experiencing an interruption for BGE, Pepco, Delmarva, and Potomac Edison. Choptank and SMECO showed deteriorating performance for the periods 2013/2014 through 2015/2016. However, the cooperatives improved from 2015/2016 through 2016/2017.²¹

¹⁶ CAIDI measures the average time required to restore service to customers per interruption. It is calculated by dividing SAIDI by SAIFI.

¹⁷ Staff Review at 23.

¹⁸ Staff Review at 24.

¹⁹ Staff Review at 25.

²⁰ Staff Review at 25.

²¹ Staff Review at 27.

Corrective Action Plan

SMECO's 2017 SAIDI and SAIFI results did not satisfy the 2017 Standards contained in COMAR 20.50.12.02D(1). Specifically, COMAR standards require that SMECO achieve a SAIFI of 1.34; however, the company achieved a SAIFI of 1.55. Similarly, SMECO's SAIDI target is set at 136.8 minutes; however, SMECO reported 145.8 minutes.

In its report to the Commission, SMECO maintained that its failure to achieve COMAR targets was primarily due to the impact of six minor storms (none of which qualified individually as Major Outage Events pursuant to COMAR).²² Nevertheless, SMECO argued that in total, the storms affected over 41,000 customers in 6,687 incidents and contributed 0.37 to SAIFI and 30.6 minutes to the company's SAIDI.²³ SMECO noted that all customers that experienced an interruption during these events were restored within 24 hours.

In its Corrective Action Plan, SMECO stated that it will focus on identifying opportunities to improve existing operational practices, such as through applying the methodology used for major events identified in the Emergency Response Plan for minor events when warranted by the nature or timing of the event. SMECO also stated that it will increase crews on shift at times when coverage is most needed. SMECO is also examining additional sites throughout its 1,150 square mile service territory for storing materials that are frequently used during outage restoration.²⁴

²² SMECO also experienced one COMAR Major Outage Event in 2017 – an ice storm in March, 2017, referred to as Winter Storm “Stella.” SMECO Annual Performance Report at 2.

²³ SMECO Annual Performance Report, Appendix A at 20-21.

²⁴ SMECO stated that items such as poles, transformers and other large and frequently used materials will be stored in these staging areas in order to reduce the time required to obtain the materials during the restoration of an outage in the remote areas of its service territory.

Staff commented that SMECO’s Corrective Action Plan will positively impact the company’s SAIDI score, by reducing the number of outages, but that it will not materially improve SMECO’s SAIFI score.²⁵ Staff argued that SMECO’s failure to meet its SAIFI target has resulted from not utilizing planning margins when prior SAIFI standards were set. Electric Companies such as BGE, Pepco, Delmarva, and Potomac Edison incorporate planning margins in their SAIFI planning to provide a “buffer” to hedge goal attainment to account for potential sources of reliability variability such as weather.²⁶ SMECO does not do this, however, which makes the company less likely to meet its targets in the future. Nevertheless, Staff recommends that the Commission approve SMECO’s proposed Corrective Action Plan and look towards ways of meeting the company’s 2020 through 2023 goals.²⁷ Likewise, OPC expressed concern that many of SMECO’s remarks in its Corrective Action Plan “appear preliminary or even aspirational.”²⁸ OPC concluded that SMECO’s “failure to meet these performance standards is unacceptable and must not continue.”²⁹

The Commission views SMECO’s inability to meet both its SAIDI and SAIFI targets for reporting year 2017 as a significant failure. Despite SMECO’s argument that the minor storm events contributed to the problem, the Commission does not view the deviation from the standards as an aberration. The Maryland Electricity Service Quality and Reliability Act requires that “each electric company provide its customers with high

²⁵ Staff Review at 19.

²⁶ Staff Review of System-Wide Reliability Standards for 2020-2023 at 26.

²⁷ Staff Review at 82.

²⁸ OPC Comments at 8.

²⁹ OPC Comment at 8.

levels of service quality and reliability in a cost-effective manner,”³⁰ including in times of persistent inclement weather and/or multiple minor storms. SMECO also failed to meet the applicable SAIFI and SAIDI standards in 2015; thus, SMECO has not met its reliability targets in two of the last three years. Additionally, Staff’s trending analysis demonstrates that SMECO’s reliability performance has deteriorated. The Commission agrees with the comments of Staff and OPC that SMECO’s Corrective Action Plan is light on detail and seemingly not targeted to measures that will drive the company’s SAIFI score lower. Nevertheless, the Commission will accept SMECO’s Corrective Action Plan at this time and direct it to improve its SAIDI and SAIFI scores. Additionally, the Commission directs SMECO to file by October 31, 2018, an interim assessment of the effectiveness of its plan, including updated 2018 SAIFI and SAIDI data through the third quarter of 2018. As part of the Commission’s November 20, 2018 Administrative Meeting, SMECO will make a presentation to the Commission regarding the effectiveness of its remediation plan.

We commend BGE, Pepco, Delmarva, Potomac Edison, and Choptank for meeting their system-wide reliability standards.

B. Poorest Performing Feeder Standards

COMAR 20.50.12.03 directs each Electric Company to report to the Commission the three percent of feeders assigned to Maryland that are identified by the Electric Company as having the poorest feeder reliability, as measured through SAIDI, SAIFI, and CAIDI indices. COMAR 20.50.12.03C requires that each Electric Company identify

³⁰ PUA § 7-213(b).

actions to improve the reliability of those poorly performing feeders. The regulations prohibit “repeat offenders,” by specifying that no feeder ranked in the poorest performing three percent of feeders shall subsequently perform in the poorest performing three percent during either of the two subsequent 12-month reporting periods, after allowing one 12-month reporting period for the utility to implement remediation measures.³¹ In other words, the standard prohibits any feeders identified as poorest performing feeders (“PPFs”) in 2014 or 2015, after receiving remedial actions, from being reported as *repeat* PPFs in 2017.

The six Electric Companies collectively maintain 2,888 feeders, 91 of which were identified as their lowest PPFs in 2017. These 91 feeders reported a SAIFI about 3.5 times the overall system average for all feeders in Maryland and a SAIDI about 3.8 times above the system average for all feeders in the State.³² As required by COMAR, the Electric Companies proposed a variety of measures to improve the reliability of their PPFs.

In 2017, five Electric Companies (BGE, Pepco, Delmarva, Potomac Edison, and SMECO) reported having repeat PPFs, in contravention of the COMAR requirements. Specifically, BGE reported eight PPFs, Pepco two, Delmarva three, Potomac Edison two, and SMECO three.³³ Choptank alone reported no repeat PPFs.

Each Electric Company filed a Corrective Action Plan to describe further remediation measures that will be taken to improve the performance of repeat PPFs.

³¹ COMAR 20.50.12.03A(5).

³² Staff Review at 20.

³³ Staff Review at 32.

BGE's Corrective Action Plan for its eight repeat PPFs includes enhanced vegetation management, including additional tree-trimming and tree removal; selective undergrounding; additional fusing to loop feed radial customers; the installation and reprogramming of reclosers to provide improved sectionalization of the feeder and to reduce the number of customers interrupted during outage events; the creation of new feeder ties; continued implementation of BGE's cable replacement program; the installation of additional underground cable; replacement of defective wildlife protections; and the replacement of defective underground conductors and equipment.³⁴ To mitigate its two repeat PPFs, Pepco will enhance vegetation management and install additional equipment.³⁵ The company also plans to upgrade 1,200 feet of existing three-phased mainline bare wire with 477 tree-wire and add larger cross arms. Finally, the company will add five automatic circuit reclosers and replace poles and a gang operated switch. Delmarva's remediation plans for its three repeat PPFs includes installing pole delineators/reflectors to avoid motor vehicle accidents; creating distribution ties and establishing a distribution automation scheme; installing fiber communications between reclosers and enabling a new relay protection scheme; extending a feeder to provide distribution automation flexibility; and targeting certain transmission and substation vulnerabilities.³⁶ Potomac Edison's remediation plan includes splitting an existing circuit into two circuits; constructing a new substation; rebuilding a distribution circuit, constructing a distribution automation scheme; installing additional sectionalizing

³⁴ BGE Report, Attachment B, 2017 Poorest Performing Feeders Corrective Action Plan.

³⁵ Pepco Report, Attachment B, Corrective Action Plan for 2017 Poorest Performing Repeat Feeders.

³⁶ Delmarva Report, Attachment B, Corrective Action Plan for 2017 Poorest Performing Repeat Feeders.

devices; replacing existing cross arms; and remediating danger trees.³⁷ Finally, SMECO plans to remediate its two repeat PPFs through its cable replacement program; capital improvement projects; removal of danger trees; and undergrounding projects.³⁸

OPC commented that the repeat PPF standard may no longer be cost-effective, and has supported changes to the standard, as recommended by the Poorest Performing Feeder Working Group.³⁹ In particular, OPC observed that expenditures to avoid repeat PPFs under the current regulations may have reached “diminishing returns,” in light of recent distribution system reliability improvements as well as the substantial rate of repeat PPFs.⁴⁰ OPC also argued that the proposed standard would “eliminat[e] costs that would otherwise be required to perform remedial repairs under the existing standard that are not cost-effective.”⁴¹ Staff’s Review similarly supported adoption of the regulations proposed by the Poorest Performing Workgroup in its January 30, 2018 Final Report.⁴² Staff further noted that had the Electric Companies applied the recently filed RM63 revisions to their feeders, only 40 feeders (verses 91) would have been selected as PPFs, and none would have been selected as repeat PPFs.⁴³ Montgomery County asked that the Commission give particular attention to the number of PPFs affecting Special Needs Facilities.⁴⁴ Montgomery County also recommended that the Commission pay particular attention to how a customer experiences an outage. Regarding potential changes to the

³⁷ Potomac Edison Report at 11-19.

³⁸ SMECO Report at 9-11.

³⁹ OPC Comments at 11, referring to RM63: *Revisions to COMAR 20.50.12.03 - Service Supplied by Electric Companies - Service Quality and Reliability Standards - Poorest Performing Feeder Standard.*

⁴⁰ OPC Comments at 11-12.

⁴¹ OPC Comments at 13.

⁴² Staff Review at 73.

⁴³ Staff Review at 33; Tr. at 42.

⁴⁴ Montgomery County Comments at 5.

PPF standard, Montgomery County commented that “to a customer, an outage is an outage. Even if overall system reliability is improving, a customer will not be satisfied if they feel that they experience a seemingly higher number of outages than their neighbors.”⁴⁵

No party challenged the repeat PPF Corrective Action Plans submitted by the Electric Companies as insufficient or excessive. In reviewing the Corrective Action Plans for repeat PPFs, we find them reasonably targeted toward bringing the feeders into compliance with current COMAR requirements.⁴⁶ Accordingly, we accept the Corrective Action Plans submitted by the Electric Companies. Additionally, we commend Choptank for having no repeat PPFs during this reporting year.

C. Multiple Device Activation Standards

COMAR 20.50.12.04 requires each Electric Company to report the number of protective devices that activated five or more times during the applicable reporting period and that caused sustained interruptions in electric service, including during Major Outage Events, to more than ten Maryland customers.⁴⁷ The Electric Companies are required to implement reasonable remediation measures to reduce the number of activations and describe the measures in their annual performance reports. Similar to the repeat PPF standard discussed above, COMAR 20.50.12.04D provides that the protective devices reported under this standard shall not exceed this standard during either of the two

⁴⁵ Montgomery County Comments at 5.

⁴⁶ We do not comment on the RM63 proceeding in this Order, other than to note that the Commission issued a Notice of Proposed Rulemaking on August 6, 2018 to consider whether to finally adopt the proposed revisions to COMAR 20.50.12.03 that were published for notice and comment in the Maryland Register dated August 3, 2018.

⁴⁷ Protective devices include substation breakers and reclosers, line reclosers, line sectionalizing equipment, and line fuses (COMAR 20.50.01.03B(43)).

subsequent 12-month reporting periods after allowing one 12-month reporting period for remediation measures. Any Electric Company that fails to meet the standard is required to file with the Commission a plan setting forth its proposed corrective actions.

In 2017, the Electric Companies reported 37 protective devices that activated five or more times – representing a significant decrease from the 68 multiple device activations that occurred during the 2016 reporting year.⁴⁸ Staff observed that this figure represents the lowest number of multiple device activations since the standard was introduced in 2012. Nevertheless, one Electric Company – BGE – reported a repeat device from 2015. That device activated five times in 2015, resulting in 177 customers being affected. The device also activated six times in 2017, impacting 179 customers. BGE therefore filed a Corrective Action Plan, where it explains that it initiated remediation in 2015 that involved a large selective undergrounding project.⁴⁹ However, the project was delayed due to redesign and reengineering issues. BGE contends that the project is now expected to be completed in the fourth quarter of 2018.

No party opposed BGE’s Corrective Action Plan. However, Montgomery County observed that of BGE’s 20 devices that activated multiple times in 2017, nine serve Special Needs Facilities.⁵⁰ Montgomery County therefore requests that BGE pay particular attention to these devices. The Commission accepts BGE’s Corrective Action Plan regarding the Multiple Device Activation Standard. We also direct BGE, in its remediation plans involving multiple device activations, to pay particular attention to

⁴⁸ Staff Review at 43.

⁴⁹ BGE Report, Attachment I, at 2. The project entailed the installation of approximately 13,000 ft. of #2 underground cable, one switchgear, four reclosers, and installing or renewing approximately 8 poles.

⁵⁰ Montgomery County Comments at 6.

devices that activate that serve Special Needs Facilities.

D. Additional Reliability Indices

In addition to the SAIDI, SAIFI and CAIDI calculations discussed above, COMAR 20.50.12.05 requires that the Electric Companies calculate and report to the Commission two additional reliability indices. Specifically, Electric Companies must report Customers Experiencing Multiple Interruptions (“CEMI_n”) and Momentary Average Interruption Frequency Index (“MAIFI_E”). CEMI_n measures the ratio of customers experiencing multiple sustained interruptions (including customers experiencing three or more, five or more, seven or more, or nine or more interruptions as reported IEEE standards),⁵¹ against the total number of customers served on the system. Similarly, MAIFI_E calculates the ratio of customers experiencing multiple momentary interruptions compared to the total number of customers on the system. COMAR 20.50.12.05(B) and (C) state that if the Electric Company is unable to provide these calculations, it must present to the Commission a reason why, as well as an estimation of the cost to provide the information in the future.

Only BGE, Pepco, and Delmarva provided MAIFI_E numbers. Choptank, Potomac Edison, and SMECO do not at this time have the capability to provide the data and, pursuant to COMAR requirements, have provided explanations as to why they lack this capability as well as the cost estimates to furnish the information in the future.⁵² The

⁵¹ Institute of Electrical and Electronics Engineers.

⁵² These Electric Companies indicate that they will soon have the capability, however, PE states that a plan is in place to calculate and report MAIFI_E for the 2018 Annual Reliability Report. SMECO states that it will be able to calculate MAIFI_E upon completion of its full deployment of AMI. Choptank provides that it has the capability currently, but inadvertently cleared out of its Advanced Metering Infrastructure system 2017 MAIFI_E data before the report could be run. The Commission looks forward to receiving the MAIFI_E data in future reports from these companies.

MAIFI_E data show a decrease in momentary outages in the Pepco and Delmarva service territories. According to Staff, this result demonstrates that the lower SAIFI number experienced by customers as a result of the installation of distribution automation in the service territories has not come at the expense of increased momentary interruptions.⁵³ For BGE, during the 2015 to 2017 timeframe, customers experienced a lower SAIFI with the MAIFI_E figure remaining constant, indicating that with improved SAIFI, customers have not experienced additional momentary outages.⁵⁴

Regarding CEMI_n, the number of Maryland customers experiencing three or more, five or more, seven or more, and nine or more sustained interruptions has been reduced significantly overall from 2013 – the first full year of implementation of the Reliability Standards – to the present.⁵⁵ We commend those Electric Companies that were able to report their CEMI and MAIFI data.

E. Service Interruption Standards

COMAR 20.50.12.06A requires that Electric Companies restore service within eight hours of an outage to at least 92 percent of their customers that experience sustained interruptions during normal conditions. COMAR 20.50.12.06B provides that Electric Companies must restore service within 50 hours to at least 95 percent of their customers experiencing sustained interruptions during Major Outage Events, where the total number of sustained interruptions is less than or equal to 400,000 or 40 percent of the Electric

⁵³ Staff Review at 46.

⁵⁴ Staff commented that increased momentary outages can be a nuisance to customers due to the need to reset appliances such as washing machines and to restart computers, potentially losing data. Staff opined it is important to “not simply substitute momentary outages for sustained outages.” Staff Report at 46.

⁵⁵ Staff Review at 49.

Company's total number of customers, whichever is less.

For 2017, all six Electric Companies met the Service Interruption Standard for normal conditions. SMECO showed the highest percentage restoration rate of customers experiencing sustained interruptions during normal conditions, restoring 99.61 percent of customers.⁵⁶ The lowest restoration rate was 96 percent, which is well above the 92 percent standard. Additionally, all six Electric Companies met the standard for major outage events in 2017, with all companies restoring service to 100 percent of customers within 50 hours after a major outage event. We commend the Electric Companies for meeting the Service Interruption Standards.

F. Downed Wire Response Standard

COMAR 20.50.12.07 requires that each Electric Company respond to a downed electric wire guarded by a government emergency responder within four hours of notification by a fire department, police department, or 911 emergency dispatcher at least 90 percent of the time. All Electric Companies exceeded this standard for the 2016 reporting year. Pepco, Delmarva, Potomac Edison, and Choptank posted perfect scores of 100 percent.⁵⁷ We commend the Electric Companies for meeting this important standard.⁵⁸

⁵⁶ Staff Review at 50.

⁵⁷ Staff Review at 50.

⁵⁸ As discussed during the July 27, 2018 hearing, significant public safety concerns are raised by this standard. Tr. at 130 (Summerson); Tr. at 157 (MacDougall); and Tr. at 203-204 (Ouslander). Given the four-hour response period contained in the current regulations, the Commission is concerned that emergency responders may be idled an unnecessarily long period of time as they wait for utilities to respond to downed wires. Accordingly, the Commission may examine the feasibility of further strengthening COMAR 20.50.12.07.

G. Customer Communications Standards

COMAR 20.50.12.08A requires that each Electric Company answer within 30 seconds, on an annual basis, at least 75 percent of all calls placed to the Electric Company for customer service or outage reporting purposes. All Electric Companies met this standard in 2017. Choptank reported the highest answered-call rate this year at 95.3 percent.⁵⁹

COMAR 20.50.12.08B provides that each Electric Company must achieve an annual average abandoned call percentage rate of five percent or less. In 2017, all Electric Companies met this standard. Delmarva demonstrated the lowest abandoned call rate at 0.19 percent. We commend the companies for their strong performance in 2017 regarding customer communication.

H. Vegetation Management Standards

COMAR 20.50.12.09 addresses vegetation management programs and requires that each Electric Company trim vegetation on a certain percentage of the Electric Company's total distribution miles each year. The regulation requires each Electric Company to develop its own vegetation management program that addresses tree pruning and removal; vegetation management around poles, substations, and energized overhead electric plant; vegetation management along rights-of-way; inspections; and public education regarding vegetation management practices, among other requirements. Pursuant to COMAR 20.50.12.09F, the Electric Companies are required to perform either a four-year or a five-year trim cycle. BGE, Delmarva, Pepco, and SMECO adopted a

⁵⁹ Staff Report at 52, Table 18.

four-year trim cycle, while Choptank and Potomac Edison elected a five-year trim cycle.⁶⁰ Delmarva, BGE, Pepco, and SMECO have begun their second four-year trim cycle, while Potomac Edison and Choptank are completing the fifth year of their first five-year trim cycle.

The Commission commends all of the Electric Companies for exceeding the COMAR requirements for vegetation management for reporting year 2017. Staff notes that the Electric Companies trimmed an aggregate of 7,147 circuit miles in 2017.⁶¹

In addition to providing data related to overhead circuit miles trimmed and miles of vegetation management performed, Staff's Review listed vegetation management expenditures. Staff reported that the Electric Companies spent approximately \$70 million on vegetation management in 2017. Staff further reported that Pepco showed the highest cost per mile at \$18,115 – a cost that is significantly above the next highest cost per mile (BGE, at \$10,818 per mile).⁶² In the Commission's review of last year's reliability performance reports (Order No 88406), the Commission observed that Pepco also reported the highest cost per mile for vegetation management, and stated "It is our expectation that over time, Pepco's vegetation management cost per mile will be brought more in line with the experiences of the other utilities in the State."⁶³

For reporting year 2017, Pepco witness Clark testified that the companies' per

⁶⁰ However, in its 2014 CAP to address certain reliability performance shortfalls, Delmarva completed its four-year trim cycle in three years, allowing the company to complete its first trim cycle in mid-2015. Mail Log No. 159096, Delmarva Corrective Action Plan.

⁶¹ Staff Review at 54.

⁶² Staff Review at 54. Staff witness Austin testified that variation in cost per mile between utilities could be due to factors such as the density of the vegetation, the type of vegetation, the voltage on the power lines, whether the vegetation is located on rural roads or in a densely populated community, and whether the vegetation is located on right-of-way or privately owned land. Tr. at 30.

⁶³ Order No. 88406 at 23.

mile vegetation management costs may be higher than other utilities due to Pepco's densely populated service territory, the tree density in the two counties surrounding the District of Columbia, and the high number of tree removals compared to other utilities.⁶⁴ Mr. Clark also stated that for the last six years, Pepco has been in a reclamation mode, converting from a less-aggressive two-year trim cycle to a four-year cycle. "We've had to reclaim enough growth on each of the rights-of-way in order to be able to maintain that four-year cycle and clear four years of trim."⁶⁵ Given that Pepco has now completed its first four-year trim cycle, Mr. Clark concluded that: "We would expect to see those costs start to drop off as we complete that second cycle."⁶⁶

Although vegetation management is a critical component of maintaining a reliable distribution system, the Commission believes it is also important that vegetation management be cost-effective. While there are clear differences between Electric Company service territories, the Commission would like to see less disparity between Pepco and other companies regarding per mile vegetation management costs, especially now that its reclamation cycle is coming to an end. Additionally, as we stated in Order No. 88406, the Commission's expectation is that the sharing of Exelon best practices regarding vegetation management may help further reduce Pepco's per mile costs.

Each year, the Commission emphasizes that because vegetation management work often impacts customers and their property, the Electric Companies should place priority on communicating effectively with customers and addressing customer concerns

⁶⁴ Tr. at 30, 86-88.

⁶⁵ Tr. at 87.

⁶⁶ Tr. at 88.

as they carry out their vegetation management programs.⁶⁷ This year BGE received a complaint from a property owner that it did not comply with the notification requirements set forth in COMAR 20.50.12.09D (Public Notice of Planned Vegetation Management).⁶⁸ In compliance with COMAR 20.50.12.09C(4), BGE self-reported this violation.⁶⁹ The company stated that a BGE contractor conducted vegetation management work it thought to be on BGE's right-of-way, but later determined not to be, in contravention of COMAR's notification requirements and the company's best practices.⁷⁰ As a consequence, BGE filed a Corrective Action Plan that includes refresher training to educate employees and contractors of regulations, policies, procedures, and best practices associated with the customer notification process and the development of formal written notification procedures that relate to property ownership determination and adjacent property notifications.⁷¹ The Commission accepts this Corrective Action Plan and reemphasizes the importance of communicating effectively with customers and property owners regarding vegetation management work.

⁶⁷ The Vegetation Management Working Group submitted a final report on January 23, 2017 discussing the balance between the public's interest and reliability improvements in regard to vegetation management practices. In Order No. 88406, the Commission authorized the Electric Companies and stakeholders to continue to meet periodically to discuss these important issues and to develop best practices regarding customer communication.

⁶⁸ COMAR 20.50.12.09D(1) provides: "Each utility shall make a reasonable attempt to notify an owner or occupant of all properties upon which cyclical, planned vegetation management is to be performed. This requirement will be satisfied if the utility provides notice to affected property owners or occupants at least 7 days, but not more than 120 days, prior to performing cyclical, planned vegetation management activity. Notice shall be provided by direct mailing, door hanger, postcard, personal contact, or a different method if approved by the Commission, but may not be made solely by bill insert. Nothing in this regulation prohibits a utility from using more than one of these methods."

⁶⁹ See BGE February 8, 2018 correspondence to Commission at Mail Log 218915.

⁷⁰ BGE stated that the contractor did not follow BGE Best Management Practices by contacting adjacent property owners when conducting work in close proximity to property boundaries.

⁷¹ BGE Report, Attachment H, Public Notice of Planned Vegetation Management Corrective Action Plan.

I. Periodic Equipment Inspections

COMAR 20.50.12.10A requires that each utility adopt and follow written operation and maintenance (“O&M”) procedures for its electric plant in order to maintain safe and reliable service. In accordance with those requirements, each Electric Company filed O&M plans with the Commission in August 2012, detailing their procedures for the inspection and maintenance of wood poles, overhead circuits and equipment, pad-mounted transformers and underground equipment, line capacitors and substations. In the present proceeding, five Electric Companies demonstrated that they completed their inspection and maintenance activities, in compliance with their filed plans, and therefore met the Periodic Equipment Inspections standard. However, Choptank did not.

On November 29, 2017, Engineering Staff conducted its annual records inspection of Choptank’s O&M programs and discovered that the company did not comply with all of its required periodic equipment inspections.⁷² Specifically, the company’s Overhead Distribution Feeders program inspection for one circuit was not completed as scheduled. Additionally, the company could not produce records showing the completion of tasks associated with this program for any previous year or for any other circuit as far back as 2012.

In response, Choptank filed a Corrective Action Plan with the Commission, indicating that it purchased and configured new cloud-based maintenance software that allows for field inspections to be done on any tablet, computer, or data capable cell phone. Choptank asserts that the software flags inspections that are not completed on time to a supervisor and schedules inspections on a preset schedule. Choptank further

⁷² Staff Review at 56.

states that all monthly equipment inspections have been transferred to the new system and that work is currently underway on the Overhead Feeder Inspection program.

In addition to the inspection issues, Staff's audit of Choptank's O&M Program revealed that Choptank was in violation of COMAR 20.50.07.03A(2), which requires that each Electric Company have at least two working standard indicating voltmeters. Choptank had only one. To resolve this problem, Choptank purchased a second voltmeter calibrated to meet COMAR standards, which Staff verified on its July 17, 2018 site visit to Choptank's Denton, Maryland offices.⁷³

RM43 created the Periodic Equipment Inspection standard because equipment failure is a leading cause of outages.⁷⁴ Failure to meet scheduled equipment inspections can therefore pose a risk to reliability. Additionally, equipment failure can pose significant risks to the health of the public and to Electric Company personnel. The Commission therefore takes seriously violations of the Periodic Equipment Inspection standard. However, we accept Choptank's Corrective Action Plan. We also commend the other Electric Companies for their compliance with this standard.

IT IS, THEREFORE, this 4th day of September, in the year Two Thousand Eighteen,

ORDERED: (1) That the service quality and reliability annual reports of BGE, Pepco, Delmarva, Potomac Edison, Choptank, and SMECO are accepted;

(2) That the Corrective Action Plans of BGE, Pepco, Delmarva,

⁷³ Tr. at 33.

⁷⁴ Tr. at 31, (Staff, Austin).

Potomac Edison, Choptank, and SMECO are hereby noted; and

(3) That SMECO shall file an interim assessment of the effectiveness of its remediation plan regarding SAIDI and SAIFI by October 31, 2018, including updated 2018 SAIFI and SAIDI data through the third quarter of 2018, and make a presentation of the results at the Commission's November 20, 2018 Administrative Meeting.

Jason M. Stanek _____

Michael T. Richard _____

Anthony J. O'Donnell _____

Odogwu Obi Linton _____

Mindy L. Herman _____

Commissioners