ML 198649

ORDER NO. 87754

IN THE MATTER OF THE REVIEW OF ANNUAL PERFORMANCE REPORTS ON ELECTRIC SERVICE RELIABILITY FILED PURSUANT TO COMAR 20.50.12.11	* * * * * * * *	BEFORE THE PUBLIC SERVICE COMMISSION OF MARYLAND CASE NO. 9353

Issue Date: September 7, 2016

Pursuant to the Maryland Electricity Service Quality and Reliability Act[1] and the regulations promulgated by the Commission in 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 BGE, Pepco, Potomac Edison, SMECO, and Delmarva, as 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.[3] The 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 2015 reporting year, addressed herein, represents the third full year since these reliability standards were established.

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.[4]

On or about April 1, 2016, the Electric Companies filed their respective annual reports with the Commission covering the period from January 1, 2015 through December 31, 2015.[5] On June 16, 2016, the Commission issued a Notice establishing this proceeding, setting a date for hearing, and providing an opportunity for parties to file

[2] *See* Section 7-213(b) of the Public Utilities Article ("PUA") of the Maryland Code.
[3] *See* Rulemaking 43, *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] 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.
[5] The data provided by the Electric Companies in their reports cover the reporting period from January 1, 2015 through December 31, 2015, 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, 2015.

written comments on the annual reliability reports. On August 2, 2016, the Maryland Office of People's Counsel ("OPC") and Montgomery County, Maryland filed their respective comments with the Commission. Also on August 2, 2016, Commission Staff filed its Engineering Division Review of Annual Performance Reports on Electric Service Reliability ("Staff Review").

On August 9, 2016, 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 the System Average Interruption Frequency Index ("SAIFI")[6] and the System Average Interruption Duration Index ("SAIDI").[7] For 2015, all Electric Companies with the exception of SMECO met their COMAR required SAIDI and SAIFI requirements.[8] Staff noted that most of the Electric Companies are well positioned to meet system-wide reliability goals for future years, observing that

[6] 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.

[7] 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.

[8] Staff Review at 16.

BGE, Choptank, and Potomac Edison are already performing at reliability levels that will meet their elevated 2019 reliability metrics.[9]

Staff conducted several trend analyses for the reporting year. Staff reported a "clear four year trend of improving SAIDI and SAIFI regardless of weather," observing overall improvements of 26% and 12% for SAIDI and SAIFI, respectively.[10] Staff additionally highlighted an important milestone – that the composite SAIDI for the Electric Companies dropped below two interruption minutes for the first time in 2015.[11] Staff performed a three-year average analysis on system-wide reliability, and found that four Electric Companies (BGE, Delmarva, Potomac Edison, and Pepco) performed better than their three-year average SAIFI. Those same four Electric Companies also performed better than their respective three-year average SAIDI.[12] Staff additionally performed a rolling two-year trend analysis, finding that all Electric Companies with the exception of SMECO demonstrated continued improvement in reliability as measured by SAIFI, and that BGE, Delmarva, Potomac Edison, and Pepco showed continued improvement in reliability regarding SAIDI.[13]

Staff also assessed the Electric Companies' reliability utilizing other metrics, including Customer Average Interruption Duration Index ("CAIDI")[14] and Customers Experiencing Multiple Interruptions ("$CEMI_n$").[15] Regarding CAIDI, Staff found that

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[9] *Id*. at 12.
[10] Staff Review at 12.
[11] *Id*.
[12] *Id*. at 17.
[13] *Id*. at 18-19.
[14] CAIDI measures the average time required to restore service to customers per interruption. It is calculated by dividing SAIDI by SAIFI.
[15] $CEMI_n$ 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), against the total number of customers served on the system.

BGE, Delmarva, and Potomac Edison performed at or better than their thee-year average CAIDI and that those same Electric Companies plus Pepco showed continued improvement in reliability as measured by Staff's two-year trending analysis.[16] Staff further noted that average CEMI for the state of Maryland has been "steadily improving since the promulgation of RM43."[17] In fact, $CEMI_6$ and $CEMI_8$ showed more than a 70 percent improvement over their 2012 levels.

Although SMECO only narrowly missed achieving its SAIFI standard (reporting 1.37 interruptions per customer in lieu of the required COMAR standard of 1.36 or less), the Company significantly exceeded the number of interruption minutes per customer allowed under its SAIDI standard. Specifically, SMECO reported 218.4 interruption minutes, compared to the COMAR-required 139.2 interruption minutes or less.[18]

SMECO reported, however, that the weather-related events that affected its service territory in 2015 significantly altered the Company's SAIDI and SAIFI performance. In particular, SMECO explained that it was impacted by six events that constituted IEEE Major Event Days in 2015 (a snowstorm, three thunderstorms, a substation outage, and a station/transmission outage).[19] As evidence of the disruptive impact of the storms, the Company noted that it experienced 8,610 lightning strikes in June 2015, compared to just 4,360 for all of 2013 and 2014 combined.[20] SMECO observed that if IEEE Major Event Day interruption data were excluded from its 2015 system-wide reliability calculations, it would have met COMAR metrics for SAIDI and

[16] Staff Review at 17 and 19.
[17] Staff Review at 25.
[18] *Id*. at 16.
[19] IEEE stands for Institute of Electrical and Electronics Engineers.
[20] SMECO Report at 22.

SAIFI.[21] However, none of the IEEE events constituted excludable Major Outage Events under COMAR, causing the Company's SAIFI and SAIDI numbers to rise significantly.[22]

SMECO submitted to the Commission a Corrective Action Plan to improve the reliability of its service territory. The Company proposed to continue and to strengthen its line and station inspections, preventive and responsive system maintenance, and short-term and long-term system planning.[23] The Electric Company also highlighted its programs to (i) visually inspect its entire distribution system bi-annually and conduct quarterly aerial inspections of all 69 kV and 230 kV transmission lines; (ii) conduct systematic wood pole inspection, treatment, and replacement; (iii) perform aggressive distribution right-of-way maintenance on a four-year cycle and right-of-way widening as appropriate; (iv) conduct annual substation transformer and voltage regulator oil testing and analysis; (v) perform testing and maintenance of substation reclosers, circuit breakers, associated relays, and line reclosers; (vi) annually inspect substations, switching stations, and major distribution lines with an infrared scanner; and (vii) continue use and enhancement of its Outage Management System.[24] SMECO also stated that it will investigate expanding its preventative maintenance practices and proactively look for opportunities to improve area reliability performance.

[21] *Id*. at 1.
[22] SMECO noted that its fast restoration of service to its electric distribution customers during these IEEE events helped ensure that the events were not considered Major Outage Events under COMAR. Aug. 9, 2016 Hrg. Trans. at 19. A COMAR Major Outage Event is defined in part as an event where restoration of electric service to affected customers "takes more than 24 hours." COMAR 20.50.01.03B(27).
[23] SMECO Report at 32.
[24] *Id*. at 3.

Staff confirmed that SMECO suffered from several severe weather events in 2015, and noted that the Company is currently meeting its reliability goals for 2016.[25] OPC observed that prior to 2015, SMECO "had historically achieved above-average SAIDI and SAIFI performance," and that the sudden decline in reliability performance in 2015 "could be more of a reflection of a series of serious weather conditions rather than an indication of degrading system resiliency."[26] Still, OPC commented that the Commission should direct SMECO to file a progress report in the fall of this year covering the period through the summer of 2016 to provide interim information concerning SMECO's 2016 reliability performance.

We commend BGE, Delmarva, Potomac Edison, Pepco, and Choptank for meeting the system-wide reliability standards and note the Corrective Action Plan filed by SMECO. We direct SMECO to file by October 31, 2016 an interim assessment of the effectiveness of its plan, including updated 2016 SAIFI and SAIDI data through the third quarter of 2016.

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 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

[25] Staff Review at 33.
[26] OPC Comments at 7.

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.[27] In other words, the standard prohibits any feeders identified as poorest performing feeders ("PPFs") in 2012 or 2013, after receiving remedial actions, from being reported as repeat PPFs in 2015.

The Electric Companies collectively identified 91 feeders out of the 2,873 existing in Maryland at the time of filing the annual reports as PPFs. Those PPFs exhibited a SAIFI that is over three times higher than the overall system average for all feeders in Maryland and a SAIDI that is slightly less than four times higher than the overall average for all feeders in the State.[28] As required by COMAR, the Electric Companies proposed a variety of measures to improve the reliability of their PPFs. Five Electric Companies reported a total of 18 feeders as *repeat* PPFs for 2015. Specifically, BGE reported seven repeat PPFs, Pepco reported two, and Delmarva, Potomac Edison, and SMECO each reported three. Only Choptank reported no repeat PPFs.

Several of the Electric Companies noted that the average SAIDI and SAIFI scores for their respective repeat PPFs have improved significantly as a result of past remediation efforts.[29] Nevertheless, each of the Companies that did not meet the standard filed a Corrective Action Plan to address repeat PPFs. Generally, the Corrective Action Plans included an analysis of key outage causes and trends, an evaluation of the effectiveness of past reliability programs, and proposals for new initiatives to address

[27] COMAR 20.50.12.03A(5).
[28] Staff Review at 21.
[29] *See*, for example, BGE Annual Report, Attachment B at 3.

remaining reliability problems. The Electric Companies tailored their proposed remediation to each individual repeat PPF. Specific proposed work includes corrective maintenance and trimming, installation of new animal guards and lightning arrestors, enhanced vegetation management, investment in new underground feeder cables, creation of new underground loop segments, replacement of overhead lines, installation of new overhead distribution automation,[30] hardening of substation supply lines, replacement of aging equipment, and installation of sectionalizing devices and fault indicators.

Staff testified that despite the significant effort to target repeat PPFs through remediation, it did not see "a significant change in performance" between repeat PPFs and PPFs.[31] During the hearing, Staff questioned whether there may be situations where it is not cost effective to further remediate repeat PPFs. Similarly, OPC stated that the significant reliability improvements over the last four years have come at a cost, and that the Electricity Service Quality and Reliability Act does not contemplate further investment on an "unlimited basis," but rather envisions that reliability investment "would be constrained by cost effectiveness."[32] Accordingly, Staff and OPC recommended that the Commission establish a workgroup to examine PPF identification and remediation processes, including whether a cost/benefit analysis could be devised to determine when further spending on repeat PPFs is appropriate.[33] Staff also recommended that the workgroup address how other state commissions address PPFs and repeat PPFs.[34]

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[30] Pepco, for example, is installing 200 Automatic Circuit Reclosers in 2016. Pepco Annual Report at 8.
[31] Hearing Transcript at 50.
[32] *Id*. at 120-121.
[33] *Id*. at 51-51, 120-121.
[34] Staff Review at 43-44, Hearing Transcript at 50.

We applaud Choptank for meeting the Commission's standard regarding repeat PPFs and accept the Corrective Action Plans of the other Electric Companies. We accept the recommendation to establish a workgroup led by Staff that will include all six of the Electric Companies and will be open to all other interested parties, including OPC and Montgomery County. The workgroup will examine those issues outlined by Staff and discussed during the hearing related to PPFs and repeat PPFs. Staff is directed to file a report summarizing the workgroup discussions and any related recommendations no later than December 30, 2016.

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.[35] 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 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.

[35] Protective devices include substation breakers and reclosures, line reclosures, line sectionalizing equipment, and line fuses (COMAR 20.50.01.03B(43)).

In 2015, the Electric Companies reported just 41 protective devices that activated five or more times. Staff observed that this figure represents a substantial decrease of 60 percent compared to 2014 and an improvement of approximately 75 percent when compared to 2012.[36] Moreover, no Electric Company reported any repeat multiple activation devices in 2015. We therefore commend the Electric Companies for meeting the Multiple Device Activation Standards.

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

All six Electric Companies met the Service Interruption Standard for normal conditions. Because there were no Major Outage Events in 2015, the second standard referenced above was not applicable. Nevertheless, Staff observed that Potomac Edison significantly improved its 2014 underperformance by implementing an Outage Priority Matrix to ensure compliance with COMAR's requirements. We commend the Electric Companies for meeting the Service Interruption Standards.

E. Downed Wire Response Standard

[36] Staff Review at 24.

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 2015 reporting year. Pepco, SMECO, Choptank, and Delmarva posted perfect scores of 100 percent. We commend the Electric Companies for meeting this important standard.

F. 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 with the exception of Pepco met this standard. However, all Electric Companies, including Pepco, evidenced a decline in the percentage of calls answered within 30 seconds, when compared to reporting year 2014. Pepco answered within 30 seconds only 73.9 percent of customer service or outage calls.[37]

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 2015, all Electric Companies with the exception of Pepco met this standard. Nevertheless, all Electric Companies demonstrated an increasing abandoned call rate, when measured against reporting year 2014. Pepco's abandoned call rate for 2015 was 8.26 percent, a significant increase from its 4.55 percent in 2014, which itself was higher than Pepco's 2013 abandoned call rate of 4.31 percent.[38]

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[37] Staff Review at 28.
[38] *Id*.

Pepco noted that it implemented a new Customer Relationship Management and Billing System in 2015 to replace its 30-year old legacy systems. Since then, the Company has worked with customer service representatives and other end-users to help them gain proficiency with the new system. Pepco also submitted a Corrective Action Plan to address its deficiencies under the COMAR Customer Communication Standards. The Plan is designed to improve the Company's customer communication performance by: (i) providing additional training and coaching to improve customer service representative proficiency; (ii) working with technical teams to make prudent enhancements or modifications to the system or screens that will improve the call centers' transaction efficiency; (iii) analyzing work flows and focusing on process improvements; and (iv) taking aggressive steps to backfill for the attrition of customer service representatives.[39]

OPC expressed concern with the decline in the Electric Companies' performance under the Customer Communication Standards, noting that customer communication "is an essential component of both the Maryland Electricity Service Quality and Reliability Act and the RM 43 standards."[40] OPC asked that the Commission require Pepco to file an interim report in the fall to evaluate whether the Company is making the necessary improvements in its system. Montgomery County also expressed concern over the deterioration of the Electric Companies' performance regarding customer communication. Accordingly, Montgomery County asked that the Commission require all of the Electric Companies in its County (Pepco, Potomac Edison, and BGE) to file

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[39] Pepco Annual Report at 114.
[40] OPC Comments at 18.

corrective action plans, irrespective of whether they met the 2015 standards.[41] Staff stated that beginning in the fourth quarter of 2015, Pepco has shown improvement with both Customer Communication Standards. Additionally, Staff testified that given the available data to date, Pepco is "trending toward meeting the requirements" for customer communication in 2016.[42]

We agree with OPC that customer communication is an essential element of the Reliability Act and our regulations and we find the downward trend of all of the Electric Companies as measured by the Customer Communication Standards troubling. Last year, the Commission noted that some of the Electric Companies reported declining performance in customer communication, and we directed them "to take action to reverse that trend."[43] Unfortunately, this year, the declining performance has continued and Pepco has failed both of the applicable standards. We therefore direct all of the Electric Companies to redouble their efforts to improve customer communication, including through answering calls promptly, addressing customer concerns directly and efficiently, and avoiding abandoned calls. Given that future years will likely involve Major Outage Events, unlike 2015, it is imperative that the Electric Companies adhere to the requirements of the Customer Communication Standards. Finally, we note Pepco's Corrective Action Plan and direct the Company to file by October 31, 2016, an interim assessment of the effectiveness of its Plan.

[41] Montgomery County Comments at 8.
[42] Hearing Transcript at 30.
[43] Order No. 87257 at 21.

G. 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.

All of the Electric Companies exceeded the COMAR requirements for vegetation management for reporting year 2015. Staff noted that the Electric Companies trimmed an impressive aggregate of 7,587 circuit miles in 2015.[44] We commend the Electric Companies for their diligent work with regard to vegetation management, which represents an important tool available to Electric Companies to reduce the number of tree-related power interruptions. As we have stated in previous Orders, because vegetation management work may impact customers, the Companies should continue to place priority on communicating effectively with customers and addressing customer concerns as they carry out their vegetation management programs.

IT IS, THEREFORE, this 6th day of September, in the year Two Thousand Sixteen,

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

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[44] Staff Review at 30.

(2) That the Corrective Action Plans of BGE, Pepco, Delmarva, Potomac Edison, and SMECO are hereby noted;

(3) That SMECO will file by October 31, 2016 an interim assessment of the effectiveness of its Corrective Action Plan regarding System-Wide Reliability Standards, including updated 2016 SAIFI and SAIDI data through the third quarter of 2016;

(4) That Pepco will file by October 31, 2016, an interim assessment of the effectiveness of its Corrective Action Plan related to Customer Communication Standards; and

(5) That Staff will lead a workgroup to include all six of the Electric Companies, and which will be open to all other interested parties, including OPC and Montgomery County, that will examine issues related to poorest performing feeders and repeat poorest performing feeders, and that Staff shall file a report summarizing the workgroup discussions and any related recommendations no later than December 30, 2016.

W, Kevin Hughes

Harold D. Williams

Jeannette M. Mills

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