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Sandra Mattavous-Frye, Esq.
People's Counsel

June 29, 2020

Brinda Westbrook-Sedgwick
Commission Secretary
Public Service Commission
of the District of Columbia
1325 G Street, N.W., Suite 800
Washington, D.C. 20005

Re: PEPACR-2020-01, In the Matter of the Annual Consolidated Report of Potomac Electric Power Company

Formal Case No. 1119, In the Matter of the Joint Application of Exelon Corporation, Pepco Holdings, Inc., Potomac Electric Power Company, Exelon Energy Delivery Company, LLC, and New Special Purpose Entity, LLC for Authorization and Approval of Proposed Merger Transaction

Dear Ms. Brinda Westbrook-Sedgwick:

Enclosed for filing in the above-referenced proceeding, please find the *Office of the People's Counsel for the District of Columbia's Initial Comments Regarding Pepco's 2020 Consolidated Report.*

If there are any questions regarding this matter, please contact me at 202.727.3071.

Sincerely,

/s/ Timothy Oberleiton

Timothy Oberleiton
Assistant People's Counsel

Enclosure

cc: Parties of record

Privileged and Confidential Draft

BEFORE THE
PUBLIC SERVICE COMMISSION
OF THE DISTRICT OF COLUMBIA

In the Matter of	**)**	**PEPACR-2020-01**
The Annual Consolidated Report of	**)**	**and**
Potomac Electric Power Company	**)**	**Formal Case No. 1119**

INITIAL COMMENTS OF THE OFFICE OF THE PEOPLE'S COUNSEL FOR THE DISTRICT OF COLUMBIA REGARDING PEPCO'S 2020 ANNUAL CONSOLIDATED REPORT

I. INTRODUCTION

Pursuant to section 513.8 of the Public Service Commission of the District of Columbia's ("PSC" or "Commission") Fuel Adjustment Clause Audit and Review Program,[1] the Office of the People's Counsel for the District of Columbia ("OPC" or "Office"), the statutory representative of District of Columbia utility consumers and ratepayers,[2] respectfully submits the *Initial Comments of the Office of the People's Counsel for the District of Columbia Regarding Pepco's 2020 Consolidated Report*, wherein the Office provides its assessment of the Potomac Electric Power Company's ("Pepco" or the "Company") 2020 Consolidated Report ("2020 ACR").[3]

II. BACKGROUND

The Office incorporates by reference the Background section of its *Initial Comments of the Office of the People's Counsel for the District of Columbia Regarding Pepco's 2019 Consolidated Report*,[4] with the following additions:

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[1] 15 D.C.M.R. § 513.8 (Lexis 2020).

[2] D.C. Code § 34-804 (Lexis 2020).

[3] *PEPACR2020-01, In the Matter of the Annual Consolidated Report of Potomac Electric Power Company* ("*PEPACR2020-01"*), Pepco's 2020 Consolidated Report, filed April 1, 2020 ("2020 ACR").

[4] *PEPACR2019-01, In the Matter of the Annual Consolidated Report of Potomac Electric Power Company* ("*PEPACR2019-01*"), Initial Comments of the Office of the People's Counsel for the District of Columbia Regarding Pepco 's 2019 Consolidated Report, pp. 2-6, filed June 18, 2019 ("OPC's 2019 PEPACR

On April 1, 2019, Pepco filed its 2019 ACR. The Company subsequently supplemented that filing on April 30, 2019.[5] The purpose of Pepco's Supplement was to update Table 3.6 in its 2019 ACR (listing cable failures and cable splice failures that occurred during the reporting period) and provide a Quality Control valuation of its 4th Quarter 2018 Manhole Inspections.

On June 18, 2019, OPC filed *Initial Comments* addressing Pepco's 2019 ACR.[6] Therein, the Office set forth its observations and numerous recommendations regarding the Company's 2019 ACR. On July 1, 2019, Pepco filed its Repeat Priority Feeder Improvement Plan.[7] This submission was made pursuant to the Commission's directives in Order Nos. 15941.[8] On July 16, 2019, Pepco filed *Reply Comments* in response to OPC's *Initial Comments*.[9] On March 13, 2020, pursuant to Order No. 20308, the Commission accepted Pepco's 2019 ACR as being in substantial compliance with applicable Commission rules and Orders.[10]

On January 29, 2020, Pepco filed a *Motion to Extend Date for Filing of Annual Consolidated Report* to file the Company's 2020 ACR.[11] In it, the Company requested a revised submission date of April 1, 2020.[12] The Company filed its Consolidated Report on April 1, 2020.[13] Pepco

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Comments").

[5] *PEPACR2019-01*, Potomac Electric Power Company's 2019 Annual Consolidated Report Supplement, filed April 30, 2019 ("PEPACR2019 Supplement").

[6] *PEPACR2019-01*, Initial Comments of the Office of the People's Counsel for the District of Columbia Regarding Pepco's 2019 Annual Consolidated Report, filed June 18, 2019.

[7] *PEPACR2019-01*, Pepco's 2019 Repeat Priority Feeder Improvement Plan, filed July 1, 2019.

[8] *Formal Case Nos. 766 & 991*, Order No. 15941, ¶¶ 13 & 17, rel. August 18, 2010.

[9] *PEPACR2019-01*, Pepco's Reply Comments to the Comments filed by the Office of the People's Counsel for the District of Columbia on June 18, 2019, filed July 16, 2019.

[10] *PEPACR2019-01*, Order No. 20308, ¶ 15.

[11] *PEPACR2020-01,* Pepco's Motion to Extend Filing of Annual Consolidated Report, filed January 29, 2020.

[12] *Id.*, p. 1.

[13] *PEPACR2020-01*, 2020 ACR, filed April 1, 2020.

made a corrective filing on April 20, 2020 in which it corrected Section 2.4.1 Reliability Statistics pages 161 to 169.[14]

On April 15, 2020 OPC filed an *Unopposed Motion for an Enlargement of Time* to file its *Initial Comments* regarding Pepco's 2020 ACR.[15] In its *Motion*, the Office requested that the Commission extend the submission date for initial comments from May 18, 2020 to June 29, 2020. In light of this requested enlargement, OPC also asked the Commission to extend the filing date for reply comments to August 7, 2020.[16]

OPC's request for an extension of time to comment was granted on April 22, 2020 by Order No. 20335.[17] Through that Order, the Commission extended the comment deadline from May 18, 2020 to June 29, 2020.[18]

The following are OPC's *Initial Comments* on Pepco's 2020 Consolidated Report.

III. SUMMARY OF RECOMMENDATIONS AND PRIMARY OBSERVATIONS

A. OPC recommends Pepco report at Productivity Improvement Working Group ("PIWG") meetings its efforts to maintain an efficient power factor for the system.

B. OPC recommends that Pepco update the Zonal Load data as appropriate and explain if the long-range load forecast has been affected.

C. OPC believes the Downtown Resupply Project ("DRP") comprehensive plan should address the project milestones and the completion dates for each. Further, the projected budgets should be compared to actual expenditures to clearly show if the project or portions of the project are exceeding the plan budget.

[14] *PEPACR2020-01*, Pepco's Corrective Filing for pp. 161 – 169 of the 2020 ACR, filed April 20, 2020.

[15] *PEPACR2020-1*, Office of the People's Counsel for the District of Columbia's Unopposed Motion for Enlargement of Time to Submit Comments Regarding Pepo's 2020 Annual Consolidated Report, filed April 15, 2020.

[16] *Id.*, p. 1.

[17] *PEPACR2020-01*, Order No. 20335, rel. April 22, 2020 ("Order No. 20335").

[18] *PEPACR2020-01*, Order No. 20335, ¶¶ 4 and 5.

D. Regarding substation additions and enhancements, capacity increases should be presented to stakeholders for clarity and understanding of how the system is expanding in terms of capacity at a time when electric demand in the District is trending down.

E. OPC suggests that Pepco review the Harrison Substation 38 project at a PIWG meeting so stakeholders can understand the causes of the 28% budget overruns.

F. OPC suggests Pepco present information to the PIWG regarding the status and budget of the Mount Vernon Substation.

G. OPC suggests Pepco provide a separate budget for the improvements at Tacoma or provide greater detail in the explanation of the scope of work associated with the Champlain Substation.

H. Due to the slow nature of the 4kV conversion, OPC is concerned regarding the timing of the final conversion at Harvard and would seek assurances from Pepco regarding the timely and seamless completion of this project. OPC also suggests Pepco present information to the PIWG regarding the status and budget of the Harvard Substation

I. OPC recommends that Equipment Condition Assessment ("ECA") Team data provided in the ACR include reasoning and justification for future capital expenditures.

J. OPC has noticed that construction schedules for the 4kV-to-13kV conversion projects are not meeting budgets. OPC suggests that Pepco make a presentation to the PIWG addressing the non-constructability of the previous plans, the proposed new plans, and the stranded investment which may not be usable in the new plans. Pepco should be directed to provide greater clarity regarding changes in the 4kV-to-13kV conversion work at the Harvard Substation and provide the new completion date for this conversion. Further, the conversion work on the "G" Street Substation has increased more than $10,000,000 for the next five years. Pepco should provide more project details and scheduling information at a PIWG meeting in 2020.

K. OPC believes and recommends repeat priority feeders should not be excluded from the selection process for priority feeders in the following year.

L. OPC recommends that Pepco correct the errors in the reliability metrics which appear on 15 out of 16 of the tables for the worst reliable feeders.

M. OPC recommends that Pepco provide a project schedule for the conversion of Feeder 211. The need for this information is to confirm that these customers will obtain relief by the end of 2020.

N. OPC requests Pepco provide a review of the Underground Residential Distribution ("URD") Replacement Program, including budgeted amounts and actual spending for the last five years.

O. Regarding Feeder 15867, OPC recommends Pepco describe why the aggressive measures for 13kV feeders would not be appropriate for this feeder.

P. OPC requests that Pepco explain which WSB will be used to replace the Pre-Assembled Aerial Cable ("PAC") and provide a schedule for the replacement of the cable on Feeder 14261. Specifically, the Office asks that the Company be directed to confirm the PAC cable will be replaced in 2020 so these customers can obtain some relief on the outages they have been experiencing.

Q. OPC requests that Pepco provide a construction schedule for the new feeder planned to relieve load on Feeder 15094. The need for this information is to confirm that these customers will obtain relief by the end of 2020.

R. OPC recommends that Pepco consider how loop-feed construction can improve the reliability of Feeder 16002.

S. OPC recommends that Pepco consider how loop-feed construction can improve the reliability of Feeder 16003. Alternatively, it may be necessary to separate the routing of Feeders 16002 and 16003 if these two circuits provide backup service for each other. Separate routing of interdependent cable is common for N-1 design consideration.

T. OPC analysis shows that the overall reliability and improvement in system reliability when compared to 2010 data is excellent and commends Pepco on these efforts.

U. OPC recommends that a graphic depiction (heat map) of neighborhood reliability be included in the annual consolidated report.

V. It is suggested that Pepco provide a report to the PIWG describing why a tree-related outage on August 20, 2019 extended more than 24 hours.

W. OPC suggests that Pepco report on upgrade plans to circuits 16000 and 16001 that service neighborhoods north of the new soccer stadium.

X. OPC suggests that using the excess Vegetation Management ("VM") budget to provide greater funding for hazardous tree removal could provide positive benefits for system reliability and resiliency. OPC further recommends that Pepco provide a greater explanation for the under-spending and the proposed reduced VM budgets as needed. Order Nos. 19119 and 19214, which both address performance based VM, do not indicate if the performance measurement should include or exclude trees and limbs outside the right-of-way. OPC suggests that the performance measurement should include trees outside the right of way, especially since hazard tree removal is an important part of the VM program. OPC suggests that if the VM program has become more efficient in meeting the performance goal, it may be advantageous to direct excess VM funds to identify and eliminate more hazardous tree conditions.

Y. OPC recommends Pepco track power transformer outages separate from overhead transformer outages.

Z. Pepco should be directed to provide an analysis regarding the near doubling of overhead transformer failures from 2017 to 2019.

AA. The outage at the Florida Substation was attributed to a failure of the Load Tap Changers ("LTC"). Pepco should be directed to summarize the current plans and efforts to reduce failure of LTCs in power transformers. Specifically, Pepco should report the status of the repair efforts and the projected schedule for completing these repairs.

BB. Cable failures are the number-one cause of equipment outages. However, the data is not separated by type of cable (URD, Paper Insulated Lead Cable ("PILC"), PAC, etc). OPC recommends that Pepco provide information on efforts to reduce cable failures by type of cable.

CC. OPC recommends the Commission direct Pepco to provide an analysis of the PILC transition joint failures and the cost of expanding the PILC cable replacement program to reduce the number of such joints. OPC recommends the Commission direct Pepco to explain the discrepancy in the amounts of PILC cable replaced and describe what financial impacts this correction may have.

DD. Pepco now has over 5-years experience with the pre-molded secondary joints. OPC requests that Pepco provide feedback on the performance of these joints, especially relative to the reportable outage events. OPC recommends that Pepco present data, trends related to secondary failures separated by type of cable failures and joint failures.

IV. COMMENTS

A. System Power Factor

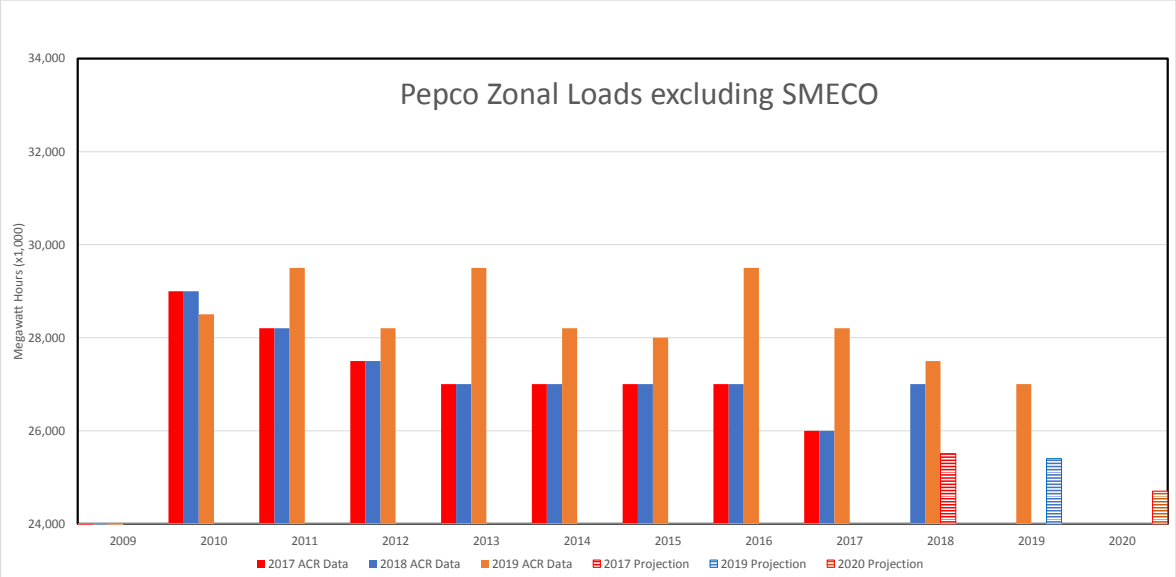
The system power factor is one measure of how efficiently Pepco's electric system is being operated. The power factor is the ratio between kilowatts (kW) and apparent power (kVA). The driving force for power factor is the reactive power (kvar) which is created by the customers' end-use electrical devices and can also be influenced by the reactive nature of underground medium voltage power cables. A unity power factor would be ideal but not practical. Pepco plans for a 0.98 (98%) power factor.[19] There has been a steady decline in the number of substations with power factors greater than 0.98. The number of substations with a power factor less than 0.98 increased from 3 substations to 4 substations from 2013 to 2017 and further increased to 9 substations in 2018. Currently, 13 substations in 2019 exhibited power factors less than 0.98. This decline in power-factor efficiency is very disturbing considering the investments in automation

[19] *PEPACR 2020-01*, 2020 ACR, p. 26.

and remote control of capacitors on the distribution systems. OPC recommends Pepco report at PIWG meetings its efforts to maintain an efficient power factor for the system.

B. Pepco Zonal Loads

Pepco provides zonal loads for its control area loads, excluding the Southern Maryland Electric Cooperative ("SMECO"), based on a 10-year history.[20] This data is used to project energy sales.[21] In comparing the 10-year history from the 2018 ACR to the 2019 ACR, it is obvious that some change has been made to the data presented in the 2020 ACR. The graph below compares the history as presented in three different consolidated reports. OPC recommends that Pepco update this data as appropriate and explain the cause of the error and if that error has affected the long-range load forecast.



C. Downtown Resupply Project

The Commission directed Pepco to provide updated and comprehensive plans for the DRP in the Annual Consolidated Reports(s), including updated costs with an explanation of significant

[20] *PEPACR 2020-01*, 2020 ACR Table 1.2-C. p. 25.

[21] *PEPACR 2020-01*, 2020 ACR Table 1.2-D Pepco Zonal Load, p. 25.

changes and updated construction schedules.[22] Pepco filed a draft format of the annual project report with the Commission on February 4, 2020. The Commission concluded that the draft report meets the requirements listed in Attachment A of Order No. 20203.[23] Pepco provided a one-and-a-half-page summary, which, while strictly meeting the requirements of Order No. 20203, contains few details regarding the $500 million project.

The scope of the project for the DRP is not well-defined, causing confusion as to exactly what projects are included in the DRP. Pepco's draft report describes the DRP as follows:

> The Downtown Resupply project will replace aging 34 kV and 69 kV supply feeders to the L Street, F Street, Georgetown, and 22nd Street Substations. This work along with upgrades to the F Street Substation and extension of new 13 kV feeders will accommodate load transfers from I Street Substation as well as increasing sub-transmission supply capacity and providing reliability benefits to the District of Columbia.

PEPACR 2020-01, 2020 ACR Attachment F. Pepco's justification for Project UDSPLM717A "F" Street Sub Rebuild[24] and UDLPRM5SG Repl 69kV SCFF Supl-Georgetown, "F" Street, 22nd St[25] suggests that the Downtown Resupply includes replacement of 69kV underground supply feeders from Takoma Substation to the 22nd Street Substation. The justification for the proposed projects includes resupply of all three substations (Georgetown, "F" Street, and 22nd Street) from a single set of higher capacity solid dielectric cables from the Champlain Substation. In the 2020 ACR, Pepco states the Champlain Substation "will be used to re-supply existing L Street, F Street, and

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[22] *Formal Case No. 1144, In the Matter of the Application of the Potomac Electric Power Company's Notice to Construct Two 230kV Underground Circuits from the Takoma Substation to the Rebuilt Harvard Substation and from the Rebuilt Harvard Substation to the Rebuilt Champlain Substation (Capital Grid Project)("Formal Case No. 1144 ")*, Order No. 20203, ¶46, rel. August 9, 2019.

[23] *Formal Case No. 1144*, Order 20332, rel. April 22, 2020 ("Order No. 20332").

[24] *Formal Case No. 1156, In the Matter of the Application of Potomac Electric Power Company for Authority to Implement a Multiyear Rate Plan for Electric Distribution Service in the District of Columbia ("Formal Case No. 1156"),* Direct Testimony of Pepco Witness Clark, Exhibit (I)-2 at 26 (Item No. 21).

[25] *Id.* at 177 (Item No. 139).

Georgetown Substations with new solid dielectric feeders."[26] But there is no mention of providing service to the 22nd Street Substation. Thus, it is unclear whether the 69kV cables from the Takoma Substation to the 22nd Street Substation will be replaced with new cables from the Champlain Substation to the 22nd Street Substation. Also, if the 69kV cables are not replaced, what is the long-term plan for these cables and the source for the 69kV cables to the 22nd Street Substation?

Another uncertainty not explained in Pepco's summary is how the Downtown Substations (22nd Street, "F" Street, "I" Street, "L" Street, and Georgetown) will remain energized while the Champlain Substation and the 230kV transmission line are being constructed. Will there be some type of temporary transformer feed so that scheduling can be maintained?

Finally, the retirement of the "I" Street Substation is not addressed in Pepco's summary. One of the driving factors for the schedule of the Downtown Resupply Project is the expiration of the "I" Street Substation lease at the end of 2023. However, it is unclear if and when the "I" Street Substation might be retired.

There are "Cutover" projects (UDLPLM7W27 and UDLPM7W28) with no explanation as to the costs that are included in the $72 million for these projects. Presumably, load is to be shifted, but there are no explanations of why or how. And if the infrastructure will be temporary or permanent.

OPC recommends that the comprehensive plan have milestone dates and project stages which must be completed prior to those milestones. For instance, the capacity of the "L" Street Substation must be increased. Once "L" Street is completed, load will be shifted from "F" Street to "L" Street. Once this shift is complete, the "F" Street Substation can be re-built with sufficient

[26] *PEPACR 2020-01*, 2020 ACR, p. 31.

capacity to allow the "I" Street Substation to be retired. It is unknown how the construction of the 230kV cables, the Champlain Substation, the 34kV cables to "L" Street, and the new 69kV cables to the other Downtown Substations will impact the work previously described. Thus, OPC believes the DRP comprehensive plan should include project milestones and completion dates of these milestones. Further, the projected budgets should be compared to actual expenditures to clearly show if the project or portions of the project are exceeding the plan budget.

OPC notes that Pepco stated there are no changes to the cost estimate for the DRP as of March 31, 2020. However, OPC is uncertain of the accuracy of the starting budget for the project, especially since the project has changed scope regarding the 22nd Street Substation. The starting budget should be clearly stated. OPC developed the following table of budgets and actual costs for the DRP projects identified by Pepco.

WSB	Downtown Resupply Project	Life Cycle Cost	Budget 2019	Completed 2019	Budget 2020	Construction Schedule (Yrs)
UDLPLM7W27	13kV cutover F to L	$ 39,849,304	$ 7,000,000	$4,995,006	$2,772,803	
UDLPLM7W28	13kV cutovers I to F & L	$ 32,434,952				
UDLPRM4WA8	Champlain to L street 34kV	$102,319,736	$ 7,367,984	$ 293,625	$1,068,682	2019-2028
UDSPLM718A	F St Sub Rebuild (69kV)	$ 50,372,188	$ 662,144	$ 221,679	$1,128,752	2022-2026
UDSPLM717A	F St Sub Rebuild	$ 33,581,458	$ 602,300	$ 324,159	$1,052,000	2022-2026
UDSPLM722A	L St Sub Capacity Expansion	$ 4,011,558	$ 500,000	$ 173,002	$ 422,181	2021
UDLPRM5SG	Repl 69kV UG Supl-Greogretown, F St, 22nd St Subs	$177,223,136	$ 4,958,000	$1,157,978	$1,122,283	2019-2028
UDSPR27RD	Retire I St Sub	$ 2,081,496				
UDLPRM4RDR	Retirements Downtown resupply 34kV and 69kV for DC	$ 35,522,470				
UDLPRM4RDM	Retirements Downtown resupply 34kV and 69kV for MD	$ 1,309,199				
UDLPRM4RDV	Retirements Downtown resupply 34kV and 69kV for VA	$ 13,322,712				
UDFPO22SS	Telecom 22nd St	$ 500,000				
UDFPOCL01	Telecom Fiber for 34-69kV resupply Champlain, L and F	$ 500,000				
UDFPOGS01	Telecom - Georgetown Sub	$ 500,000				
UDFPOLS01	Telecom - L Street Sub	$ 500,000				
		$494,028,209	$21,090,428	$7,165,449	$7,566,701	

But without milestones, it is not possible to determine if the project will be successful at meeting goals laid out by Pepco to stakeholders.

D. Substation Additions and Enhancements

Per Order No. 16975, the Commission requires Pepco to provide details concerning the justification for substation additions and enhancements.[27] In the 2020 Annual Consolidated Report, Pepco provided information regarding the Harrison Substation, Mt. Vernon Substation, Harvard Substation, and Champlain Substation. OPC reviewed the prior Annual Consolidated Reports and developed this table which compares the yearly budgets for these substation additions and enhancements.

Projects	2018 ACR Estimates	2019 ACR Estimates	2020 ACR Estimates
Harrison Sub. (Formerly NW Sub) *Upgrade substation to replace aging infrastructure*	**$146.2 million; June 2019**	**$149.9 million; Dec. 2019**	**$192.0 million; Dec. 2019**
Mt. Vernon Square Sub. *Build new substation to relieve predicted network overloads*	**$255.9 million; June 2022**	**$143.0 million; June 2023**	**$154.4 million; June 2023**
Harvard Sub. *Upgrade Harvard as a new 230/13 kV substation to retire existing Harvard and Champlain substations*	**$178.4 million; June 2022**	**$180.0 million; June 2023**	**$192.4 million; June 2024**
Champlain Sub. *Upgrade Champlain as a new 230/34 kV substation to resupply downtown distribution substations*	**$150.3 million; June 2026**	**$123.0 million; June 2026**	**$155.9 million; June 2026**

Increased capacities at the Waterfront and Benning Substations are not mentioned in the 2020 ACR. OPC notes that Attachment B to the 2020 ACR includes project UDSPLM7WF4 – Waterfront Sub – Install 4th Transformer with a budget of $326,651 and includes project UDSPLM7 – Install 4th 230/69kV 224 MVA transformer #12 at Benning with a budget of $2,693,286. These types of capacity increases should be presented to stakeholders for clarity and understanding of how the system is expanding in terms of capacity at a time when electric demand

[27] *Formal Case No. 766-ACR-12*, Order No. 16975, ¶ 50, rel. November 29, 2012.

in the District is trending down.

E. Upgrade Harrison Substation 38

The 2020 ACR reports this substation upgrade was completed in December 2019, and circuits are being shifted to the substation with completion scheduled for some time in 2020. The budget for this work was reported in the 2019 ACR to be $149,900,000,[28] but in the 2020 ACR the cost has jumped to $192,000,000.[29] The explanation for the increase in cost is the exact reasoning used in the 2019 ACR. It is not clear why Pepco did not anticipate a $42,100,000 cost overrun in its reporting in the 2019 ACR. OPC suggests that Pepco review this project at a PIWG meeting so stakeholders can understand the cause(s) of this 28% budget overrun.

F. Mount Vernon Substation

The 2019 ACR had a construction budget of $143.0 million[30] for this substation while the 2020 ACR is budgeting $154.4 Million.[31] It would be useful for stakeholders to understand the reasons underlying this budget increase; therefore, OPC suggests Pepco present information to the PIWG regarding the status and budget of the Mount Vernon Substation.

G. Champlain Substation

The 2018 ACR had a construction budget for this substation of $150.3 million.,[32] The 2019 ACR had a budget of $123.0 million.[33] And the 2020 ACR has a current budget of $155.9 million.

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[28] *PEPACR 2019-01,* 2019 ACR, p. 32.

[29] *PEPACR 2020-01,* 2020 ACR, p. 32.

[30] *PEPACR 2019-01,* 2019 ACR, p. 34.

[31] *PEPACR 2020-01*, 2020 ACR, p. 34.

[32] *PEPACR 2018-01,* 2018 ACR, p. 38

[33] *PEPACR 2019-01*, 2019 ACR, p. 37.

Pepco provided an explanation for the change in budget for the Champlain Substation as "The increase in cost is due to the inclusion of costs associated with Takoma Sub. 500MVA phase shifters."[34]

In December 2019, Pepco reported that the substation design for the Rebuilt Champlain Substation is 90% complete.[35] However, this is exactly the same explanation the Company provided in the 2018, 2019, and 2020 ACRs, respectively. Because the substation design is at 90% completion, Pepco should be able to provide a near final budget for this project. Further, the scope of the project should be clarified because the phase shifters will be installed in the Tacoma Substation, and these phase shifters will require control and protection. The Tacoma Substation phase shifters should not be lumped in with the Champlain Substation. Those items should be tracked as a separate budget. Accordingly, OPC suggests Pepco provide a separate budget for the improvements at the Tacoma Substation or provide greater detail in the explanation of the scope of work associated with the Champlain Substation.

H. <u>Harvard Substation</u>

The 2019 ACR had a construction budget for this substation of $180.0 million,[36] while the 2020 ACR is budgeting $192.4 million.[37] As of October 2019, Pepco has reported that civil and electrical designs for the Harvard Substation are 100% complete.[38] Now that those designs are 100% complete, it would be useful for stakeholders to understand the increase in budget.

[34] *PEPACR 2020-01*, 2020 ACR, p. 37.

[35] *Formal Case No. 1144*, Pepco's 120 Day Compliance Filing in Response to Order 20203, dated December 9, 2019.

[36] *PEPACR 2019-01*, 2019 ACR p. 36.

[37] *Id.*

[38] *Formal Case No. 1144*, Pepco's 90 Day Compliance Filing in Response to Order No. 20203, Substation Design Schedule, filed November 7, 2019.

Therefore, OPC suggests Pepco present information to the PIWG regarding the status and budget of the Harvard Substation. OPC notes that the retirement of the existing substation is necessary to accommodate the construction of the new Harvard Substation. All load is scheduled to be transferred by December 2020. Further, this retirement cannot take place until the 4kV-t- 13kV conversion is completed at the Harvard Substation.[39] Due to the slow nature of the 4kV conversion, OPC is concerned regarding the timing of the final conversion at Harvard, and would seek assurances from Pepco regarding the timely and seamless completion of this project.

I. Minutes of the ECA Team

In Order No. 16975, the Commission directed the following:

> [T]he Commission accepts OPC's recommendation that Pepco be required to report the results of the ECA effort in the 2013 Consolidated Report. Specifically, the Commission directs Pepco to report on the recommendations and actions taken by the ECA team, including membership lists, meeting dates and minutes, analyses of impact of the ECA team on maintenance or replacement policies and asset management strategy and tactics. We also require Pepco, to the extent not already included, to report on costs for recommended equipment replacements and the projected benefits of those replacements, as OPC suggests. Further, the Commission directs Pepco to provide an explanation of how the work of the ECA team relates to other Pepco reliability initiatives and include a discussion of the equipment failure analysis as part of future years' Consolidated Reports.

Formal Case No. 766-ACR-12, Order No. 16975, ¶ 39. In an attempt to comply with this requirement, the Company included minutes of the quarterly ECA team meetings in its 2013 ACR.

The 2019 ACR contains information regarding equipment that was replaced in 2018. However, the ECA Team minutes do not include justification for replacement, rehabilitation, or retirement of equipment for 2019. OPC notes that Pepco's Reliability Forecast for 2019 has budgeted funds for the following items which normally originate at the ECA Team meetings:

[39] *PEPACR 2020-01*, 2020 ACR 99.

Project Number	Project Description	2019 Budget ($000)
UDLPRM4WA1	Van Ness Sub Switchgear Replacement	$660
UDSPRD8KD	13.8kV Switchgear Replacement – Prioritized	$1,727
UDSPRD8FD	Replace U-Type Bushings	$111
UDSPRD8FV	Replace U-Type Bushings in Virginia serving DC loads	$76
UDSPRD9GD	Replace Substation Transformer at New Jersey Sub and 10th Street S	$10,142
UDSPRD821D	Replace 69kV Oil Circuit Breakers	$18
UDSPRD8Z	Replace Buzzard Point 138kV Switches	$214
DSPRD8Ad11	Sub 168 Naval Research Replace Transformer T1	$1,452
DSPRD8AD13	Sub 12 Georgetown Replace Transformer T1	$1,300
UDSPRD8AD1	Fort Slocum Replace Switchgear	$3,052
UDSPRD8TC1	Sub 150 Twinning City Replace Transformer T2	$1,300
	Total	**$20,052**

These are significant budgetary components of the reliability budget and therefore it is important that stakeholders understand the purpose of these expenditures. OPC recommends that ECA Team data provided in the ACR include reasoning and justification for future capital expenditures.

J. Conversion Project Status

The construction schedules for the 4kV-to-13kV conversion projects are not meeting budgets as shown in the following table.[40]

[40] Data from 2020 ACR and 2019 ACR Section 2.3.1.

4kV to 13kV Conversion Projects

Project Amounts (x1000)

	Budget	Actual
2019	17,801	3,458
2018	26,718	12,106

Pepco discusses the budgets and actual expenditures for five 4kV-to-13kV conversion projects which are summarized in the following table:[41]

	2019 ($x1000)		2020
	Budget	**Actual**	**Budget**
Georgetown	$ 5,479	$ 23	$ -
Harvard	$ 1,471	$ 2,559	$ 800
North Capital	$ 1,471	$ 2,559	$ 2,057
12th Street	$ 1,524	$ 376	$ 6,864
Anacostia	$ -	$ 1,886	$ 241
G Street	$ 8,526	$ 352	$ 1,346
Total	**$ 18,471**	**$ 7,755**	**$ 11,308**

OPC observes that the summary table provided by Pepco in Section 2.3-A does not match the details presented by Pepco in Section 2.3.2.2 of the ACR. It appears there may be an error because Pepco's text shows the budget and actual spend for both the Harvard and North Capital Substations to be exactly the same, which does not seem probable.

The reason for delay cited by Pepco for the Georgetown conversion project was "unanticipated non-constructability of the previous plans." This is very concerning given that Pepco has invested over $10,400,000 in the conversion work at Georgetown in 2018 and 2017.[42] OPC suggests that Pepco make a presentation to the PIWG addressing the non-constructability of the previous plans, the proposed new plans, and present a description of any stranded investment which may not be usable in the new plans.

[41] *PEPACR 2020-01*, 2020 ACR Section 2.3.2.2, 4kV to 13 kV Conversion Projects.

[42] *PEPACR 2020-01*, 2020 ACR, Data from 2019 and 2018 ACR Section 2.3.2.2.

Regarding the Harvard 4kV conversion project, in the 2018 ACR Pepco stated that the "vast majority of the conversions should be completed by December 2018."[43] The 2019 ACR stated Pepco spent an additional $3,703,966 and that "the 4kV to 13kV conversions in this area are scheduled to be to be completed by December 2019."[44] In its 2020 ACR the Company states that $2,559,167 was spent on this conversion and again Pepco stated" the 4kV to 13kV conversion in this area are scheduled to be completed in 2020."[45] The 2019 ACR depicted no budget for conversions in 2020 which is consistent with the 2018 ACR. The 2020 ACR now shows $800,000 budget in 2020 for conversion.[46]

The conversion work at the Harvard Substation seems to have changed in 2019. Pepco should be directed to provide greater clarity regarding changes in the work and provide the new completion date for this conversion.

The conversion work on the "G" Street Substation has increased more than $10,000,000 for the next five years. OPC recommends that Pepco provide more project details and scheduling information at a PIWG meeting in 2020.

K. <u>2019 Repeat Priority Feeders</u>

The protocol for selecting priority feeders is to identify the 2 % least performing feeders, but exclude those feeders which were priority feeders the year prior.[47] The reasoning behind the exclusion is that the corrective action may not be in place in time to reduce outage numbers; therefore, the exception allows time for the corrective actions to take effect. In comments on the

[43] *PEPACR 2018-01*, 2018 ACR, p. 98.

[44] *PEPACR 2019-01*, 2019 ACR, p. 99.

[45] *PEPACR 2020-01*, 2020 ACR, p. 99.

[46] *PEPACR*, 2018, 2019, and 2020 ACR 98-99.

[47] *PEPACR 2020-01*, 2020 ACR, p. 109.

2019 ACR, OPC recommended that priority feeders for which no work is scheduled should not be excluded from the selection process for determining priority feeders. OPC notes that the protocol for selection of the priority did not change in the 2020 ACR.[48]

Of the nine feeders from the 2019 ACR with no work, OPC found that three actually had worse reliability in 2019 than in 2018.

	12 Months Ending 9/2018		12 Months Ending 9/2019	
Feeder	**SAIFI**	**SAIDI**	**SAIFI**	**SAIDI**
14093	2.19	58	1.11	182
16000	2.02	183	4.03	183
16001	2.13	151	3.59	590

It is possible these feeders will repeat in 2021 given that no action has taken place to improve their performance. OPC understands that in some cases the appropriate plan is to perform no work for a priority feeder depending on the type of outages. For example, vehicles striking a pole can cause outages with little or no remediation available to the utility. However, OPC believes and recommends these feeders should not be excluded from the selection process for priority feeders in the following year.

L. 2020 Priority Feeders

Each year Pepco analyzes the performance of its feeders to determine the relative ranking of each one from the most to the least reliable. Pepco selects the least reliable 2% of its feeders, excluding those chosen from the prior year's study.[49] The priority feeders from the prior year are excluded from the subsequent year because the reliability improvement would not occur until the full results of corrective actions are complete.[50]

The analysis for each of the feeders is provided in a table of the SAIFI, SAIDI, and CAIDI

[48] *Id.*

[49] *PEPACR 2020-01*, 2020 ACR, p. 110.

[50] *Id.*

based on twelve months of outage data ending September 2019. Below is a sample of one of those tables:

13.) Circuit: 15710

County	Substation	Customers Served	Number of Outages	Oct. 2018-Sept. 2019 Reliability Indices (In Hours)			Feeder Miles			Repeated Last 2 Years?
				SAIFI	SAIDI	CAIDI	OH	UG	Total	
DC	Benning (7)	2,207	17	2.06	93	573	79%	21%	8.15	N

The mathematical relationship among the SAIFI, SAIDI, and CAIDI is shown in the following equation:

SAIDI = SAIFI X CAIDI

As can be seen in the above table, this relationship does not hold true. It is unknown which of the indices is wrong or if all may be incorrect. Further, the table labels SAIDI and CAIDI in hours, but it appears this value is actually in minutes. OPC recommends that Pepco correct these errors which appear on 15 out of 16 of the tables for the feeders.

M. Feeder 211

Pepco identified this "G" Street Substation feeder as one slated for conversion from 4kV to 13kV. The conversion work will replace 4kV cable with 13kV cable and replace 4kV transformers with 13kV transformers. Further, other ancillary 4kV equipment is to be replaced with 13kV equipment. As Pepco stated, this work will improve reliability. However, the conversion at the "G" Street Substation extends at least through 2024. Therefore, it is not clear when the customers on this feeder can expect relief from repeated outages on this power line. OPC recommends that Pepco provide a project schedule for conversion for Feeder 211.

N. Feeder 14136

Pepco is proposing to replace 14,000 feet of underground cable as part of the Underground Residential Distribution ("URD") replacement program. This circuit extends about 1.25 miles underground south from the Van Ness Substation. It is not clear if this cable is a URD cable or PILC cable. Further, OPC is unaware of any program or WSB project code for a URD Replacement Program. OPC requests Pepco provide a review of the URD Replacement Program—including, budgeted amounts and actual spending for the last five years. Further, Pepco should present information why Very Low Frequency ("VLF") testing is not recommended for this feeder as suggested in Pepco's aggressive measures for underground feeders,[51] and Pepco should present information as to why only one cable failure in 2019 justifies replacement of 14,000 feet of cable.

O. <u>Feeder 15867</u>

This feeder is also served out of the Van Ness Substation. It is an underground cable that extends from the substation approximately 1.5 miles. This feeder actually had two mainline cable failures in 2019. Pepco is not planning to replace this cable or do any VLF testing as recommended in the aggressive measures detailed in the 2020 ACR.[52] OPC recommends Pepco describe why the aggressive measures for 13kV feeders would not be appropriate for this feeder.

P. <u>Feeder 14261</u>

This feeder had several faults attributed to the PAC cable, and Pepco noted that the PAC cable is aged with multiple splices over various spans.[53] Pepco is planning minor work—such as, crossarms, fused-outs, lightning arresters, etc.[54] However, the apparent root cause of the outages,

[51] *PEPACR 2020-01,* 2020 ACR, p. 113.

[52] *Id.*

[53] *PEPACR 2020-01,* 2020 ACR, p. 129.

[54] *Id.*

the PAC cable, is not being replaced as part of the priority feeder program. Rather, Pepco suggests that the PAC cable will be replaced as part of the resiliency improvement for this feeder. OPC is concerned about the reliability of the electric service for those customers served by this feeder. Therefore, OPC requests that Pepco explain which WSB will be used to replace the PAC cable, and provide a schedule for the replacement of the cable. Specifically, the Office asks that the Company be directed to confirm the PAC Cable will be replaced in 2020 so these customers can obtain some relief with respect to the outages they have been experiencing.

Q. <u>Feeder 15094</u>

This feeder provides electric service to 2,510 customers. Pepco is planning a new feeder which will reduce the number of customers on feeder 15094.[55] This reduces the number of customers affected by a mainline fault and can be an effective solution for reliability. However, the budget proposed does not cover the cost of a new feeder. Presumably, the funding will come from the Project UDLPRM4LRD Ft. Lincoln Reliability Initiative.[56] However, Pepco has provided no schedule for the completion of this new feeder, which should provide relief for these customers. OPC requests that Pepco provide a construction schedule for the new feeder.

R. <u>Feeder 16002</u>

This feeder is 100% underground. OPC's review of the outage data shows one mainline cable failure, which affected the entire circuit. Most customers were restored in less than 3 hours. However, 311 customers were without power for over 18 hours. This long duration outage resulted in a very high SAIDI for this feeder. It is unclear why Pepco's underground system is not looped to afford relief and forestall the need for consumers having to endure 18-hour outages. No work

[55] *PEPACR 2020-01*, 2020 ACR, p. 139.

[56] *PEPACR 2020-01*, 2020 ACR, Attachment B.

is proposed for this feeder. OPC recommends that Pepco consider how loop-feed construction can improve the reliability of this feeder.

S. Feeder 16003

This feeder is completely underground. OPC's review of the outage data shows one mainline cable failure which affected the entire circuit. Most customers were restored in less than 3 hours. However, 409 customers were out of power for over 18 hours. This long-duration outage resulted in a very high SAIDI of 852 minutes (compared to a system value of 77 minutes). It is unclear why Pepco's underground system is not looped to afford relief and to prevent consumers from suffering through 18-hour outages for repairs. OPC notes that the time of the outage on Feeder 16003 coincides with the long-duration outage on Feeder 16002. No work is proposed for this feeder. OPC recommends that Pepco consider how loop-feed construction can improve the reliability of this feeder. Alternately, it may be necessary to separate the routing of Feeders 16002 and 16003 if these two circuits provide backup service for each other. Separate routing of interdependent cable is common for N-1 design consideration.

T. System Reliability Statistics

The purpose of the Electric Quality of Service Standards ("EQSS") is to establish requirements for electric utilities operating in the District of Columbia to meet in order to provide an adequate level of quality and reliability in the electricity service they provide.[57] The reliability performance standards for 2019 are a SAIFI of 0.95 and a SAIDI of 1.65 hours (99 minutes).[58] In addition to these standards, Order No. 18148 approved the merger of Pepco and Exelon per the terms set out in Attachment B of that Order.[59] Attachment B included reliability levels referred to

[57] 15 DCMR § 3600.1 (Lexis 2020).

[58] 15 DCMR § 3603(g) (Lexis 2020).

[59] *Formal Case No., 1119, In the Matter of the Joint Application of Exelon Corporation, Pepco Holdings,*

as the "Merger Commitment for the years 2016 through 2020".[60] The Merger Commitment for 2019 is a SAIFI of 0.66 and a SAIDI of 1.45 hours (87 minutes).[61] These statistics exclude major service outages,[62] which are defined as customer interruption occurrences and durations during time periods when 10,000 or more of the electric utility's District customers are without service, and the restoration effort due to this major service outage takes more than twenty-four (24) hours.[63] There were no major service outages in the District in 2019.

Pepco reported the SAIFI for 2019 as 0.59 and the SAIDI for 2019 as 1.29 hours (77 minutes),[64] which meet the EQSS and Merger Commitment. However, as shown in the following graphs, the SAIFI and SAIDI values have deviated from an otherwise admirable trend. OPC analyzed the sustained outage data for 2019 and identified that a major contributor to SAIFI and SAIDI is the extended outage at the Florida Substation in July. Had this outage not occurred, OPC's estimate of SAIFI is 0.52 and SAIDI is 62 minutes. These adjusted values without the Florida Substation outage show Pepco had reliability on par with 2018 and 2017. This does not excuse the outage at Florida Substation, and OPC understands, based on a root cause analysis, Pepco is taking steps to correct problems with similar LTCs on the system.[65] However, OPC's

Inc., Potomac Electric Power Company, Exelon Energy Delivery Company, LLC and New Special Purpose Entity, LLC for Authorization and Approval of Proposed Merger Transaction ("Formal Case No. 1119), Order No. 18148 ¶ 1 ("Order No. 18148").

[60] *Formal Case No. 1119*, Order No. 18148, Attachment B ¶ 54.

[61] *Id.*

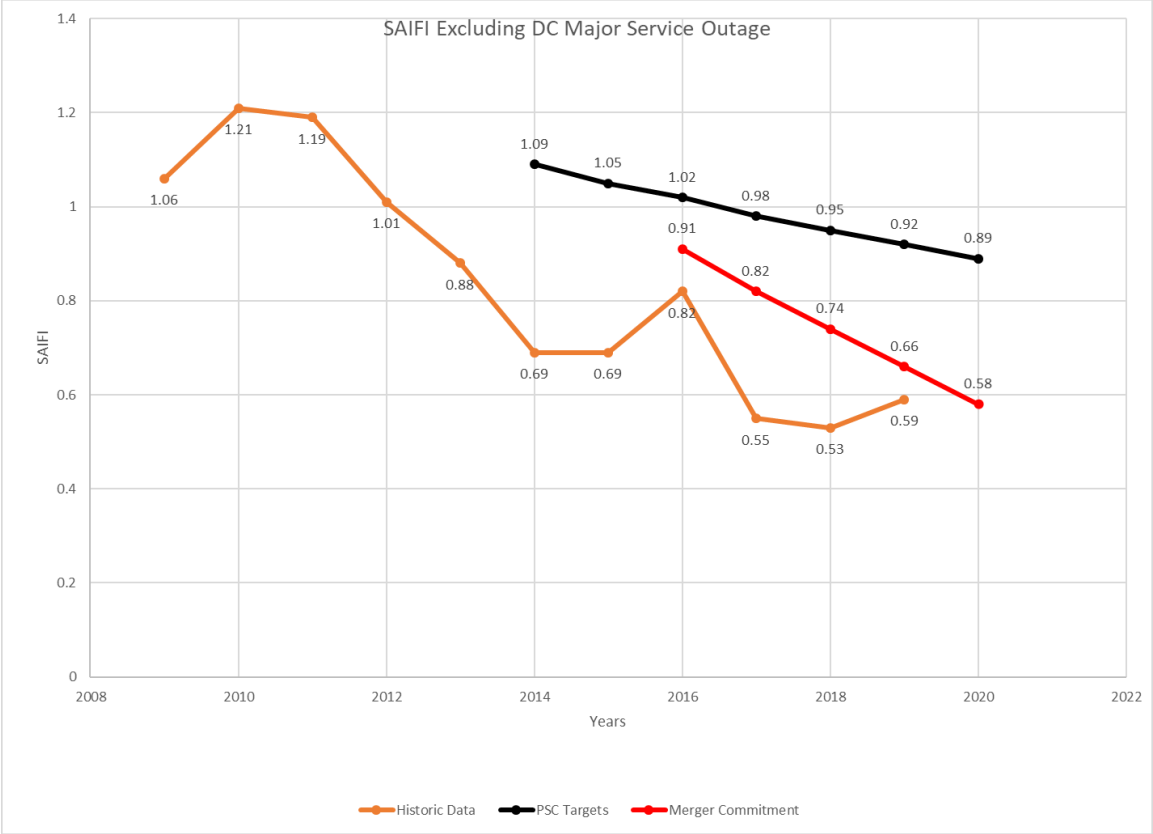
[62] *Formal Case No. 766, Formal Case No. 982 and Formal Case No. 991*, Compliance with 15 DCMR 3603.11(i), Pepco notice to Commission dated Jan 2, 2013.

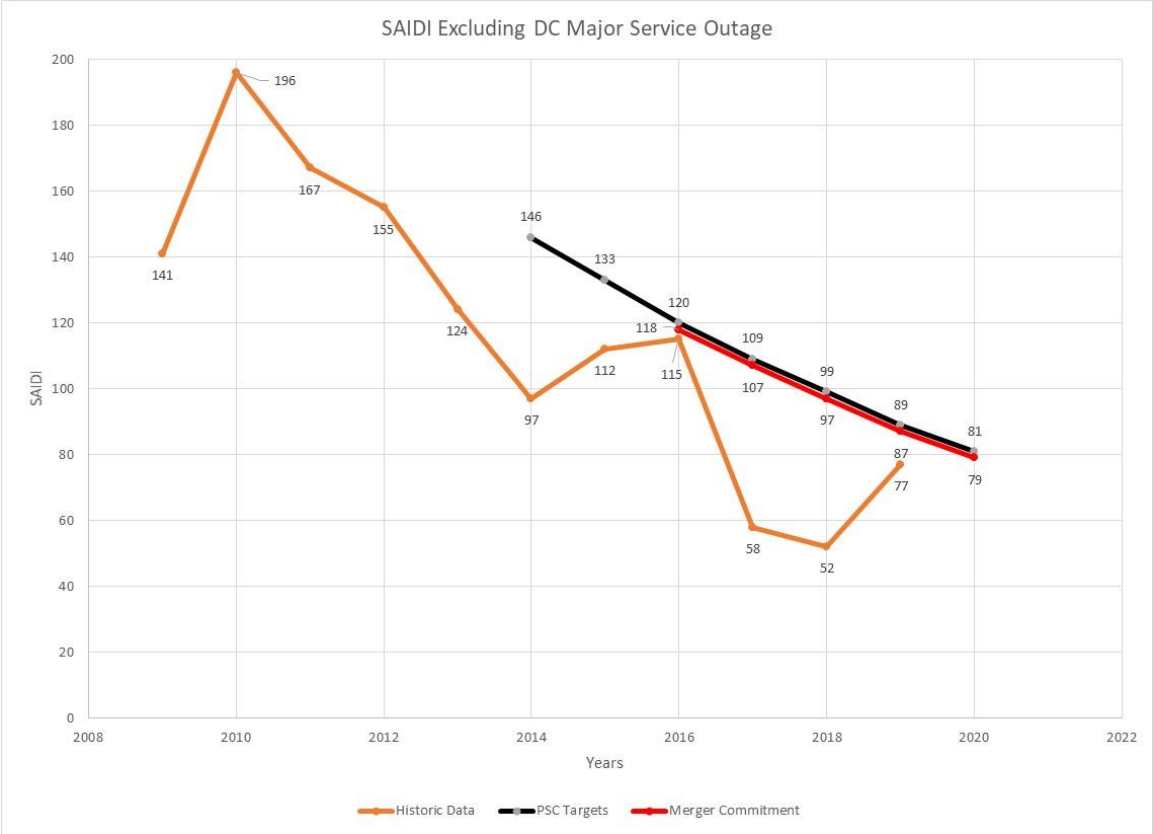
[63] 15 DCMR § 3699.1 (Lexis 2020).

[64] *PEPACR 2020-01 AND Formal Case No. 1119*, Corrections to the 2020 ACR s filed April 20, 2020, Table 2.4-B4.

[65] *Formal Case No. 982*, Pepco's Root Cause Investigation Report on July 27, 2019 Florida Avenue Substation event, filed November 1, 2019.

analysis shows that the overall reliability and improvement in system reliability when compared to 2010 data has improved substantially.



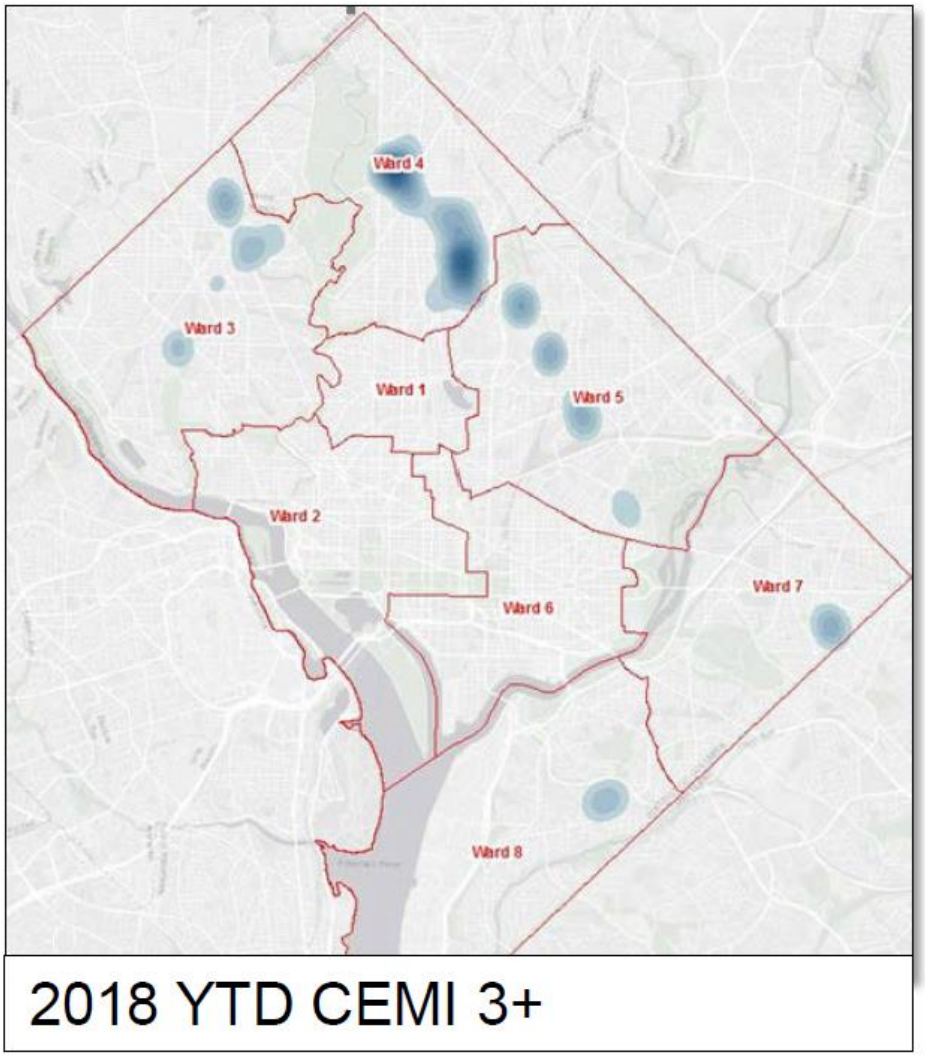


U. Neighborhood Analysis

OPC has an interest in ensuring the reliability of neighborhoods across the District. Ratepayers do not see their community divided into service areas of feeders; all they see are neighborhoods. Pepco has changed its approach to neighborhood reliability now using a more defined geospatial approach to determine the most susceptible neighborhoods. This method is based on 250 customers experiencing multiple interruptions ("CEMI") of 3 or more in a single year within that individual neighborhood.[66] It should be pointed out that an interruption is defined as any sustained electrical interruption of five minutes or more. Therefore, blinking lights are not included in this analysis. Pepco has provided a heat map at the PIWG meetings that graphically

[66] *PEPACR 2020-01*, 2020 ACR 176.

depicts the location of the most susceptible neighborhoods.[67] The 2018 heat map for CEMI-3, which can aid stakeholders in understanding problem areas and how those problems get solved from one year to the next, is shown below.[68] OPC recommends that this graphic be included in future ACRs.



[67] *Formal Case No. 766*, PIWG Minutes for July 26, 2019, filed August 6, 2019.

[68] *Id*,

V. EQSS Standards

The EQSS rules impose performance standards for the reliability of Pepco's electric distribution service in the District and reporting requirements for various incidents and outages.[69] Review of the January – December 2019 aggregate totals indicate Pepco continues to exhibit over 90% compliance with the EQSS reporting rules for those sections reported upon.[70] Meeting EQSS requirements plays an important part in assuring District consumers receive adequate and reliable electric service.

Under Section 3602.14, Pepco is required to "complete installation of new residential service requests within ten (10) business days of the start date for the new installation."[71] Pepco achieved 100% compliance in 2017 and 2018. In 2019, Pepco reports 100% compliance in its May 14, 2019 and January 20, 2020 filings, respectively. In the Company's May 15, 2020 filing, which covers the period October 2019 – March 2020, Pepco reports slipping to 89% compliance, missing 7 of 65 residential service request deadlines.[72] Because the filing period extends from the 4th quarter of 2019 through the 1st quarter of 2020, OPC cannot tell how much, if any, of the slippage occurred in the 4th quarter of 2019. Pepco's reported remediation efforts center on coaching employees to improve time management skills.[73]

Under Section 3603.7 of the EQSS, Pepco is required to restore power within 24 hours for power outages that are considered to be non-major service outages.[74] Pepco reported 100%

[69] 15 DCMR §§ 3600 – 3699 (Lexis 2020).

[70] *PEPACR 2020-01*, 2020 ACR 209 – 212.

[71] 15 DCMR. § 3602.14 (Lexis 2020).

[72] *Formal Case No. 982*, Pepco's Semi-Annual New Residential Service Requests Reports, filed May 14, 2019, January 20, 2020, and May 15, 2020.

[73] *Formal Case No. 982*, Pepco's Semi-Annual New Residential Service Requests Report, filed May 15, 2020.

[74] 15 DCMR. § 3603.7 (Lexis 2020).

compliance with Sections 3603.7/3603.8 in its quarterly EQSS Report filings and in the 2019 EQSS Aggregate Totals contained in the 2020 ACR. However, page 213 of Table 2.4L: Percentage of Non-Major Outages that Extended Beyond 24 Hours, indicates that one such outage did occur in 2019.

The table below summarizes Pepco's compliance with Section 3603.7.

3603.7 Non-Major Outage Restoration			
Year	**Total Number of Non-Major Outages**	**Non-Major Outages Extending Beyond 24 hrs.**	**% Compliant**
2019	251	1	≈100%
2018	246	1	≈100%
2017	197	0	100%
2016	320	6	98%
2015	350	6	98%
2014	378	11	97%
2013	365	5	99%
2012	559	10 *	98%
2011	529	9	98%
2010	664	21 **	97%
* Excludes H. Sandy.			
** Excludes February Snow Event			
Data obtained from Annual Consolidated Reports.			

OPC notes that the number of non-major service outages in 2019 continues to trend upward, having increased 2% from 2018 and 27% from the low of 197 incidents in 2017. Pepco should monitor this trend for any clues as to why service outages are increasing. However, overall, the trend is still down from 2016 and prior years.

Table 2.4-M indicates there was one non-major outage that required more than 24 hours to restore service. This outage involved a tree down resulting in 19 customers being without power for over 24 hours. It is suggested that Pepco provide a report to the PIWG describing why this

outage extended more than 24 hours.

W. Feeders 16000 and 16001

Pepco identified a list of 13 feeders that have resulted in poor reliability for the neighborhoods they serve. Pepco suggests that Feeders 14786, 14717, 15176, 15177, 16000, and 16001 were part of the 2019 Priority Feeder Program and as such no work is created in the susceptible neighborhood program. However, two of these feeders are 16000 and 16001, which, as previously mentioned in these comments, are feeders for which Pepco did not perform any work and whose reliability worsened in 2019. OPC suggests that Pepco report on upgrade plans to these two circuits that service neighborhoods north of the new soccer stadium. Without any work being accomplished, these neighborhoods will continue to suffer poor reliability.

X. Vegetation Management Costs

Pepco reports the budgets and the annual actual expenditures for vegetation management ("VM"). This information is reported in Table 2.4-K1, which is repeated below:

Pepco District of Columbia O & M Tree Trimming Costs								
	2013	2014	2015	2016	2017	2018	2019	2020
Actual								
Tree Trimming - DC	$2,352,567	$2,164,336	$2,238,654	$2,269,634	$2,365,759	$1,705,410	$2,124,929	
Budget/Forecast								
Tree Trimming - DC	$2,218,342	$2,113,300	$2,324,572	$2,335,008	$2,412,774	$2,480,616	$2,522,296	$2,361,114
Variance	($134,225)	($51,036)	$85,918	$65,374	$47,015	$775,206	$397,367	
Tree Trimming - DC								
Notes:								
1. Excludes pole inspections, substation mowing costs								

Pepco has elected to provide performance-based reporting on vegetation management in response to Commission Order 19119.[75] This performance-based Tree-SAIFI sets a threshold of

[75] Pepco elected performance-based reporting in a letter to the Commission dated December 20,2017. *See PEPACR 2017-01*, Pepco's Letter in Response to Order 19119, filed December 20, 2017.

0.12.[76]

OPC's analysis of the Tree-SAIFI and Tree-SAIDI shows a possible error in Pepco's calculations. The SAIFI value should be the sum of customers interrupted for the year divided by total customers served. Pepco has the exact same number for total customers served from the Outage Management System, but, instead, used as a proxy the total number of customers served as presented by Pepco in Table 1.2A in the Annual Consolidated Report. The table below shows OPC's calculations for 2018 and 2019.

Year	2018	
Row Labels	**Customers Interrupted**	**CMI**
Tree Outside ROW - Down	9,747	3,631,863
Tree Outside ROW - Limb	6,600	853,935
Tree Row - Down	1,822	629,184
Tree ROW - Limb	10,059	2,740,392
Tree Vine	37	4,722
Grand Total	**28,265**	**7,860,096**
Number of Customers Served (1)	289,975	289,975
Tree-SAIFI and Tree-SAIDI	0.097	27.106

Year	2019	
Row Labels	**Customers Interrupted**	**CMI**
Tree Outside ROW - Down	3,612	611,129
Tree Outside ROW - Limb	3,740	995,223
Tree Row - Down	3,787	737,144
Tree ROW - Limb	5,597	731,071
Tree Vine	35	6,108
Grand Total	**16,771**	**3,080,675**
Number of Customers Served (1)	293,911	293,911
Tree-SAIFI and Tree-SAIDI	0.057	10.482

(1) Obtained from Table 1.2A

In contrast, Pepco had tree SAIFI values of 0.07 for 2018 and 0.05 for 2019. Pepco's Tree-SAIDI values were 5 minutes per customer per year for both 2018 and 2019, respectively. In

[76]*PEPACR 2015-01 and PEPACR 2016-01*, Order No. 19214 ¶ 9, rel. December 20, 2017.

reviewing Order No. 19119, there is no declarative statement indicating if the SAIFI value used for performance-based VM includes or excludes trees and limbs outside the right-of-way. Order Nos. 19119 and 19214, which both address performance based VM, do not indicate if the performance measurement should include or exclude trees and limbs outside the right-of-way. OPC suggests that the performance measurement should include trees outside the right of way, especially since hazard tree removal is an important part of the VM program. Further, OPC notes that based on the 2018 and 2019 sustained outage data, Pepco's calculations of Tree-SAIFI and Tree-SAIDI are flawed, even if they only encompass trees and limbs in the right-of-way.

OPC has observed the VM budgets include removal of hazardous trees[77] which typically requires coordination with the DC Urban Forestry Administration ("UFA"). OPC believes removal of these tress is a proactive means to reduce outages due to trees outside the right of way. CMI caused by trees outside the right of way has increased from 3.9% in 2015 to 9.7% in 2017, 14.3% in 2018, and now 8.5% in 2019.[78]

OPC suggests that if the VM program has become more efficient in meeting the performance goal, it may be advantageous to direct excess VM funds to identify and eliminate more hazardous tree conditions.[79] The outage data is showing a trend of more outages and longer duration outages associated with trees outside the right-of-way; as a result, directing these funds toward this endeavor could help with reliability and resiliency.

Y. Equipment Failure Rates

Equipment failure is a leading cause of outages on Pepco's system within the District of

[77] *PEPACR 2020-01,* 2020 ACR, p. 65. A hazardous tree is one with defects which can cause the tree to fall on power lines.

[78] Excludes CMI related to the Florida Substation outages

[79] *Id.*

Columbia. The total customer minutes interrupted (15,891,035) has decreased in 2019 compared to 2018 (31,299,248) and is closer to the level experienced in 2017 (16,055,968). The top-three equipment failure types are cable, transformer, and connection. The number of cable failures and the customer minutes interrupted have remained consistent from 2018 and 2019, with 221 failures and CMI of 4,971,836.

A new equipment failure to top the list is "transformers", with 123 failures and 5,792,935 CMI. Most notably, there were problems with transformers at the Florida Substation in 2019, resulting in very high CMI. This category of "transformer" seems to include both overhead pole mounted transformers and substation transformers. Table 2.4-I provides a list of equipment failure types that operating personnel use to describe an outage. There are subcategories for pad-mounted transformers, subsurface transformers, and transclosures. But power transformers (a/k/a substation transformers) and overhead transformers seem to be lumped together. Pepco noted this in its analysis of the transformer failures and identified other power transformers that had issues similar to the transformers at the Florida Substation. It seems reasonable, and OPC recommends, Pepco track power transformer outages separate from overhead transformer outages.

Z. <u>Overhead Transformer Outages</u>

Regarding overhead transformer outages, the statistics show a marked increase of the number of failures from 57 units in 2017, to 66 units in 2018, to 116 units in 2019. This marked increase could be due to any number of contributing factors. However, Pepco only focused its analysis on identifying the power transformer failures; the Company neglected to comment on the increasing trend of overhead transformer failures. Pepco should be directed to provide an analysis regarding the near doubling of overhead transformer failures.

AA. Florida Substation

On November 1, 2019, Pepco filed a root cause investigative report regarding the failure of the load tap changer ("LTC") at the Florida Substation. Pepco's investigative report identified 24 LTCs whose service health was considered a high or medium priority. Pepco estimated the time to repair was twenty months. Order No. 16975 directs Pepco to report on efforts to reduce equipment failures in Consolidated Reports. Pepco should be directed to summarize the current plans and efforts to reduce failures of LTCs in power transformers. Specifically, Pepco should report the status of the repair efforts and the projected schedule for completing such repairs.

BB. Cable Failures

Pepco notes cable failures are the number-one cause of equipment outages and provides discussion on four cable failure events that had significant impact on CMI. In addition, Pepco discussed another nine events causing the largest customer impacts. However, Pepco offers no plans for corrective actions based on this analysis other than the standard statement of "cables are selected for remediation based on outage history and repeat outages on section of cables or repeat outages in neighborhoods."[80] There is no discussion about whether the failed cables are PILC Cables, PAC Cables, or EPR insulated cables. Nor is there any discussion centering around significant cable replacement for the thirteen events discussed in Pepco's analysis. Further, Pepco performs VLC cable testing, and there is no indication if this testing factors into the decision to replace cables. As stated earlier, Order No. 16975 directs Pepco to report on efforts to reduce equipment failures. However, the Company's stated remediation efforts based on outage history do not meet that directive. Accordingly, OPC recommends that Pepco provide information on efforts to reduce cable failures by cable type.

[80] *PEPACR 2020-01*, 2020 ACR p. 186.

CC. PILC Cable Replacement Strategy

In Table 3.2 of the 2019 ACR, Pepco reports the opportunistic PILC replacements for 2018 were 13.5 miles.[81] In OPC's Comments on the 2019 ACR, OPC noted that the 13.5 miles of PILC cable replaced was a significant increase over prior years.[82] Pepco's reply comments stated that the increase is modestly higher than average.[83] The 10 year average PILC replacement was 4.5 miles per year.

In the current 2020 ACR, Table 3.2 shows only 9.5 miles of cable replacement which is a very significant change considering the cost per mile to replace PILC cable. The 2016 Siemens investigative report indicated the miles of PILC cable replaced was 8.94 miles.[84] OPC recommends the Commission direct Pepco to explain this discrepancy and describe what financial impacts this correction may have.

Pepco's PILC Replacement Strategy is in line with other electric utilities and is based on seeking opportunistic replacements based on conductions, which the Company expects to be a cost-effective replacement strategy.[85] This strategy has been in place since 2012. Commission engaged Siemens PTI to annually prepare an investigation of the manhole incidents and explosions occurring in and around the underground distribution system of Pepco. In fact, there are now 13 such reports filed with the Commission. Siemens has been critical of Pepco's PILC replacement

[81] *PEPACR 2019-01*, 2019 ACR, p. 220.

[82] *PEPACR 2019-01,* Initial Comments of the Office of the People's Counsel for the District of Columbia Regarding Pepco's 2019 Annual Consolidated Report, pp. 9 and 29, filed June 18, 2019.

[83] *PEPACR2019-01 and Formal Case No. 1119,* Pepco's Reply Comments, p. 8, filed July 16, 2019 ("2019 Pepco Reply Comments").

[84] *PEPMIR2019-01,* Investigation of the Manhole Incidents and Explosions Occurring in and Around the Underground Distribution System of the Potomac Electric Power Company: Thirteenth Year Technical Audit, Siemens PTI Report No. R224.18 ("Siemens 2019 Report"), dated January 18, 2019, p. 2-13.

[85] *PEPACR 2020-01*, 2020 ACR, p. 221.

program beginning with the 2016 investigative report "it is our continued opinion that Pepco's opportunistic approach to PILC replacement does not enhance PILC replacement rates."[86] Pepco's reply comments stated, "Pepco does not believe that it is either cost-effective or necessary to adopt a pre-determined replacement project for PILC, one which would likely cost billions of dollars and would require a special funding mechanism for cost recovery through rates."[87] The Commission has not directed Pepco to increase PILC cable replacement as repeatedly recommended by Siemens. However, Pepco has changed its strategy for replacement of PILC cable although this is not reported in the Annual Consolidated Reports.

During 2018, Pepco initiated a planned program of replacing longer sections of PILC with EPR cable with the aim of reducing the number of transition joints. OPC notes this change in strategy has resulted in an increase in PILC cable replacements. Pepco has not identified transition joints as being an issue for system reliability and increasing the footage of PILC to be replaced specifically to reduce the number of joints has not been justified by any study. OPC recommends the Commission direct Pepco to provide an analysis of the transition joint failures and the cost of expanding the PILC cable replacement program to reduce the number of such joints.

Further, OPC is disappointed that Pepco made this change in an extremely expensive program (roughly $400,000 per mile of PILC cable replaced) without even acknowledging the change in the 2019 nor 2020 Annual Consolidated Reports. Further Pepco did not mention this change in strategy in its reply comments to OPC's comments regarding the 2019 ACR. Pepco stated:

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[86] *PEPMIR2016-01,* Investigation of the Manhole Incidents and Explosions Occurring in and Around the Underground Distribution System of the Potomac Electric Power Company: Tenth Year Technical Audit, Siemens PTI Project Number 62OT-001273 ("Siemens 2016 Report"), dated March 31, 2016, p. 2-10.

[87] *PSCMIR-2016-01,* Pepco Comments on Siemens PTI Final Report filed July 13, in Case No. 991, p. 2, filed August 12, 2016.

"the total amount of PILC replacement is comprised of planned and "opportunistic" replacement, the latter which is replacement of PILC that is performed when conditions or events occur that allow for an efficient replacement of the older cables."[88]

OPC believes Pepco has a duty to honestly and timely report information to stakeholders and instances of non-reporting or underreporting such as this erode confidence in Pepco's reporting.

DD. <u>Manhole Inspections</u>

The 2019 ACR, Pepco reports that secondary cables and their accessories are more likely to fail due to a breach in the insulation.[89] Pepco analyzed the type of insulation involved in secondary cable and joint failures resulting in a reportable event for secondary equipment and found no discernible trend.[90] OPC notes that in 2014, Pepco fully implemented the molded rubber splicing technology.[91] Siemens reported taping (using hand applied tapes) is still the customary practice used for existing secondary splices.[92] The concern of course is the quality and integrity of a hand taped secondary splice is dependent on the craftsmanship of the splice. Pepco has a standard calling for the use of pre-molded secondary joints.[93]

OPC understands that there are two distinctly separate types of secondary failures; secondary cable insulation failure and secondary joint failure. The data reported in the ACR is a combination of cable and joint failures. OPC recommends that Pepco present data and/or trends

[88] 2019 Pepco Reply Comments, p. 8.

[89] *PEPACR 2020-01*, 2020 ACR, p. 230.

[90] *PEPACR 2020-01*, 2020 ACR, p. 236.

[91] *PEPMIR2015-01*, Investigation of the Manhole Incidents and Explosions Occurring in and Around the Underground Distribution System of the Potomac Electric Power Company: Ninth Year Technical Audit, Siemens PTI Project Number Pl21-11384 ("Siemens 2015 Report"), dated December 23, 2014, p. xxiv.

[92] *PSCMIR-2016-01*, Pepco Comments on Siemens PTI Final Report filed July 13, in Case No. 991, p. xy, filed August 12, 2016.

[93] *Id*., p. 4. *See also* Siemens DR 1-3, Attachments 1 and 2.

related to secondary failures separated by type of cable failures and joint failures. Further, Pepco now has over 5 years' experience with the pre-molded secondary joints. OPC requests that Pepco provide feedback on the performance of these joints especially relative to the reportable outage events.

EE. Slotted Manhole Covers

In reference to Order 16975 dated November 2012, Commission staff were unclear whether Pepco exhausted locations in the District where slotted manhole covers could be installed in order to maximize it benefits. As a result, Pepco was directed to revisit criteria used from selected locations for installing slotted manhole cover in its 2013 Annual Consolidate Report. Pepco continued to install slotted manhole covers in areas with high load growth and potential business development, however the last year installation of slotted manhole covers was reported in the District was 2016. OPC does not agree with Pepco's statement that the rate of manhole events on manhole with slotted covers is disproportional to its total population on the system. Although slotted manhole covers account for 13% of manholes within the system, Pepco has consistently reported that slotted covers account for 30-35% of the of the total manhole events each year from 2014 through 2019.

In the 2019 ACR, Pepco stated all Exelon utilities have aligned on a new design for vented manholes covers. These new covers are fully Americans with Disabilities Act ("ADA") compliant and a deployment strategy is currently being developed for these new manholes covers.[94] At the May 2019 PIWG meeting, Pepco reported that work was being done on testing and deployment guides.[95] In the 2020 ACR, Pepco reported a deployment strategy is currently being developed

[94] *PEPACR 2019-01*, 2019 ACR, p. 242.

[95] *Formal Case No. 766*, PIWG Minutes for May 8, 2019, filed May 16, 2019.

for these new manholes covers, with the initial plan to only use these covers on new construction jobs located in non-roadway applications.[96] Plans of this deployment are to be shared at a future PIWG meeting; OPC recommends that a comprehensive update be shared in 2020.

IV. CONCLUSION

WHEREFORE, the Office of the People's Counsel respectfully requests the Commission accept these *Initial Comments* and adopt the recommendations set forth herein.

Respectfully submitted,

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[96] *PEPACR 2020-01*, 2020 ACR, p. 245.

CERTIFICATE OF SERVICE

PEPACR-2020-01, In the Matter of the Annual Consolidated Report of Potomac Electric Power Company

Formal Case No. 1119, In the Matter of the Joint Application of Exelon Corporation, Pepco Holdings, Inc., Potomac Electric Power Company, Exelon Energy Delivery Company, LLC, and New Special Purpose Entity, LLC for Authorization and Approval of Proposed Merger Transaction

I certify that on June 29, 2020, a copy of the *Office of the People's Counsel's Initial Comments Regarding Pepco's 2020 Consolidated Report* was served on the following parties of record by hand delivery, first class mail, postage prepaid or electronic mail:

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