RECEIVED 2019 AUG 9 5:03 PM (E)

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA
1325 G STREET, N.W., SUITE 800
WASHINGTON, D.C. 20005

ORDER

August 9, 2019

FORMAL CASE NO. 1144, IN THE MATTER 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), Order No. 20203

Before the Commission:

Willie L. Phillips, Chairman
Richard Beverly, Commissioner
Greer Gillis, Commissioner

SUMMARY

1. The Commission is statutorily required to ensure that every public utility doing business within the District of Columbia furnishes service and facilities reasonably safe and adequate, and in all respects, just and reasonable. In this Order, the Commission is considering Phase I of the Potomac Electric Power Company's ("Pepco") Capital Grid Notice of Construction ("NOC" or Phase I of the Capital Grid Project"). Phase I of the Capital Grid Project includes rebuilding the Harvard Substation, rebuilding and repurposing the Champlain Substation as a sub-transmission substation, constructing two 230 kV, networked underground transmission lines totaling 10 miles in length, and converting the Waterfront Substation to a 230 kV substation.

2. Section 2111 of Title 15 of the District of Columbia Municipal Regulations (DCMR) sets forth the requirements for a Notice of Construction ("NOC") for underground transmission lines that will exceed 69,000 volts and construction activity concerning substations to be connected to those lines.[1] In reviewing an interested person's petition related to a NOC filing, the Commission must investigate the reasonableness, safety, and need for the underground transmission line or substation.[2] After reviewing Phase I of Pepco's Capital Grid Application and the comments received, the Commission finds that Pepco addressed individually all regulatory requirements of a NOC filing as set forth in Commission Rule 2111, provided all of the additional information requested in Order No. 19274 related to Phase I, and considered the requirements of the CleanEnergy DC Omnibus Amendment Act of 2018.[3] As explained in this Order, we find that Pepco has sufficiently demonstrated the reasonableness, safety and need for Phase I of the Capital Grid Project, which is designed to replace aging infrastructure and support the reliable operation of the District's power system.

3. While this Order approves Phase 1 of Pepco's Capital Grid Project to address aging infrastructure, the Commission recognizes that thousands of Pepco customers experienced service outages on July 27, 2019, caused by a transformer failure at the Florida Avenue Substation. The Commissioners visited the Substation on August 1, 2019, to learn more about the cause of the failure and steps Pepco is taking to prevent future similar outages. We will continue to follow up to ensure that the Company thoroughly investigates and identifies the root cause of this outage and implements appropriate and sustainable corrective actions to help prevent similar outages.

4. Phase I excludes the proposed construction of the Mt. Vernon Substation. Our approval of Phase I of the Capital Grid Project does not depend upon any future assessment of whether the proposed Mt. Vernon Substation is needed, not needed, or can be deferred. The Commission will consider Pepco's Mt. Vernon Substation separately in

---

[1] 15 DCMR § 2111 (2004).

[2] 15 DCMR § 2111.4 (2004).

[3] CleanEnergy DC Omnibus Amendment Act of 2018, D.C. Law 22-257, effective March 22, 2019; codified as D.C. Code § 34-808.02 (Supp. 2019).

Phase II of its review. Therefore, construction for Phase I can proceed pursuant to permits received by Pepco from other District of Columbia agencies. With respect to Phase II of Pepco's Capital Grid Project, the Commission appreciates the complexities of the issues brought to our attention at this time by Pepco and commenters. Therefore, we will hold a status conference to consider the process to be followed for reviewing Phase II, during the first quarter of Fiscal Year 2020 and issue a procedural schedule thereafter.

Table of Contents

I. INTRODUCTION

1. By this Order, the Public Service Commission of the District of Columbia ("Commission") finds that the Potomac Electric Power Company ("Pepco" or "Company") has sufficiently demonstrated the reasonableness, safety, and need for Phase I of the Capital Grid Project Notice of Construction, which is designed to replace aging infrastructure. Phase I of the Capital Grid Project includes rebuilding the Harvard Substation and rebuilding and repurposing Champlain as a sub-transmission substation, constructing 10 miles of two 230 kV, networked underground transmission lines and converting the Waterfront Substation to a 230 kV substation. Phase I also addresses the requirements established by the CleanEnergy DC Omnibus Amendment Act of 2018.[4] In connection with Phase I approval, Pepco is directed to complete actions and report to the Commission, as outlined in Attachment A to this Order. Therefore, construction of Phase I of the Capital Grid Project can proceed pursuant to permits received by Pepco from other District of Columbia agencies.

II. BACKGROUND

2. On May 10, 2017, Pepco filed the first of two Notices of Construction ("NOC") with the Commission seeking approval of the first part of its Capital Grid Project.[5] Specifically, under the first NOC, NOC-1, Pepco proposed to construct two 230 kV underground transmission lines from the Takoma Substation to the rebuilt Harvard Substation and from the rebuilt Harvard Substation to the rebuilt Champlain Substation that is being repurposed as a sub-transmission substation.[6] Pepco indicated that its subsequent NOC-2 would include a new load-driven substation in the Mt. Vernon Triangle as well as completion of the 230 kV underground circuits.[7] Also, Pepco represented that the proposed substation upgrades would accommodate more distributed energy resources ("DERs").[8] By Order No. 19274, the Commission determined that a review of the purported overall reliability and resiliency benefits of the project necessitates a holistic view of Pepco's entire Capital Grid Project, incorporating the two interconnected NOC-1 and NOC-2 projects.[9] Pepco was directed to refile its NOC-1, combined with NOC-2, as

---

4 D.C. Code § 34-808.02 (Supp. 2019).

5 *Formal Case No. 1144, In the Matter 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"),* Potomac Electric Power Company's Formal Notice of Construction of the Capital Grid Project, filed May 10, 2017 ("Pepco's NOC-1").

6 *Formal Case No. 1144*, Pepco's NOC-1 at 1.

7 *Formal Case No. 1144*, Pepco's NOC-1 at 1.

8 *Formal Case No. 1144*, Pepco's NOC-1 at 3.

9 *Formal Case No. 1144*, Order No. 19274, ¶ 1, rel. February 14, 2019 ("Order No. 19274"). NOC-2 was not filed with the Commission separately. Also, in Order No. 19274, the Commission held in abeyance

a single new comprehensive Capital Grid Application and provide all of the information set forth in the Order and Attachment A of the Order.[10] Attachment A required Pepco to analyze a robust set of technical options and alternatives for its proposal, including feasibility and estimated costs. Interested persons were invited to provide comments and reply comments.[11]

3. Pursuant to Order No. 19274, on June 29, 2018, Pepco filed its new comprehensive Capital Grid Application.[12] Interested persons were invited to comment on the Company's Application.[13] Subsequently, Pepco filed a confidential Errata to its "Quanta Report" that was included in its Capital Grid Application explaining that it had incorrectly included some deferral costs in its calculation of the Mt. Vernon Substation cost that should not have been included.[14] Following an initial analysis of the entire record, including Pepco's responses to Staff Data Requests, by Order No. 19886, the Commission bifurcated its review of Pepco's Capital Grid Project into two phases.[15] Phase I, which is the subject of this Order, addresses the portion of Pepco's Capital Grid Application that includes modifications to the existing Harvard and Champlain substations, and construction of 10 miles of two networked 230 kV underground transmission lines supplying these stations, extending up to Waterfront Substation. Phase II of the Commission's review will focus on the proposed construction of the new Mt. Vernon Substation which is not the subject of this Order.[16] The Commission will hold a status conference on the process for Phase II during the first quarter of Fiscal Year 2020 and issue a procedural schedule thereafter.[17]

---

the Office of the People's Counsel of the District of Columbia's request for an evidentiary hearing and the requests for intervention status until Pepco submitted its single new comprehensive Capital Grid Application. *See also, Formal Case No. 1144*, Order No. 19274, ¶ 20.

[10] *Formal Case No. 1144*, Order No. 19274, ¶ 12-14. Order No. 19274, required Pepco, among other things, to analyze several alternatives to the use of 230 kV transmission lines.

[11] *Formal Case No. 1144*, Order No. 19274, ¶ 19.

[12] *Formal Case No. 1144*, The Potomac Electric Power Company's Formal Notice of Construction of the Capital Grid Project Pursuant to Order No. 19274, filed June 29, 2018 ("Pepco's Capital Grid Application").

[13] 65 *D.C. Reg.* 007618-007621 (July 20, 2018). The initial Comments were due on September 27, 2018, replies due on October 29, 2018. *Formal Case No. 1144*, Uncontested Motion of the District of Columbia Government for Enlargement of Time to File Reply Comments, filed October 16, 2018; *See* Order No. 19727, rel. October 24, 2018.

[14] *Formal Case No. 1144*, Potomac Electric Power Company's Errata to the Study Performed by Quanta Technology filed as Appendix F to the Notice of Construction ("Errata"), filed October 30, 2018. This document is confidential.

[15] *Formal Case No. 1144,* Order No. 19886, rel. April 5, 2019 ("Order No. 19886").

[16] *Formal Case No. 1144,* Order No. 19886, ¶¶ 3-5.

[17] The Commission is aware that to meet Pepco's proposed 2023 in-service date for the Mt. Vernon Substation, Pepco needs to begin construction in January 2020. However, given the complexities of Pepco's

III. CAPITAL GRID PROJECT, PHASE I

4. In its Capital Grid Application, Pepco includes a discussion of the following requirements of 15 DCMR § 2111:

(a) The name and address of the principal place of business of the electric corporation;

(b) The name, title, and address of the person authorized to receive notices and communications with respect to the application;

(c) The location or locations where the public may inspect or obtain a copy of the application;

(d) A list of each District of Columbia, state, or federal government agency having authority to approve or disapprove the construction or operation of the project and containing the following:

(1) A statement indicating whether the necessary approval from each agency has been obtained, with a copy of each approval or disapproval attached;

(2) A statement indicating the circumstances under which any necessary approval has not been obtained; and

(3) A statement indicating whether any waiver or variance has been requested, with a copy of each approval or disapproval attached.

(e) The proposed date construction is to be initiated;

(f) The need for the underground transmission line or substation;

(g) The Type and voltage level(s) of the underground transmission line or substation;

(h) Property or property right acquired or to be acquired;

(i) Location of the proposed construction, including affected streets by name;

(j) Duration of the proposed construction;

(k) Impact of the proposed project on affected neighborhood and community; and

---

Mt. Vernon Substation proposal, the Commission will evaluate Phase II thoroughly before rendering a decision. See Pepco's Capital Grid Application at vii, 2.

(l) Possible mitigating measures which could be employed to minimize impact upon the affected neighborhood community. [18]

5. According to Pepco, the entire Capital Grid Project represents a long-term plan addressing the distribution system's resiliency, reliability, and modernization needs and, as proposed, construction of the project will run from February 2019 through June 2026.[19] Pepco estimates the cost of the entire multi-state project, including the proposed Mt. Vernon Substation, to reach approximately $851 million; when the proposed Mt. Vernon Substation is excluded, the total cost decreases to $707 million.[20]

6. The Company estimates the cumulative economic benefits for the District of Columbia from the entire Capital Grid Project to be the equivalent of one year of full-time employment for 766 people, labor income of about $63.4 million, and gross domestic product value added of about $85.7 million.[21]

7. Phase I of the Capital Grid Project involves rebuilding two existing substations, Harvard and Champlain substations, re-purposing Champlain as a sub-transmission Substation, re-supplying Harvard and Champlain substations, and constructing approximately 10 miles of two 230 kV underground transmission lines.[22] Pepco is also seeking authorization to pull cable through the conduit previously authorized by the Commission in Order No. 18254 to allow it to convert the existing Waterfront

---

[18] Pursuant to 15 DCMR § 2111.1 (2004), "An electric corporation which plans to construct inside the District of Columbia an underground transmission line in excess of sixty-nine thousand (69,000) volts, or substation connected to such line, shall file formal notice with the Commission six (6) months prior to the construction."

[19] *Formal Case No. 1144*, Pepco's Capital Grid Application at v.

[20] *Formal Case No. 1144*, Pepco's Capital Grid Application at 25. *See also*, Pepco's Follow-Up Response to Commission Staff's Data Request No. 7-1, dated January 8, 2019. Based on data provided by Pepco, the District's share of the overall cost is estimated at about $368 million after the cost of the Mt. Vernon Substation is excluded. Of this amount, $211 million will be recovered from District ratepayers through formula transmission rates approved by the Federal Energy Regulatory Commission, while $157 million in distribution investment will be recovered from District ratepayers through distribution rates over a period of up to 65 years, if approved by the Commission. The Commission notes that annual carrying charges associated with this $157 million include depreciation, rate of return, and taxes. Cost recovery for this distribution investment will begin after a future base rate case and after the assets are placed into service and become used and useful. *See Formal Case No. 1144*, Pepco's Follow-Up Response to Commission Staff's Data Request No. 7-1, dated January 8, 2019.

[21] *Formal Case No. 1144*, Pepco's Capital Grid Application at xi-xii.

[22] *Formal Case No. 1144*, Pepco's Capital Grid Application at v.

Substation to a 230 kV substation.[23] The work associated with Phase I is scheduled for completion by 2026.[24]

8. Pepco maintains that construction of the project will increase the reliability of the entire electric system in the District by providing a "networked" supply to substations and by ensuring compliance with the North American Reliability Corporation's reliability requirements for N-1-1 contingency situations.[25] The networked transmission system is expected to provide a more reliable supply to the rebuilt Harvard and the rebuilt and repurposed Champlain Substation as well as other downtown substations.[26]

9. The Harvard Substation was initially built in 1907 and was refurbished several times in the mid-1960s. The 34 kV supplies to this Substation were constructed in the 1940s, many of its air circuit breakers were installed in 1960 and 1976, and its transformers were put in place in 1960 and 1961.[27] According to the Company, maintenance of the Harvard Substation has cost about $340,000 since 2009.[28] As a result, Pepco is proposing to rebuild the Harvard Substation and replace it with a high-capacity, permanent 230 kV/13 kV substation. After the rebuild is complete in 2022, the entire load currently supplied from the Harvard Substation and the partial loads supplied by Champlain and Florida Avenue substations will be supplied from the Harvard Substation.[29] Initially, the rebuilt Harvard Substation will have 140 Mega Volt Ampere ("MVA") firm capacity but the capacity could be increased to 210 MVA if needed.[30] The Company believes the rebuilt Harvard Substation will open up capacity for load transfers from other substations and provide increased distribution capacity to the Columbia Heights and Adams Morgan areas of the city.[31]

---

[23] *See Formal Case No. 1136, In the Matter of the Potomac Electric Company's Notice to Construct Two 230kV Underground Transmission Circuits on Buzzard Point in Southwest District of Columbia ("Formal Case No. 1136")*, Order No. 18254, rel. June 24, 2016 ("Order No. 18254").

[24] *Formal Case No. 1144*, Pepco's Capital Grid Application at 25. *See also,* Pepco's Follow-Up Response to Commission Staff's Data Request No. 7-1, dated January 8, 2019.

[25] *Formal Case No. 1144*, Pepco's Capital Grid Application at 3. The N-1-1 contingency is a sequence of events on the electrical grid consisting of the initial loss of a single generator or transmission component, followed by system adjustments, followed by another loss of a single generator or transmission component.

[26] *Formal Case No. 1144*, Pepco's Capital Grid Application at 48-49.

[27] *Formal Case No. 1144*, Pepco's Capital Grid Application at 3.

[28] *Formal Case No. 1144*, Pepco's Capital Grid Application at 3.

[29] *Formal Case No. 1144*, Pepco's Capital Grid Application at 3-4. In a Data Response, Pepco has also explained that some Florida Avenue Substation load will be transferred to the Harvard Substation, and some Champlain Substation load will be transferred to Florida Avenue Substation. *See* Pepco's Response to Commssion Staff's Follow-up Data Request No. 4, Question Nos. 4(a) - 4(c), dated May 22, 2019.

[30] *Formal Case No. 1144,* Pepco's Capital Grid Application at 4.

[31] *Formal Case No. 1144,* Pepco's Capital Grid Application at 4.

10. Similarly, the Champlain Substation was put into service in the 1930s and was refurbished in the 1950s. Many of the substation's air circuit breakers were installed in 1960 and 1976, and the transformers were put in place in 1954. Pepco states that corrective maintenance costs at the Champlain Substation have totaled about $406,000 since 2009.[32] The repurposed Champlain Substation will be constructed after its existing load has been transferred to the Florida Avenue Substation and the rebuilt Harvard substations, and therefore the in-service date is expected to be in 2026, four (4) years after the rebuild of the Harvard Substation is completed.[33] Pepco submits that the rebuilt Champlain Substation will be repurposed as a high-capacity, permanent 230 kV/69 kV/34 kV sub-transmission substation with 572 MVA of firm capacity. The rebuilt and repurposed Champlain Substation will allow for the resupply of the L Street Substation with new 34 kV feeders, thus boosting the L Street Substation's firm capacity from 62 MVA to 135 MVA. The rebuilt Champlain Substation will also be used as a future source to resupply 69 kV supplies from the F Street and Georgetown substations.[34]

11. Pepco's proposal also includes replacing the existing aging underground cables supplying the Harvard and Champlain substations, which are approximately 80 and 70 years old respectively.[35] These cables, along with those supplying the F Street, L Street and Georgetown substations are nearing or exceeding their intended useful lives.[36] Pepco states that the cable replacement is part of its long-term plan to resupply the Harvard, Champlain, F Street, L Street and Georgetown substations while minimizing the need to construct new conduit. Most of these currently-installed underground cables are self-contained, fluid-filled ("SCFF") cables that are nearing or exceeding their intended useful life as well as approaching technical and economic obsolescence.[37] Pepco plans to use extruded-dielectric cable systems, namely cross-linked polyethylene ("XLPE")-insulated solid dielectric cables.[38] The Company plans to upgrade the underground distribution lines to Georgetown, F Street, and L Street substations, but this project (hereby referred to as the

---

[32] *Formal Case No. 1144*, Pepco's Capital Grid Application at 4.

[33] *Formal Case No. 1144*, Pepco's Capital Grid Application at 4. Also see, *Formal Case No. 1144*, Pepco's Response to Commission Staff's Follow-Up Data Request No. 4 (a) - 4 (c), dated May 22, 2019.

[34] *Formal Case No. 1144*, Pepco's Capital Grid Application at 4. *See also* Pepco's Response to Commission Staff Data Request No. 14, dated May 7, 2019.

[35] *Formal Case No. 1144*, Pepco's Capital Grid Application at 3-4.

[36] *Formal Case No. 1144*, Pepco's Capital Grid Application at 4.

[37] *Formal Case No. 1144*, Pepco's Capital Grid Application at 3-4. The cables supplying the Harvard and Champlain substations are approximately 80 and 70 years old, respectively. The cables supplying the L, F and Georgetown substations are over 30 years old.

[38] *Formal Case No. 1144*, Pepco's Capital Grid Application at 39.

Downtown Resupply Project) is not part of the Capital Grid Application under review.[39] Specifically, the Downtown Resupply Project consists of 34 kV and 69 kV underground distribution lines to the Georgetown, F Street, and L Street substations.[40] Pepco believes that its proposed configuration reduces the linear footage of duct banks that would have been required otherwise and avoids constructing about 49 miles of new feeders, among other benefits.[41] Pepco explains that cable replacement and the resulting construction of new duct banks have the largest impact on the communities in which construction occurs and the design of the proposed project will minimize the need to construct new conduit at a future date.[42]

12. The Company is also seeking authorization to pull cable through the conduit previously authorized by the Commission in Order No. 18254 to allow it to convert the existing Waterfront Substation to a 230 kV substation in 2020.[43] Pepco states that specifically, the Waterfront Substation will be converted from its current 138 kV radial supply configuration to a 230 kV network configuration in 2020 using two underground conduits that were described in the Buzzard Point to Waterfront 230 kV lines NOC in *Formal Case No. 1136*.[44] According to Pepco, the 230 kV transmission lines are necessary to allow for reconfiguration of the aging Buzzard Point 230 kV Station B to improve reliability as well as allow the Waterfront Substation to operate at its full capacity.[45] The Company submits that "these transmission lines will also provide transmission capacity to supply the substations planned for the Capital Grid Project."[46] Pepco states that "other than the transmission lines used for the Waterfront Substation conversion, the Capital Grid Project does not require the completion of any non-Capital Grid Project transmission projects."[47]

13. Pepco admits that the Capital Grid Project will cause temporary disturbance and traffic/parking restrictions associated with the construction activities, but it commits

---

39 *Formal Case No. 1144*, Pepco's Capital Grid Application at 5.

40 *Formal Case No. 1144*, Pepco's Capital Grid Application at 5.

41 *Formal Case No. 1144*, Pepco's Capital Grid Application at 6-7. "Duct" is a single enclosed runway for conductors or cable. "Duct bank" is an arrangement of conduit providing one or more continuous ducts between two points. *See Formal Case No. 1144*, Pepco's Capital Grid Application at 58.

42 *Formal Case No. 1144*, Pepco's Capital Grid Application at 7.

43 *Formal Case No. 1144*, Pepco's Capital Grid Application at v-vi;18. *See generally, Formal Case No. 1136,* Order No. 18254.

44 *Formal Case No. 1144*, Pepco's Capital Grid Application at 18.

45 *Formal Case No. 1144*, Pepco's Capital Grid Application at 18.

46 *Formal Case No. 1144*, Pepco's Capital Grid Application at 19.

47 *Formal Case No. 1144*, Pepco's Capital Grid Application at 19.

to take all necessary measures to minimize the temporary impacts by various means, including compliance with approved traffic-control plans, staggering construction activities to minimize the impact on any one area at a given time, and conducting community outreach among other measures.[48]

14. Pepco also discusses the potential floodplain risk associated with the Capital Grid Project and based on its analysis, finds that only minimal and very localized risk exists.[49] Pepco asserts that neither a 100-year nor a 500-year flood would cause an interruption of service if the project is completed as designed.[50] Relying on the Federal Emergency Management Agency's Flood Insurance Rate Map Data, Pepco reports that only the southern portions of the Capital Grid Project, located between the proposed Mt. Vernon and the Waterfront substations are impacted by a 100-year floodplain.[51] Regarding the more extensive 500-year floodplain, Pepco reports that "[a] very small portion of 500-year floodplain intersects the location of the new Waterfront Substation, at the intersection of R and Second Streets, SW."[52]

15. Finally, as a part of the Company's explanation of the impact of its application upon the environment, Pepco addresses the electromagnetic fields ("EMF") that emanate from the equipment within the substation and their potential effects. Pepco states that "[f]or efficient operation, substations are designed to contain the magnetic fields from equipment within the substation (the electric field will be blocked by the surrounding enclosure)."[53] The Company states that the magnetic fields from the proposed substations will be even lower than standard substations of open design because of their compact, gas-insulated equipment within the substation.[54] According to Pepco, underground transmission lines connecting to substations are very weak sources of magnetic fields above ground and that the electric field will be totally blocked by the coverings of the underground transmission lines and the earth itself.[55]

---

48 *Formal Case No. 1144*, Pepco's Capital Grid Application at 23-24.

49 *Formal Case No. 1144*, Pepco's Capital Grid Application at 41-42.

50 *Formal Case No. 1144*, Pepco's Response to Commission Staff's Data Request No. 11, dated March 29, 2019.

51 *Formal Case No. 1144*, Pepco's Capital Grid Application at 41.

52 *Formal Case No. 1144*, Pepco's Capital Grid Application at 41.

53 *Formal Case No. 1144*, Pepco's Capital Grid Application at 54.

54 *Formal Case No. 1144*, Pepco's Capital Grid Application at 54.

55 *Formal Case No. 1144*, Pepco's Capital Grid Application at 54, Appendix M at 3-56;3-58.

IV. COMMENTS

16. Some initial commenters support the Capital Grid Project in its entirety, while others are specifically opposing either the construction of the Mt. Vernon Substation or the whole project. The majority of the commenters focused on whether the Mt. Vernon Substation and associated transmission lines are needed. This Order considers Pepco's Capital Grid Application and all comments concerning Phase I of Pepco's Capital Grid Project.

17. Several individuals and community-based organizations support reliability improvements to the electric grid. The District Bridges, Georgia Avenue Community Development Task Force, Development Corporation of Columbia Heights, and Pleasant Plains Civic Association collectively support Pepco's proposal, and argue that it "addresses multiple needs including upgrading aging infrastructure, increasing the capacity of the system and networking the system to meet the needs of the community and growing businesses in the future."[56] Venita Phillips, a Ward 5 resident, states that "[i]t is an absolute necessity that Pepco be approved to build the substations needed to increase the reliability of the electrical system in the nation's capital."[57] The Federal City Council, McKissack and McKissack, the and Advisory Neighborhood Commission 2C, among others, have each expressed their support for enhanced reliability, resiliency, efficiency, and economic growth associated with a large-scale project like Pepco's Capital Grid Project.[58]

18. The United States General Services Administration ("GSA") does not take a position for or against Pepco's proposal but states that "Pepco has not shown that all components of the Capital Grid Project are necessary and that the project as a whole is the most cost-effective approach to address the District's reliability and load growth needs."[59] However, GSA further states that "a strong and reliable backbone electric system is vital to the federal facilities in the District," and "we appreciate Pepco's willingness to undertake modernization, strengthening and enhancement of the system."[60] GSA also contends that "it recognizes that Pepco must "replace aging infrastructure and address load growth as necessary, and that Pepco bears ultimate responsibility for the performance and reliability

---

56 *Formal Case No. 1144*, District Bridges, Georgia Avenue Community Development Task Force, Development Corporation of Columbia Heights, and Pleasant Plains Civic Association Comments, filed July 2, 2018.

57 *Formal Case No. 1144*, Initial Comments of Resident Venita Phillips, filed June 29, 2018.

58 *Formal Case No. 1144*, Federal City Council's Comments, filed July 3, 2018; McKissack & McKissack's Comments, filed July 5, 2018; and Government of the District of Columbia Advisory Neighborhood Commission 2C Comments, filed July 26, 2018.

59 *Formal Case No. 1144*, United States General Services Administration's Comments at 4, filed September 27, 2018 ("GSA's Amended Comments").

60 *Formal Case No. 1144*, United States General Services Administration's Comments at 5, filed August 31, 2017 ("GSA Initial Comments").

of its system."[61] GSA urges the Commission to further consider the cost and rate impacts of the Capital Grid Project, and the transmission/distribution breakdown of the projected costs, and that Pepco provides little detail on the need and cost of the Downtown Resupply Project.[62]

19. The Office of the People's Counsel ("OPC") opposes Pepco's proposal in its entirety, mainly questioning Pepco's load growth forecast and whether Pepco considered alternative solutions, that accomplish the same goals but are less expensive. According to OPC, "the reasonableness of the CGP [Capital Grid Project] and resultant 230 kV loop in the District are directly tied to the load growth assumptions Pepco relies upon to support the Mt. Vernon Substation and whether there are more cost-effective solutions to reliably serve that projected load growth."[63] OPC argues that the load forecasts that Pepco relies on are "unreliable and significantly overstate the load growth in the Mt. Vernon Triangle/NoMa areas of the District."[64] OPC recognizes that "Pepco has identified some aging facilities the Company likely will need to begin to replace in the foreseeable future" but believes that "[t]he eventual need for these required upgrades, however, does not justify the massive capital investment that would be incurred if the CGP [Capital Grid Project] were approved."[65] OPC offers several alternative solutions to the reliability issues presented by Pepco. OPC's Consultant, Kevin Mara, argues that there are viable alternative solutions to Pepco's proposal that "accomplish the goals of addressing the aging infrastructure issues at Champlain and Harvard Substations while also providing capacity to serve load growth in the areas that the CGP proposed to serve by the Mt. Vernon Substation, *i.e.* the Mt. Vernon Triangle, NoMa, Capitol Crossing, and Northwest One areas."[66] According to Mara, his "138 kV Alternative" solution "leverages the existing excess capacity in the 138 kV facilities already present in the District and is $200 million less costly than the CPG [Capital Grid Project]"[67] OPC's Consultant also asserts that "Pepco has failed to justify the need for the Capital Grid Project based on load forecasts at the substation level as directed by Order No. 19274."[68] OPC asserts that Pepco has failed to present the Commission with the full picture of the costs of the Capital Grid Project and

---

61 *Formal Case No. 1144*, GSA Initial Comments at 5.

62 *Formal Case No. 1144,* GSA's Initial Comments at 4-10.

63 *Formal Case No. 1144*, Office of the People's Counsel's Comments at 3, filed September 27, 2018 ("OPC's Initial Comments").

64 *Formal Case No. 1144,* OPC's Initial Comments at 3-4.

65 *Formal Case No. 1144*, OPC's Initial Comments at 3.

66 *Formal Case No. 1144,* OPC's Initial Comments, Kevin Mara Affidavit ("Mara") at 25-26. The details of Kevin Mara's alternative proposals are included in the confidential version of OPC's Initial Comments.

67 *Formal Case No. 1144,* OPC's Initial Comments, Mara at 26.

68 *Formal Case No. 1144,* OPC's Initial Comments, Mara at 3.

submits that the Capital Grid Project and Downtown Resupply Project should be considered together because Pepco's plans for feeding the downtown area are not fully developed.[69]

20. The D.C. Department of Energy and Environment ("DOEE") asserts that "replace[ment] of aging infrastructure to maintain reliable service at the lowest cost does not accurately describe the Capital Grid, which ends up focusing more on capacity expansion than better load management and improved maintenance."[70] DOEE argues that Pepco has not demonstrated the need to rebuild the Harvard and Champlain substations. DOEE provides extensive analysis and argument in support of its position, as well as some alternative suggestions to specific elements on the project.[71] DOEE states that "[b]ecause the Capital Grid proposes to increase the size of Pepco's distribution system with little factual support regarding load growth, the proposal presents a serious risk of being stranded due to its oversizing."[72]

21. With respect to the Champlain Substation, DOEE does not believe that Pepco's proposal is the least-cost alternative and submits that the proposed size is not justified by future load growth.[73] DOEE argues that the substations to be served from Champlain have not even been identified completely. DOEE disagrees with Pepco's strategy to "reduce future capital costs and accommodate unforeseen future load growth by sizing current plans as large as possible."[74] DOEE argues, among other things, that: 1) the choice of 230 kV lines from the Takoma Substation to the Champlain Substation instead of 138 kV does not make sense, given the lack of load growth in general, and specifically in the areas served by the relevant substations; 2) Pepco should thoroughly investigate alternatives that utilize 138 kV service and achieve a firm capacity that is more in line with actual load; 3) the design choice to use a lower number of larger transformers, rather than more of smaller transformers, results in significant oversizing of the substation; 4) Pepco

---

69 *Formal Case No. 1144,* OPC's Initial Comments, Mara at 5, 35.

70 *Formal Case No. 1144*, Department of Energy and Environment's Comments at 1, filed September 27, 2018 ("DOEE's Initial Comments").

71 *Formal Case No. 1144,* Department of Energy and Environment's Comments and Analysis by Pacific Northwest National Laboratory, filed July 12, 2018. DOEE filed a report entitled, the "Energy Savings Analysis of the Proposed Revision of the Washington D.C. Non-Residential Energy Code," prepared by the Pacific Northwest National Laboratory in December 2017 ("PNNL Report"). DOEE believes that Pepco may be significantly overestimating the energy demand that will result from new construction, especially office buildings and large apartments because Pepco did not consider relevant building code requirements designed to increase energy efficiency and lower demand when considering whether the proposed Mt. Vernon Substation is needed. Pepco filed its Response to DOEE's PNNL Report on September 7, 2018, claiming that the conclusions reached by DOEE are flawed and should be rejected.

72 *Formal Case No. 1144,* DOEE's Initial Comments at 1.

73 *Formal Case No. 1144,* DOEE's Initial Comments at 32.

74 *Formal Case No. 1144,* DOEE's Initial Comments at 32.

does not know what capacity is needed for the Champlain sub-transmission hub and has not decided what substations will be powered by the Champlain hub; 5) the proposed construction costs do not include the costs of serving the downtown substations from the Champlain Substation; and 6) creating a large substation at Champlain to serve downtown areas creates a single point of failure.[75] Also, DOEE comments that since Pepco has not finalized the design of the Downtown Resupply Project, it is impossible to analyze least-cost alternatives for Champlain because its scope of service remains undefined.[76]

22. DOEE challenges the need for the capacity expansion of the Harvard Substation, stating that, "[w]hile outdated equipment at the Harvard Substation certainly needs to be upgraded or replaced, Pepco's proposed plan quintuples the Substation's current capacity from 42 MVA to 210 MVA."[77] DOEE further explains that at 140 MVA, the Harvard Substation will be built at 50% overcapacity, while at 210 MVA, as proposed, it would be at 225% of the actual demand.[78] DOEE claims Pepco has not considered and analyzed lower-cost alternatives and as proposed, the proposal "cannot be considered a prudently incurred expenditure of ratepayer funds."[79]

23. Without commenting on the merits of the project, the Baltimore Washington Construction and Public Employees Laborers' District Council ("BWLDC") asks the Commission to attach certain labor standards to its approval, arguing that oversight is required to assure contractors' compliance with the District's wage and hour laws.[80] BWLDC also urges the Commission to attach local hiring standards to its approval in order to reduce income inequality in the District, and help realize the local economic benefits of the project.[81]

24. Finally, Washington Gas Light Company ("WGL") submitted comments, expressing its concern that a significant portion of its gas main and service lines will be impacted by the underground work associated with the Capital Grid Project.[82] WGL is concerned that the construction work may result in damages to the pipeline facilities and

---

75 *Formal Case No. 1144,* DOEE's Initial Comments at 32-39. A single point of failure refers to a part of a system or network that, if it fails, will stop the entire system from working.

76 *Formal Case No. 1144,* DOEE's Initial Comments at 35.

77 *Formal Case No. 1144,* DOEE's Initial Comments at 39.

78 *Formal Case No. 1144,* DOEE's Initial Comments at 39.

79 *Formal Case No. 1144,* DOEE's Initial Comments at 41.

80 *Formal Case No. 1144,* Baltimore Washington Construction and Public Employees Laborers' District Council Initial Comments at 2, September 28, 2018 ("BWLDC's Initial Comments").

81 *Formal Case No. 1144*, BWLDC's Initial Comments at 2.

82 *Formal Case No. 1144,* Washington Gas Light Company's Comments at 1, filed December 10, 2018 ("WGL's Comments").

associated gas leaks.[83] Therefore, WGL recommends that the Commission direct the affected parties of the project to enter into a Memorandum of Understanding ("MOU"), similar to the one established for Pepco's DC Plug undergrounding project. Alternatively, WGL suggests that the Commission establish a working group to address WGL's concerns.[84]

25. Pepco filed Reply Comments, reiterating the importance of the Capital Grid Project to improve reliability and replace aging infrastructure.[85] Pepco in its December 28, 2018 Reply Comments incorporates by reference its February 1, 2018, Reply Comments filed in connection with its original NOC application.[86] Those comments address the specific concerns raised by OPC, DOEE, and other commenters regarding the Harvard and Champlain substations. Pepco disagrees with the opposition to the project and the alternative solutions suggested by commenters. Pepco restates that its proposal is a long-term project "essential to operation of the reliable system that Pepco alone has the obligation to maintain."[87]

26. Pepco argues that, although some commenters have raised issues with the costs and plans associated with the rebuild of the Harvard and Champlain substations, the rebuilding of these substations is needed to deliver on the District's sustainability requirements and to meet the modernization and reliability expectations of the District, the Commission, and its customers.[88] Also, Pepco states that cost recovery and cost allocation issues are not part of this proceeding.[89]

27. Addressing OPC and DOEE's load forecasting comments, Pepco states while it "provided load forecasts for the Harvard and Champlain substations in the Capital Grid NOC to comply with the directives in Order No. 19274, it did not rely on load forecasting to come to decisions regarding these substations."[90] Pepco submits that "[a]dditional capacity beyond the actual load being transferred to those substations is due

---

83 *Formal Case No. 1144*, WGL's Comments at 1.

84 *Formal Case No. 1144*, WGL's Comments at 2.

85 *Formal Case No. 1144,* Reply Comments of the Potomac Electric Power Company, at 2-7, filed December 28, 2018 ("Pepco's December 28, 2018, Reply Comments") .

86 *Formal Case No. 1144*, Pepco's December 28, 2018 Reply Comments at 85. See Reply Comments of Potomac Electric Power Company, filed February 1, 2018 ("Pepco's February 1, 2018, Reply Comments").

87 *Formal Case No. 1144,* Pepco's February 1, 2018, Reply Comments at 3.

88 *Formal Case No. 1144*, Pepco's December 28, 2018, Reply Comments at 5.

89 *Formal Case No. 1144*, Pepco's December 28, 2018, Reply Comments at 128.

90 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 85, n.336.

to the use of standard designs for the substations, not a forecasting of load."[91] Concerning the rest of DOEE's Comments, the Company submits that while the size of the land area prohibits it from constructing the Champlain Substation using four transformers, Pepco is using the standard 230/69 kV transformers used in other sub-transmission substations, such as the Benning Station A and Potomac River Station.[92] Pepco submits that because it is constructing the rebuilt Champlain Substation on existing land area, it is "saving tens of millions of dollars that would be spent on a new plot of land."[93] Pepco also asserts that by using three standard transformers in the Champlain Substation, it provides some additional capacity for flexibility in planning.[94] The Company argues that this "flexibility allows Pepco to take care of immediate needs (i.e., serving the F Street , L Street, and Georgetown substations) and look for the best use of that additional capacity in the future."[95] With respect to DOEE's "single point of failure" comments related to the Champlain Substation, Pepco responds that the purpose of a sub-transmission substation is to feed multiple distribution substations and that sub-transmission substations are an efficient and cost-effective way to supply distribution substations.[96] The Company states that "[t]heir use reduces the amount of underground sub-transmission infrastructure needed, thereby reducing the construction impact on the communities and reducing the cost."[97] Pepco, submits that [b]y utilizing transmission voltages and bringing the needed capacity to a sub-transmission substation local to the distribution substation it serves, the underground sub-transmission infrastructure needed is significantly reduced.[98]

28. Regarding the relationship between the Capital Grid Project and the Downtown Resupply Project, Pepco states that these projects are separate and can be built independently from one another.[99] The Company submits that the Downtown Resupply Project would be able to continue on with or without the Capital Grid Project.[100] However, Pepco explains that by designing the two together, the Company was able to optimize the configuration and reduce costs.[101] Pepco states, for example, that "the Capital Grid Project

---

91 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 85, n.336.

92 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 86.

93 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 86.

94 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 86-87.

95 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 87.

96 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 88.

97 *Formal Case No. 1144,* Pepco's December 28 ,2018, Reply Comments at 88.

98 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 88.

99 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 105.

100 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 105.

101 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 105.

reduces the amount of underground transmission infrastructure required for the Downtown Resupply Project from approximately 87 miles to approximately 38 miles."[102]

29. Pepco asserts that it would be inappropriate to combine the costs of the two projects for consideration in this NOC as OPC, DOEE and GSA would suggest.[103] According to Pepco, not only did the Company exclude Downtown Resupply costs from the Capital Grid Project costs, but it also excluded them from the alternatives examined in its Capital Grid Application.[104] Pepco asserts that "[t]he Capital Grid Project provides the lasting benefit of bringing capacity to the Champlain Substation, which is in close proximity to the downtown substations, and enables the optimal resupply of the downtown substations and the retirement of their existing supply lines."[105] Pepco determined that it would be inappropriate to combine the projects in this proceeding.[106]

30. Concerning BWLDC's Comments, the Company responds that it already has a successful Capability & Capacity Building ("C&C") Program designed to expand and develop the pool of qualified District of Columbia Certified Business Enterprise ("CBE") contractors.[107] Pepco submits that it will continue to seek and develop the pool of qualified District of Columbia CBE contractors and will continue to seek to engage firms that graduate from the C&C Program for projects, including the Capital Grid Project, to maximize the participation of qualified District CBE's.[108] Pepco commits to tracking both CBE contracting as well as the hiring of District residents by all non-CBE firms throughout the course of the Capital Grid Project.[109]

31. With respect to WGL's Comments, Pepco did not address the issue of an MOU for utility coordination during construction. However, with respect to the establishment of a working group, Pepco indicates that there is no need for a working group because it "has extensive experience working with other utilities, such as DC Water, Verizon, and WGL, to coordinate the construction of projects such as the Capital Grid

---

102 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 106.

103 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 106.

104 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 106.

105 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 107.

106 *Formal Case No. 1144,* Pepco's December 28, 2018, Reply Comments at 107.

107 *Formal Case No. 1144*, Pepco's December 28, 2018, Reply Comments at 127.

108 *Formal Case No. 1144*, Pepco's December 28, 2018, Reply Comments at 127.

109 *Formal Case No. 1144*, Pepco's December 28, 2018, Reply Comments at 128.

Project so as to avoid conflicts that require the relocation of utility facilities where reasonably possible."[110]

V. 15 DCMR § 2111.5 and D.C. Code § 34-808.02

32. Our consideration of the NOC is focused on a determination of whether construction of the proposed substations and transmission lines are reasonable, safe and necessary.[111] To make our determination, Pepco must file a detailed analysis of the information required by 15 DCMR § 2111.5, noted above. Moreover, while we do not determine how costs for these projects will be recovered or allocated to District ratepayers, we do examine the reasonableness of Pepco's proposed capital expenditures in comparison to the capital expenditures for alternative designs proffered by Pepco and the commenters.

33. Further, the CleanEnergy DC Omnibus Amendment Act of 2018 requires the Commission, in supervising and regulating utility or energy companies, to consider "the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, including effects on global climate change and the District's public climate commitments."[112]

VI. DISCUSSION

A. The Need for The Rebuilt Harvard Substation

34. After reviewing the information contained in Pepco's Capital Grid Application and comments, thereto, we find that Pepco's Harvard Substation replacement proposal is in the public interest and is reasonable because the assets are nearing or exceeding their intended useful life. Even though the operating history of the Harvard Substation has been acceptable, we believe outages are likely to increase as the equipment continues to age. Thus, we are convinced that the replacement of the Harvard Substation with new equipment will provide a reliability benefit to customers in the District of Columbia.[113]

35. In our analysis of the planned capacity for the rebuilt Harvard Substation, we are convinced that it is primarily driven by the need to replace aging infrastructure as

---

110 *Formal Case No. 1144*, Pepco's December 28, 2018 Reply Comments at 132.

111 15 DCMR § 2111.5 (2004).

112 *See* D.C. Code § 34-808.02 (Supp. 2019).

113 Pepco indicates that while it is building to the 210 MVA design standard, the substation will initially have the capacity of 140 MVA with the ability to add a fourth transformer to increase the capacity to 210 MVA when needed. *Formal Case No. 1144*, Pepco's February 1, 2018, Reply Comments at 10. The Commission directs Pepco to file in advance its plan and justification supporting the additional fourth transformer at the Harvard Substation, if and when needed.

well as the need to satisfy N-1[114] reliability criteria and Pepco's standard transformer sizing decision. We are not persuaded by OPC's and DOEE's criticisms of the Harvard Substation capacity proposal because the need for the planned capacity of the Harvard Substation is not driven by load growth. As previously stated, in addition to serving the existing load at Harvard Substation, the rebuilt Harvard Substation will serve loads transferred from the Champlain and Florida Avenue substations. Hence, the rebuilt Harvard Substation needs to be sized with a capability to handle these permanent load transfers. Furthermore, substation planning requires that the contingency of losing one of the two transformers is covered by the third transformer during an emergency (N-1 contingency). The Harvard Substation will initially supply 94.2 MVA of load in 2023.[115] Based on Pepco's standard transformer ratings, three transformers are needed to provide 140 MVA firm capacity for an initial load of 94.2 MVA at Harvard Substation. The firm capacity is based on providing N-1 contingency coverage for loss of one of the three transformers, with each transformer having an emergency rating of 70 MVA. We accept Pepco's use of standardized designs for distribution substations and standardized ratings for distribution transformers, as opposed to using the alternative designs and ratings suggested by DOEE and OPC. DOEE and OPC suggest using non-standardized transformers. However, we believe that the standardized approach is reasonable because it results in the ability to procure transformers more quickly and at reduced cost, as well as facilitating a more efficient spare equipment policy.

36. To ensure the system will operate reliably during the transition period when the upgrades are being completed, we direct Pepco to provide the following information within 30 days of the date of this Order: (i) detailed information on the condition of all the existing equipment at the Florida Avenue Substation, including at a minimum, an equipment health index for all the electrical equipment at the Substation such as transformers, breakers, reclosers, relays etc. and the capability of handling the load transfers from the Harvard and Champlain substations; (ii) confirmation and supporting details whether the Florida Avenue Substation will require the completion of any additional maintenance and upgrades, so that it can handle the planned future load transfers from the Harvard and Champlain substations; (iii) the planned timeframe for the load transfer from the existing Harvard Substation to the Florida Avenue Substation, while the Harvard Substation is being rebuilt; and (iv) an alternative load-transfer plan for

---

[114] In this case, "N-1" specifically refers to the distribution and sub-transmission transformers, which must be sized to supply the substation firm capacity with one transformer out of service. The N-1 firm capacity is calculated by summing the transformer emergency ratings for the N-1 condition. For example, for a standard distribution substation with four transformers having 56 MVA normal rating and 70 MVA emergency rating, the firm capacity is 210 MVA (3 x 70 MVA).

[115] *Formal Case No. 1144,* Potomac Electric Power Company's Response to Commission Staff Follow Up to Data Request No. 4-4, dated May 22, 2019.

completing Phase I construction that does not depend on the availability of the Florida Avenue Substation.

B. The Need for The Rebuilt and Repurposed Champlain Substation

37. After reviewing the information contained in Pepco's Capital Grid Application and associated comments, we find that Pepco has provided sufficient information to support the need for the Champlain Substation to be rebuilt and repurposed as a sub-transmission substation and the proposed 572 MVA firm capacity for the Champlain Substation. The assets in question are nearing or exceeding their intended useful life. We disagree with OPC and DOEE's criticisms of the Champlain Substation capacity proposal because repurposing the Champlain Substation as a sub-transmission substation would enable the Company to supply multiple distribution substations and the proposed firm capacity will provide flexibility for planned load transfers in the future as well as single outage contingency (N-1) coverage for loss of one of the three transformers. While DOEE contends that the load to be served by the Champlain Substation has not yet been decided by Pepco and, therefore, any decision about the repurposed substation's capacity is premature,[116] we believe the updated information Pepco provided on the supply needs of the distribution substations that will be served by the repurposed Champlain Substation sufficiently explain the need for the substation's proposed firm capacity.[117]

38. The Champlain Substation will initially supply 340.3 MVA of load in 2026.[118] Based on Pepco's standard transformer rating for sub-transmission substations, three transformers are needed to provide 572 MVA firm capacity for an initial load of 340.3 MVA. We accept Pepco's use of standardized ratings for sub-transmission transformers, as opposed to using the alternative ratings suggested by DOEE and OPC. The firm capacity is based on providing N-1 contingency coverage for loss of one of the three transformers, with each transformer having an emergency rating of 286 MVA. Substation planning requires that the contingency of losing one of the two transformers is covered by the third transformer during an emergency (N-1 contingency). To ensure reliable operation of the grid, Pepco is directed to provide the planned timeframe for the load transfer from the existing Champlain Substation to the Florida Avenue Substation, which would facilitate the retirement of the Champlain as a distribution Substation, within 30 days of the date of this Order.

39. We are also convinced that repurposing the Champlain Substation as a sub-transmission substation plays an important part in reducing the total cost of addressing aging infrastructure in the District and will help reduce the number of miles of sub-transmission circuits supplying load at the L Street, F Street, and Georgetown substations.

---

116 *Formal Case No. 1144,* DOEE Initial Comments at 35.

117 *Formal Case No. 1144,* Pepco's Response to Commission Staff Data Request No. 14, dated May 7, 2019.

118 *Formal Case No. 1144,* Pepco's Response to Staff data Request No, 14-1, dated May 7, 2019.

Pepco's proposed supply feeder replacements will allow the retirement of the existing, aging SCFF supply feeders that cross the river and have had increasing maintenance issues over the past several years.[119]

40. DOEE argues that concentrating the service for so many downtown substations within the Champlain sub-transmission hub contradicts the advantages of diversity of supply, and instead creates a single point of failure.[120] Pepco states that DOEE misapplies the concept of "single point of failure" to the Champlain Substation because the purpose of creating a sub-transmission substation is to feed multiple substations.[121] We disagree with DOEE's contention, as Pepco's proposed design and configuration at Champlain Substation mitigates single point of failure concerns. Moreover, if the Champlain Substation were not repurposed as a sub-transmission substation, then the downtown area would need to be re-supplied from the Takoma Substation, which would create a single point of failure. In our view, a single point of failure should be mitigated within the final design configuration of the substation itself. Therefore, we direct Pepco to supplement the record on this matter by filing within 120 days of this Order, its final design plans showing how they have mitigated single points of failure concerns within the design of the components of the Champlain Substation.

C. Authorization to Pull Cable Through The Conduit Previously Authorized By The Commission In Order No. 18254

41. Pepco's Phase I proposal includes converting the Waterfront Substation No. 223, located at First and Q Streets, SW, from its current 138 kV radial supply configuration to a 230-kV network configuration using two underground High-Pressure Fluid Filled conduits that were described in Pepco's Buzzard Point to Waterfront 230kV lines Notice of Construction.[122] Pepco is seeking authorization to pull the cable through the conduit that was authorized for installation in Order No. 18254.[123] According to the Company, the two new underground transmission lines will be pulled through the underground pipes and manholes already installed pursuant to the same Order. These two feeders will continue to originate from the Ritchie Substation. Pepco explains that this configuration will allow for a better utilization of the capacity of the two feeders to serve the downtown area because they will no longer be limited by the lower summer emergency capacity of the 230/138 kV transformers No.7 and No.14 at Buzzard Point.[124] The Ritchie to Waterfront substation

---

119 Potomac Electric Power Company's 2019 Annual Consolidated Report, at 36, dated April 1, 2019.

120 *Formal Case No. 1144,* DOEE Initial Comments at 37.

121 *Formal Case No. 1144,* Pepco's December 28,2018 Reply Comments at 88.

122 *Formal Case No. 1136,* Order No. 18254, rel. June 24, 2016.

123 *Formal Case No. 1144,* Pepco's Capital Grid Application at vi.

124 *Formal Case No. 1144*, Pepco's Response to Staff Data Request No. 10, Question No. 3 at 3, dated March 25, 2019.

feeders will be both approximately 11 miles long with a design/operating voltage of 230 kV.[125]

42. In Order No. 18254, the Commission found that Pepco's proposal was in the public interest because, due to the increased development in the area, an expansion in capacity may be needed in the future. The Commission determined that the proposed civil facilities (conduit) are planned to house the transmission conductors designated to terminate at the Waterfront Substation No. 223 and meet the likely increase in demand. The Commission determined that at a later date, Pepco could begin construction of the underground transmission civil facilities to support a possible expansion of its transmission network.[126] Finally, the Commission explained that it would need to see additional system load forecasts for the impacted areas before Pepco would be authorized to install and energize the proposed 230 kV transmission conductors or to perform any extension to the transmission conduit discussed by Pepco.[127] Based on our prior consideration and the information submitted by Pepco in this proceeding, we approve Pepco's request contingent on Pepco submitting its load forecasts for the impacted areas within 90 days of the date of this Order.[128]

D. Self-Contained, Fluid-Filled Cables

43. Pepco asserts that aging infrastructure concerns are driving the Company to replace "the existing underground cables supplying the Harvard and Champlain substations as well as the F Street, L Street, and Georgetown substations."[129] According to Pepco, most of these underground cables are nearing or exceeding their intended useful life, as well as approaching technical and economic obsolescence.[130] The cables supplying the Harvard and Champlain substations are approximately 80 and 70 years old, respectively.[131] The cables supplying the L Street, F Street and Georgetown substations are over 30 years old. One of the main concerns with the existing SCFF cables is the possibility of dielectric fluid leaks. Sometimes it can be difficult to find the leaks, and when they occur underwater, repairs can be difficult.[132] Pepco proposes to replace all of

---

125 *Formal Case No. 1144*, Pepco's Response to Staff Data Request No. 10, Question No. 4 at 4, dated March 25, 2019.

126 *Formal Case No. 1136,* Order No. 18254, ¶ 6.

127 *Formal Case No. 1136,* Order No. 18254, ¶ 7.

128 *Formal Case No. 1136,* Order No. 18254, ¶¶ 7, 9.

129 *Formal Case No. 1144,* Pepco's Capital Grid Application at 4.

130 *Formal Case No. 1144,* Pepco's Capital Grid Application at 3-4.

131 *Formal Case No. 1144*, Pepco's Capital Grid Application at 3.

132 *Formal Case No. 1144*, Public Portion of Potomac Electric Power Company's Responses to Commission Data Request No. 9 at 2, dated March 22, 2019.

the existing self-contained, fluid-filled cables in the District with XLPE insulated cables, also known as "solid dielectric" cables.[133] Generally, the XLPE cables have a water-impervious sheath to keep moisture from entering the extruded cross-linked polyethylene insulation.[134] Also, solid dielectric XLPE cables provide a simpler and more environmentally-friendly system with the advantages of no loss of dielectric fluid, lower power losses, and less maintenance.

44. We agree that it is reasonable to expect age-related maintenance and possible failure issues that will become more frequent over time. Based on these facts, we find that Pepco's proposal is reasonable and necessary to ensure the reliability of the electrical system serving customers in the District of Columbia. We direct Pepco to provide an estimate of operations and maintenance savings associated with using XLPE cable in place of the existing SCFF cabling that supplies the Harvard and Champlain substations, within 120 days of the date of this Order.

E. Consideration of Alternative Designs and Downtown Resupply Project

45. In Order No. 19274, we required Pepco to address a number of alternative designs for the Capital Grid Project.[135] Based on its analysis, Pepco generally concluded that the alternatives suggested by OPC and DOEE may not provide the needed capacity, were not feasible for technical reasons, were unreasonably expensive, or posed unacceptable risks for ratepayers.[136] Based on our analysis of the various alternative solutions, including Pepco's analysis of alternative solutions pursuant to Order No. 19274, we are persuaded that Phase I of the Capital Grid Project, as proposed by Pepco, is less costly than most of the alternatives, and the design of the project provides reliability benefits and reduced risk to ratepayers.[137] For example, all of the alternatives considered were either not feasible, or more costly than Pepco's proposal. In one instance, OPC's alternative was less costly only if the Mt. Vernon Substation is never built.[138] However, a decision regarding the Mt. Vernon Substation is not a part of Phase I of this proceeding, and our consideration of alternatives is not contingent upon whether the Mt. Vernon Substation will be constructed, not constructed, or deferred.

46. Regarding the Downtown Resupply Project, although commenters suggested that the Downtown Resupply Project should be reviewed together with the Capital Grid Project, we believe that the two projects should be reviewed separately. The equipment involved in the Downtown Resupply Project falls outside the filing

---

133 *Formal Case No. 1144*, Pepco's Capital Grid Application at 39.

134 *Formal Case No. 1144*, Pepco's Capital Grid Application at 39.

135 *Formal Case No. 1144,* Order No. 19274, Attachment A.

136 *Formal Case No. 1144*, Pepco's Capital Grid Application at 27.

137 *Formal Case No. 1144*, Pepco's Capital Grid Application at 26.

138 *See* OPC's Initial Comments, Mara at 25-26.

requirements for a NOC outlined in 15 DCMR § 2111.1, and therefore different standards of review apply to each project. The Downtown Resupply Project proposes to construct underground distribution lines at or below 69,000 volts to the Georgetown, F Street, and L Street Substations, while the Capital Grid Project proposes to construct two underground transmission lines in excess of 69,000 volts which falls under the filing requirements in 15 DCMR § 2111.1. As a result, the Downtown Resupply Project does not require approval of a NOC by this Commission, and the cost and prudence of that project will be considered in a future base rate case. In any event, to facilitate our future review, we direct Pepco to provide an updated and comprehensive plan for the Downtown Resupply Project, which includes multiple distribution substations that will be served by the Champlain Substation, in the Annual Consolidated Report(s) beginning with the next report due in 2020 and each year thereafter unless otherwise directed. The Annual Consolidated Report(s) should include updated cost estimates with an explanation of a significant changes and an updated construction schedule. Pepco is also directed to provide a draft format for the Annual Report for review and approval by the Commission within 180 days of the date of the Order.

F. Resiliency and Reliability Benefits from Phase I Capital Grid Project

47. Pepco asserts that although its proposal is triggered by aging infrastructure replacement, it will also "increase resiliency by creating a networked system that will provide redundancy, decreasing the impact of an unexpected event (such as a destructive storm, contact by aircraft or other unplanned equipment, etc.) on one of the four transmission pathways could have on customers."[139] Regarding resiliency, based on our analysis, the Commission finds it to be reasonable to add low cost enhancements, when practicable, to reliability projects for the purpose of providing improved resiliency (that is, the ability of the system to withstand and/or recover from a catastrophic event.). The District's distribution system is currently served by four 230 kV transmission corridors. If Capital Grid Project is completed, then in the event of a corridor outage, the number of customers losing power would be significantly reduced.[140] Therefore, the improved resiliency is an inherent tangible benefit from Pepco's aging infrastructure replacement project, which comes at no additional cost to the customers, and would support the existing transmission corridors supplying the District.

48. With respect to reliability, based on the record and our analysis, we conclude that the Capital Grid Project design offers additional reliability benefits through its design compared to a one-for-one, in kind replacement. The proposed Capital Grid Project provides a networked supply to the Harvard and Champlain substations, shortens the length of radial supply cables to the L Street, F Street, and Georgetown substations, will reduce the potential for interruptions of service to load by providing coverage for transmission system N-1-1 contingencies, and uses alternate routing and construction methods to address certain single-point-of-failure concerns raised by Pepco in its

---

139 *Formal Case No. 1144*, Pepco's Capital Grid Application at x.

140 *Formal Case No. 1144,* Pepco's Capital Grid Application at x.

Application. The alternate routing also improves access to cables to mitigate the impact of forced outages by reducing expected repair time. Therefore, we conclude that Pepco's proposal is reasonable and necessary to ensure reliable service to District customers.

49. To ensure critical spare part availability, we direct Pepco to provide a strategy for maintaining an inventory of critical spare parts for transmission line and substation long-lead-time components within 120 days of the date of this Order.

G. Electrical and Magnetic Fields (EMF)

50. As part of its environmental impact statement for the project, Pepco considered the effect of EMFs on public safety and specifically on the nearby communities.[141] In *Formal Case No. 1123*, the Commission addressed EMF associated with the new Waterfront Substation:

> Regarding the effect of EMFs on the nearby community, while we appreciate the concerns raised by community members who live in close proximity to the new substation, we do not find evidence in the record that supports the claim that the EMFs will harm the nearby residents. . . . The scientific data shows that EMFs decay rapidly as the distance from the source increases. Pepco explained further that the substation is being built in stages and has been designed with barriers to provide additional protection from the transformers that emit EMFs.[142]

51. No commenters raised an issue with Pepco's EMF analysis. Based on our review of the record, the Commission expects that the electrical and magnetic fields impact associated with the two rebuilt substations will not be significantly different than the Waterfront Substation considered in *Formal Case No. 1123*. In its Application, Pepco explained that it has retained engineers to evaluate the expected levels of magnetic fields associated with the proposed project. This evaluation will involve the calculation of the magnetic field from the proposed 230 kV underground transmission lines in the future, an assessment in the change in existing magnetic field levels in the area (determined by measurements), and consideration of project features that may minimize the magnetic fields. This data will be evaluated by an expert in the field of bio electromagnetics for comparison to exposure limits recommended by the World Health Organization and with regard to the status of current research on magnetic fields and public health.[143] Therefore, we seek more information from Pepco regarding its study of the magnetic field strength for comparison with the recognized international EMF exposure guidelines based on final

---

141 *Formal Case No. 1144*, Pepco's Capital Grid Application at 54.

142 *Formal Case No. 1123, In the Matter of the Potomac Electric Power Company's Notice to Construct a 230kV/138 kV/13 kV Substation and Four 230 kV/138 kV Underground Transmission Circuits on Buzzard Point*, Order No. 17851, ¶ 64, rel. April 9, 2015.

143 *Formal Case No. 1144*, Pepco's Capital Grid Application at Appendix M, Section 3.6.2.1.

substation designs. Further, we direct Pepco to provide final design calculations of magnetic fields of the 230 kV transmission cables and the rebuilt Harvard and rebuilt and repurposed Champlain Substations. Pepco is also directed to provide feasible mitigation plans for reducing the magnetic fields from underground transmission XLPE (solid dielectric) cables within 90 days of the date of this Order.

H. Permits

52. Pepco has identified a list of permits necessary for the construction of the Capital Grid Project but will be unable to obtain these permits until specific construction start dates are set following this Order.[144] Therefore, we direct Pepco to provide the Commission with the following when available:

a. Copies of all permits and/or instruments approving or authorizing work activities prior to the commencement of activities within 30 days of obtaining each permit or authorization;

b. Two calendar days' notice prior to conducting any work in areas identified as potentially contaminated; and

c. A report on all safety and environmental violations to human health and/or the environment within twenty-four (24) hours of receipt of a citation by any relevant governmental agency.

I. Labor Standards

53. The BWLDC has raised issues related to labor standards. BWLDC asks the Commission to attach certain labor standards to its approval, arguing that oversight is required to assure contractors' compliance with the District's wage and hour laws.[145] BWLDC also urges the Commission to attach local hire standards to its approval to reduce income inequality in the District, and help realize the local economic benefits of the project.[146] As BWLDC correctly states, there is prior Commission precedent (*Formal Case No. 1142*)[147] where labor standards and local hire goals have been attached to certain projects. Given the large scope of the project and the economic benefits associated with it, as they pertain to Phase I, we believe that Pepco should provide some assurance that labor standards are being followed and local hire goals are established. Therefore, we direct Pepco to report on its CBE contracting and hiring of District residents by all Capital Grid

---

144 *Formal Case No. 1144*, Pepco's Capital Grid Application, Appendix B. See also, Pepco's Response to Staff Data Request No. 13, Question 6, dated April 19, 2019.

145 *Formal Case No. 1144,* BWLDC's Initial Comments at 2.

146 *Formal Case No. 1144*, BWLDC's Initial Comments at 2.

147 *Formal Case No. 1142, In the Matter of the Merger of AltaGas Ltd, and WGL Holdings, Inc.,* Order No. 19396 at 21, rel. June 29, 2018.

Project contractors on a quarterly basis. Further, Pepco is directed to develop a plan with percentage goals and timelines associated with CBE contracting and hiring of local residents. Pepco should submit this plan within 90 days of this Order.

J. Community Advisory Group/Communications Plan

54. To ensure the impacted communities are informed and advised during the construction period, Pepco has provided a broad and generic communications plan for engaging all stakeholders, from elected officials to Exelon employees.[148] However, following a review of the communications plan, we find that it lacks the specificity required to ensure that stakeholders, and most importantly residents, are informed and engaged during the construction process. Specifically, any Customer Communication/Education Plan should include, at a minimum:

1. A detailed description and timetable of notice(s) to affected consumers of impending construction;
2. A plan of customer communications, such as bill inserts, newspaper ads, website postings;
3. An interactive dedicated website or project map related to the project which residents can access for project information;
4. A community liaison who consumers can contact with issues or complaints related to the project and who will be responsible for coordinating community outreach;
5. A hotline that consumers can contact to log complaints, which shall be responded to with 24 hours of receipt; and
6. A method of tracking consumer complaints related to the project, and periodic reporting and discussion of such complaints and their resolution to the Commission and the Office of the Peoples Counsel.

Therefore, Pepco is directed to provide a plan containing the information reflected above within 90 days of this Order.

55. Therefore, we direct Pepco to review plans previously approved by the Commission (e.g. DC Plug, ProjectPipes) and submit a similar plan, which includes best practices. We further direct Pepco to convene at least two community advisory groups, one for rebuilt Harvard Substation and one for rebuilt Champlain Substation as required by 15 DCMR § 2107.[149] Each community advisory group must meet at least two times per year and no more than four times per year and must be initiated no later than 30 days before the specific substation construction begins.

---

148 *Formal Case No. 1144*, Pepco's Capital Grid Application, Appendix E.

149 15 DCMR § 2107 (2004).

K. Gas Plant Relocation

56. We believe that Pepco has extensive experience working with other utilities, such as WGL, to coordinate the construction of projects similar to the Capital Grid Project. Therefore, we do not believe that it is necessary to establish a working group to address WGL's concerns. However, we share WGL's desire to ensure safe and reliable operation of the gas distribution system, and therefore direct Pepco and WGL to develop an MOU, per WGL's request, within 120 days of the date of this Order.

L. Environmental, Safety, and Economic Considerations

57. The CleanEnergy DC Omnibus Amendment Act of 2018 requires the Commission, in supervising and regulating utility or energy companies, to consider the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, including effects on global climate change and the District's public climate commitments. In addition to addressing the traditional requirements of 15 DCMR § 2111.5, Phase I of the Capital Grid Project sufficiently addresses the requirements of D.C. Code § 34-808.02.

58. Specifically, Pepco explains that the project will increase the DER hosting capacity within the District and increase the ability to safely and reliably interconnect DER to Pepco's distribution grid.[150] The Company has also established that the project will bring reliability, resilience, and sustainability benefits to the grid, and result in increase in economic activity associated with the professional services required to construct the facilities.[151] Pepco has demonstrated that replacing the aging infrastructure included in Phase I contributes to the clean energy future.[152] Subject to the requirements in Paragraph 51, Pepco will address any potential safety concerns related to the effect of EMF on the affected communities. As required by Commission Rule 2111.5 (j), Pepco provided an analysis of the potential impact of the Capital Grid Project on the environment as well as an Environmental Impact Study.[153] In addition, Pepco also submitted an Environmental Impact Study to supplement its Application and to aide in our review of the environmental impact of the Capital Grid Project. No comments were received opposing Pepco's Environmental Impact Statement.

59. With respect to DER, Pepco asserts that the project will provide significant new DER (such as solar and battery storage) hosting capacity and thereby supports modernization of the distribution system in the District of Columbia, the District's

---

150 *Formal Case No. 1144,* Pepco's Capital Grid Application at vii.

151 *Formal Case No. 1144,* Pepco's Capital Grid Application at vii.

152 *Formal Case No. 1144,* Pepco's Capital Grid Application at vii.

153 *Formal Case No. 1144,* Pepco's Capital Grid Application at Appendix M.

renewable portfolio standards goals, and the District's Clean Energy DC Plan.[154] Pepco estimates that upgrades made through the proposed Capital Grid Project including the Mt. Vernon Substation (if approved) will support over 70 MW of new hosting capacity, and each of the new distribution transformers in the project is estimated to support 10 MW of aggregated large systems—systems over 250 kW.[155]

60. We note that commenters do not directly challenge Pepco's assertions on the anticipated increase in DER hosting capacity. However, some commenters suggested implementing alternatives that we find to be more expensive or less reliable than the Capital Grid Project in order to incentivize developers and customers to install new DERs in the District.[156] We disagree with this approach. Phase I of Pepco's project calls for three new distribution transformers at the rebuilt Harvard Substation, with a possible fourth to be added later. Hence, the potential hosting capacity associated with Phase I is either 30 MW or 40 MW (10 MW per distribution transformer). This additional benefit from the Capital Grid Project contributes to the District's environmental goals and highlights an important ancillary benefit of the project. Based on these facts, we find that increased DER will help mitigate the effects on global climate change, facilitate the District's public climate commitments, improve public safety, and contribute to the economic growth of the District.

61. Further, Pepco's project is designed to resist a 500-year flood event. No comments were received on the floodplain risks to the project. However, we analyzed this concern in view of the District's need to adapt to the effects of climate change, as outlined in its Sustainable DC 2.0 Plan.[157] Pepco's Data Responses show that Pepco's underground equipment is designed to be submersible and would function normally under flood conditions. Furthermore, the tip of the Waterfront Substation that lies within the 500-year floodplain was built to withstand stormwater.[158] The project will be built to withstand a 500-year flood event (0.2 percent annual probability). By designing the system to be functional even during a 500-year flood event, Pepco's electric distribution system will make a significant contribution to the overall resilience of the District during such a catastrophic event. Therefore, the Commission is convinced that Pepco has adequately

---

154 *Formal Case No. 1144,* Pepco's Capital Grid Application at 20.

155 *Formal Case No. 1144,* Pepco's Capital Grid Application at 20.

156 *Formal Case No. 1144,* Pepco's Capital Grid Application at 26, Table 8.

157 District of Columbia's Sustainable DC 2.0 Plan, Department of Energy and the Environment, at 49. rel. April 23, 2019. The Plan states, in pertinent part: "it is essential that critical infrastructure remain in service or be quickly restored in the event of extreme weather, heat, or flooding. These services keep residents safe, healthy, and connected. Any significant climate risks to energy, water, transit, and telecommunications infrastructure should be evaluated and addressed."

158 *Formal Case No. 1144,* Pepco's Response to Staff Data Request No. 11 (March 29, 2019).

addressed this serious safety and sustainability aspect of the project, which will help the District adapt to global climate change.

62. Pepco asserts that the project will bring substantial economic benefit to the District, including full time employment, labor income, and gross domestic product value added of about $85.7 million.[159] The Company explains in detail that the development of energy infrastructure, such as the proposed project, results in an increase in economic activity and benefits minorities, women, veterans, and disabled local businesses, and contractors selected to support the project. The project is also expected to bring additional tax revenue, lead to increased economic activities, and have a positive ripple effect through many of the sectors of the District's economy.[160] With the caveat discussed in Paragraph 53 of this Order (Labor Standards), we find that the project will enhance the economic activity in the District and therefore meets the criteria established in D.C. Code §34 - 808.02.

63. Finally, with respect to public safety, Pepco has acknowledged that the project will cause temporary disturbance and traffic/parking restrictions associated with the construction activities but promises to take all necessary measures to minimize the temporary impacts by various means.[161] We believe that subject to the directives in this paragraph, Pepco has adequately considered the impact of the project on public safety. Pepco's contractors will develop the actual plans to comply with Pepco's requirements with respect to quality, environmental, and safety matters, and we direct Pepco to file those plans with the Commission, once available. To monitor the health and environmental conditions during the period of construction, Pepco is directed to file quarterly construction reports updating the Commission on the construction plans of Phase I. The reports shall be filed by the 15th of the month following the end of the quarter until the project is completed. The reports shall contain the following completed logs and forms from Pepco's Construction Manual:

a. Site Inspection Log;

b. Accident Report Forms, inclusive of reports for any accidents and incidents from trenching, shoring, craning and rigging (material handling), traffic, and breaches of work zone barriers;

c. Environmental Field Inspection Form;

d. Inspection and Maintenance Form; and

e. Environmental Incident Report Form.

Pepco is also directed to provide a draft format for the Quarterly Report for review and approval by the Commission within 30 days of the date of this Order.

---

159 *Formal Case No. 1144*, Pepco's Capital Grid Application at xi-xii.

160 *Formal Case No. 1144*, Pepco's Capital Grid Application at xi.

161 *Formal Case No. 1144*, Pepco's Capital Grid Application at 23-24.

THEREFORE, IT IS ORDERED THAT:

64. Having filed all information required pursuant to Commission Rules 2111.1 and 2111.5, having established on the record the reasonableness, safety and need for the substation and transmission lines, and having sufficiently addressed the requirements of the CleanEnergy DC Omnibus Amendment Act of 2018, the Potomac Electric Power Company can **PROCEED** with Phase I of the Capital Grid Project, as described herein;

65. The Potomac Electric Power Company's Follow-Up Response to Commission Staff's Data Request No. 7, Question No. 1, dated January 8, 2019; Public Portion of Response to Commission Data Request No. 9, dated March 22, 2019; Response to Commission Staff Data Request No. 10, Question Nos. 3 and 4, dated March 25, 2019; Response to Commission Staff Data Request No. 11, dated March 29, 2019; Response to Commission Staff Data Request No. 13, Question No. 6, dated April 19, 2019; Response to Commission Staff Data Request No. 14, dated May 7, 2019; and Response to Commission Staff's Follow-Up Data Request No. 4, Question Nos. 4 (a) - 4 (c) dated May 22, 2019, are **ENTERED** into the record; and

66. The Potomac Electric Power Company is **DIRECTED** to comply with the Directives outlined in Attachment A to this Order.

A TRUE COPY: **BY DIRECTION OF THE COMMISSION:**

CHIEF CLERK: **BRINDA WESTBROOK-SEDGWICK**
COMMISSION SECRETARY

Mandatory Compliance Actions and Reporting

Reference	*Topic*	*Actions*	*Timeline**
Paragraph 54	1. Communication Plan	Pepco to review Communication Plans previously approved by the Commission (e.g. DC Plug, ProjectPipes) and submit a similar Communication plan, which includes best practices.	90 days
		Pepco's plan should include: A detailed description and timetable of notice(s) to affected consumers of impending construction.	
		Pepco's plan should include: A plan of customer communication, such as bill inserts, newspaper ads, website postings.	
		Pepco's plan should include: An interactive dedicated website or project map related to the project which residents can access for project information.	
		Pepco's plan should include: A community liaison who consumers can contact regarding issues or complaints related to the project and who will be responsible for coordinating community outreach.	
		Pepco's plan should include: A hotline that consumers can contact to log complaints, which shall be responded to within 24 hours of receipt.	
		Pepco's plan should include: A method of tracking consumer complaints related to the project, and periodic reporting and discussion of such complaints and their resolution to the Commission and the Office of the Peoples Counsel.	

Reference	*Topic*	*Actions*	*Timeline**
Paragraph 55	2. Communication Plan	Pepco to convene at least two advisory groups, as required by 15 DCMR § 2107, one for the rebuilt Harvard Substation and one for rebuilt Champlain Substation. Each advisory group will meet at least two times per year and no more than four times per year.	30 days before the specific substation construction begins.
N/A	3. Utility Coordination Plan	Pepco to provide updates on the Capital Grid Project at the monthly District Department of Transportation's Utility Coordination meeting.	Monthly
Paragraph 56	4. Gas Plant Relocation	Pepco and WGL to develop a Memorandum of Understanding (MOUs), per WGL's request, for review and approval by the Commission. The MOU will include a schedule for Pepco to certify delivery of civil plans with WGL.	120 days
N/A	5. Construction Reporting to the Commission	Pepco to provide an updated construction timeline for the major components of the Capital Grid Project.	30 days
N/A	6. Construction Plan	Pepco to provide Gantt Charts with detailed schedule of all construction activities.	Quarterly; 15th of the month following the end of the quarter until the project is completed.
Paragraph 63	7. Quarterly Status Report	Pepco to provide draft format for Quarterly Report for review and approval by the Commission.	30 days
		The Quarterly Status Report shall contain the following completed logs and forms from Pepco's Construction Manual: a. Site Inspection Log; b. Accident Report Forms, inclusive of reports for any accidents and incidents from trenching, shoring, craning and rigging (material handling), traffic, and breaches of work zone barriers; c. Environmental Field Inspection Form;	Quarterly

Reference	*Topic*	*Actions*	*Timeline**
		d. Inspection and Maintenance Form; and e. Environmental Incident Report Form.	
Paragraph 63	8. Contractors' Plans for monitoring Quality, Safety, and Environment	Pepco to provide copies of contractors' plans for monitoring construction quality, environmental hazards, and worker and public safety (QSE) during construction.	When available
Paragraph 52	9. Permits	Pepco to provide status of all permits required for the Capital grid Project.	90 days
		Pepco's report on the status of the permits should include: a. Copies of all permits and/or instruments approving or authorizing work activities prior to the commencement of activities within 30 days of obtaining each permit or authorization; b. Two calendar days' notice prior to conducting any work in areas identified as potentially contaminated; and c. A report on all safety and environmental violations to human health and/or the environment within twenty-four (24) hours of receipt of a citation by any relevant governmental agency.	
Paragraph 46		Pepco to provide draft format for Annual report for review and approval by the Commission.	180 days

Reference	*Topic*	*Actions*	*Timeline**
N/A	10. Annual Report	Contents shall include at a minimum: 1. Current estimated project cost with an explanation of any significant changes thereto. 2. Updated construction schedule. 3. Update on the overall CGP including design, construction status, potential obstacles. 4. Provide contingency expenditures, (i.e., expenditures for costs not included in Pepco's base estimate that are funded by the 20 percent contingency cost that Pepco included to cover estimate uncertainty and risk exposure), during the previous year by amount and purpose. 5. Communications activities during the previous year. 6. Dollar amounts of contracts for CBE's. 7. Number of District residents hired by CGP contractors during the previous year. 8. Plans for the Downtown Resupply Project. 9. Permit status.	Annually, with first report filed within 12 months of the date of this Order.

Reference	*Topic*	*Actions*	*Timeline**
Paragraph 53	11. Quarterly Supplier Diversity and District Hiring Report	Pepco to report on its CBE contracting and hiring of District residents by all Capital Grid Project contractors in its Supplier Diversity Annual and Semi-Annual Plans.	Quarterly
Paragraph 53	12. Economic Opportunities	Pepco to develop a plan with percentage goals and timelines associated with CBE contracting and hiring of local residents for the Capital Grid Project Construction.	90 days
Paragraph 51	13. Magnetic field Mitigation	Pepco to provide calculations of magnetic field strength based on final substation designs for Harvard and Champlain Substations. Pepco is also directed to provide any site-specific mitigation plans for reducing the magnetic fields from underground transmission XLPE (solid dielectric) cables. Pepco to provide the study results of their evaluation on the expected levels of magnetic fields associated with the proposed Capital Grid project as described	90 days

Reference	*Topic*	*Actions*	*Timeline**
		in June 29, 2018 Notice of Construction, Appendix M Environmental Impact Study.	
Paragraph 36	14. Florida Avenue Substation Review	Pepco to provide (i) detailed information on the condition of all the existing equipment at Florida Avenue Substation, including at a minimum, equipment health index for all the electrical equipment at the Substation such as transformers, breakers, reclosers, relays etc. and the capability of handling the load transfers from Harvard and Champlain Substations; (ii) confirmation and supporting details whether Florida Avenue Substation will require the completion of any additional maintenance and upgrades, so that it can handle the planned future load transfers from Harvard and Champlain Substations; and (iii) an alternative load-transfer plan for completing Phase I construction that does not depend on the availability of the Florida Avenue Substation.	30 days
Paragraph 36 and 38	15. Florida Avenue Substation - Load Transfer Plan	Pepco to provide the planned timeframe for the load transfer from the existing Harvard Substation to Florida Avenue Substation, while the Harvard Substation is being rebuilt, within 30 days of the date of this Order. Pepco to provide the planned timeframe for the load transfer from the existing Champlain Substation to Florida Avenue Substation, which would facilitate the retirement of the Champlain as a distribution Substation, within 30 days of the date of this Order.	30 days
N/A	16. Substation Design Schedule Review	Pepco to provide schedule for availability of final construction design drawings (civil and electrical), specifications, supply needs and other related materials for the rebuilt Harvard Substation and the rebuilt Champlain Substation.	90 days

Reference	*Topic*	*Actions*	*Timeline**
Paragraph 40	17. Risk Mitigation at Champlain Substation	Pepco to provide planned risk mitigation measures at Champlain Sub-transmission Substation to address potential single-point-of-failure concerns.	120 days
N/A	18. Existing Underground Condition Assessment (pre-construction)	Pepco to provide an assessment of existing underground conditions to minimize risks of unforeseen circumstances.	120 days
Paragraph 44	19. Estimated O&M Savings with XLPE cabling and rebuilt substations	Pepco to provide an estimate of O&M savings associated with using XLPE cable in place of the existing SCFF cabling that supplies the Harvard and Champlain Substations.	120 days
Paragraph 49	20. Spare Part Availability	Pepco to provide strategy for maintaining an inventory of critical spare parts for transmission line and substation long lead time components.	120 days
Paragraph 42	21. Order No. 18254 Compliance	Pepco to provide load forecasts for the impacted areas.	90 days
N/A	22. FERC filings	Pepco to provide copies of any FERC filings that include cost recovery for the Capital Grid Project.	Ongoing
Paragraph 46	23. Downtown Resupply Project	Pepco to provide updated and comprehensive plans for the DRP in Annual Consolidated Report (s), including updated cost estimates with an explanation of significant changes and updated construction schedule(s).	Annual
N/A	24. Harvard Substation	If a fourth transformer is needed, Pepco shall file its plan and justification supporting the transformer addition at the rebuilt Harvard Substation before it is added.	If and when needed

* Unless otherwise stated, the time reflects days from the date of this Order.