

IN THE MATTER OF THE APPLICATION *
OF BALTIMORE GAS AND ELECTRIC *
COMPANY FOR A CERTIFICATE OF *
PUBLIC CONVENIENCE AND NECESSITY *
FOR THE KEY CROSSING RELIABILITY *
INITIATIVE TRANSMISSION LINE *
PROJECT *

BEFORE THE
PUBLIC SERVICE COMMISSION
OF MARYLAND

CASE NO. 9600

PROPOSED ORDER OF PUBLIC UTILITY LAW JUDGE

Before: Kristin Case Lawrence
Public Utility Law Judge

Issued: February 12, 2020

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Appearances

Daniel W. Hurson, Esquire and Jessica Raba, Esquire, on behalf of Baltimore Gas and Electric Company

Steven M. Talson, Assistant Attorney General, on behalf of the Department of Natural Resources, Power Plant Research Program

Patrick E. O’Laughlin, Assistant People’s Counsel, and Gary L. Alexander, Assistant People’s Counsel, on behalf of the Maryland Office of People’s Counsel

Lloyd J. Spivak, Deputy Staff Counsel, and Michael A. Dean, Assistant Staff Counsel, on behalf of the Staff of the Maryland Public Service Commission

I. Procedural History

1. On December 21, 2018, Baltimore Gas and Electric Company (BGE or “Applicant”) filed an application for a Certificate of Public Convenience and Necessity (CPCN) for authority to modify a portion of the existing 230 kV electric transmission line that runs between the Riverside Substation in Baltimore County, Maryland and the Brandon Shores Substation in Anne Arundel County, Maryland (“Application”).¹

2. On December 26, 2018, the Public Service Commission of Maryland (“Commission”) delegated this matter to the Public Utility Law Judge Division to conduct the proceedings.

3. On February 19, 2019, Applicant filed the Direct Testimonies and exhibits of James A. Casey, Jeffrey L. Meling, and Robert W. Munley.² The Environmental Review Document (ERD) was attached to the Direct Testimony of Jeffrey L. Meling as an exhibit.³

4. On March 7, 2019, a prehearing conference was held,⁴ and on March 8, 2019, a Notice of Procedural Schedule was issued.

5. On June 28, 2019, Applicant filed Supplemental Direct Testimonies of James A. Casey, Jeffrey L. Meling, and Robert W. Munley.⁵

6. On July 17, 2019, Applicant filed a Certificate of Compliance and submitted copies of the notices it provided to members of the General Assembly pursuant to Public Utilities Article, *Annotated Code of Maryland* (“PUA”), §7-207(c)(1)(iv)-(v).⁶

¹ The Application was entered into the record as BGE Ex. 7.

² BGE Exs. 13, 8 and 10, respectively.

³ The ERD was thus entered into the record as part of BGE Ex. 8.

⁴ Notice and Certificates of Publication for the Pre-Hearing Conference were entered into the record as BGE Ex. 1.

⁵ BGE Exs. 14, 9 and 11, respectively.

⁶ BGE Ex. 6.

7. On September 9, 16, and 17, 2019, evening hearings for public comment were held in Baltimore City, Anne Arundel County, and Baltimore County, Maryland, respectively.⁷
8. On October 8, 2019, PPRP filed a motion to extend the time in which to file direct testimony, to which BGE replied on October 10, 2019.⁸ Ultimately, all parties consented to PPRP's requested revision to the procedural schedule and the schedule was revised.⁹
9. On December 2, 2019, PPRP filed the following: State Secretarial Letter with CPCN Recommendation,¹⁰ Direct Testimony of Helen Stewart,¹¹ Direct Testimony of Ricardo R. Austria,¹² Initial Recommended Licensing Conditions,¹³ and a draft Project Assessment Report (PAR) for the Proposed Key Crossing Reliability Initiative Transmission Line Project (confidential and public redacted versions).¹⁴ Also on December 2, 2019, the Staff of the Commission ("Staff") filed Direct Testimony of Kevin Zhong which included conditions.¹⁵
10. A second set of evening hearings for public comment were held December 9-11, 2019 in Anne Arundel County, Baltimore City, and Baltimore County, Maryland.¹⁶

⁷ The Certificate of Publication for Public Comment Hearing and the Affidavit of Posting Signage for Public Hearing were entered into the record as BGE Exs. 2 and 3, respectively.

⁸ Dkt Items Nos. 30, 32.

⁹ Dkt Item No. 33.

¹⁰ PPRP Ex. 1.

¹¹ PPRP Ex. 2. The Direct Testimony of Helen Stewart is labeled PPRP Exhibit __ (HS-1). PPRP Ex. 5 was attached to Witness Stewart's Direct Testimony as Exhibit __ (HS-5) and is captioned BGE Responses to Selected Non-Confidential Data Requests. Confidential responses to selected data requests is PPRP Ex. 9.

¹² PPRP Ex. 6. The Confidential Direct Testimony of Ricardo Austria is PPRP Ex. 7.

¹³ PPRP Ex. 3. The Initial Recommended Licensing Conditions are labeled as PPRP Exhibit __ (HS-2).

¹⁴ The PAR Public Redacted Version, PPRP Ex. 4, is labeled as PPRP Exhibit __ (HS-3). The PAR Confidential Version, PPRP Ex. 8, is labeled as PPRP Exhibit __ (HS-4).

¹⁵ Staff Ex. 2. Staff Ex. 1 was marked for identification but not admitted into evidence.

¹⁶ The Certificate of Publication for Public Comment Hearing and the Affidavit of Posting Signage for Public Hearing were entered into the record as BGE Exs. 4 and 5, respectively.

11. On December 13, 2019, PPRP filed revised Initial Recommended Licensing Conditions.¹⁷

12. On January 10, 2020, Staff filed Rebuttal Testimony of Kevin Zhong with an additional recommended licensing condition.¹⁸ On January, 22, 2020, BGE filed Surrebuttal Testimony of Robert W. Munley.¹⁹

13. Pursuant to the revised procedural schedule, the Parties provided a settlement status update on January 24, 2020 at which time the Parties indicated that there was one contested issue among the Parties, specifically the additional recommended licensing condition contained in the Rebuttal Testimony of Staff Witness Zhong. BGE indicated that it disagreed with Staff Witness Zhong's additional recommended licensing condition for the reasons set forth in the Surrebuttal Testimony of Witness Munley. BGE indicated its agreement to and acceptance of the initial recommended licensing conditions put forward by Staff and all of the recommended licensing conditions set forth by PPRP in its revised Initial Recommended Licensing Conditions.

14. On January 28, 2020, a hearing for taking evidence was held, at which time pre-filed testimony and exhibits were entered into the record and examination of witnesses was conducted. PPRP indicated that its revised Initial Licensing Conditions filed on December 13, 2019 constituted its final Licensing Conditions (hereafter "Licensing Conditions"), and waived additional time after the hearing to further revise these Licensing Conditions.²⁰ Additionally, the Parties agreed to a shortened appeal period under PUA §3-113(d)(2).

¹⁷ The clean version of PPRP's Revised Initial Recommended Licensing Conditions is PPRP Ex. 10. PPRP Ex. 11 is the redlined version.

¹⁸ Staff Ex. 3.

¹⁹ BGE Ex. 12.

²⁰ Transcript of evidentiary hearing held January 28, 2020 ("Tr."), p. 10, 170.

II. Overview of the Project

15. The Applicant seeks a CPCN for the reconstruction of a portion of an existing 230 kV electric transmission line that runs between the Riverside Substation in Baltimore County, Maryland and the Brandon Shores Substation in Anne Arundel County, Maryland (the “Project”). The Project involves the replacement of the existing underground pipe-type cable along an approximately 2.25 mile stretch between Hawkins Point and Sollers Point beneath the Patapsco River (“Harbor Crossing”) with overhead wire and eight support structures. The existing transmission terminal stations on Hawkins Point and Sollers Point that transition the current line from overhead to underground will be removed, abandoning in place the existing underground portion of the electric transmission line.

16. BGE asserted that the reconstruction was necessary to maintain the integrity and reliability of the double-circuit 230 kV transmission loop around BGE’s Maryland electric distribution service territory, and mitigate potential overloads.²¹

17. After filing the CPCN Application, BGE made refinements to the Project’s design including finalizing the steel monopole tower design, decreasing base diameter and reducing overall structure size, and reducing the total quantity of water-based pipe piles.

18. The ERD identified and assessed potential environmental, ecological, socioeconomic, and land use impacts associated with construction and operation of the Project, pursuant to Code of Maryland Regulations (COMAR) 20.79.01.01, and addressed the requirements of PUA §7-207(e).

²¹ Application, p. 5.

III. Public Comments

19. A small number of people attended the public comment hearings held September 9, 16, and 17, 2019. BGE presented a video of the Project and answered questions. No one went on record in support of or against the Project. A few people attended the second set of hearings December 9-11, 2019. One person from Anne Arundel County spoke in favor of the Project. No member of the public attended the hearing in Baltimore City. One person attended the hearing in Baltimore County and noted her approval of the Project.

20. No written comments were received.

IV. Applicable Law

21. The Application seeks authorization for the reconstruction of a portion of an existing 230 kV electric transmission line. PUA §§7-207 and 7-208 govern construction of overhead transmission lines designed to carry voltages in excess of 69,000 volts, and contain the requirements for CPCNs.

22. PUA §7-207(e) in effect as of the date the Application was filed²² mandates the Commission to take final action on a CPCN application for an overhead transmission line only after due consideration of the following:

- (1) the recommendation of the governing body of each county or municipal corporation in which any portion of the construction of the generating station, overhead transmission line, or qualified generator lead line is proposed to be located;
- (2) the effect of the generating station, overhead transmission line, or qualified generator lead line on:
 - (i) the stability and reliability of the electric system;

²² PUA §7-207(e) was amended effective October 1, 2018; the Application was filed December 21, 2018.

- (ii) economics;
- (iii) esthetics;
- (iv) historic sites;
- (v) aviation safety as determined by the Maryland Aviation Administration and the administrator of the Federal Aviation Administration; and
- (vi) when applicable, air quality and water pollution.

23. In addition, PUA §7-207(f) provides additional considerations before final action on an application:

(f) Construction of overhead transmission lines. -- For the construction of an overhead transmission line, in addition to the considerations listed in subsection (e) of this section, the Commission shall:

- (1) take final action on an application for a certificate of public convenience and necessity only after due consideration of:
 - (i) the need to meet existing and future demand for electric service; and
 - (ii) for construction related to a new overhead transmission line, the alternative routes that the applicant considered, including the estimated capital and operating costs of each alternative route and a statement of the reason why the alternative route was rejected;
- (2) require as an ongoing condition of the certificate of public convenience and necessity that an applicant comply with:
 - (i) all relevant agreements with PJM Interconnection, L.L.C., or its successors, related to the ongoing operation and maintenance of the overhead transmission line; and
 - (ii) all obligations imposed by the North America Electric Reliability Council and the Federal Energy Regulatory Commission related to the ongoing operation and maintenance of the overhead transmission line; and
- (3) require the applicant to identify whether the overhead transmission line is proposed to be constructed on:

- (i) an existing brownfields site;
- (ii) property that is subject to an existing easement; or
- (iii) a site where a tower structure or components of a tower structure used to support an overhead transmission line exist.

V. Analysis and Findings

24. Applicant accepted the Licensing Conditions as recommended by PPRP, attached hereto as Attachment A. Applicant also accepted Staff's initial conditions, which in addition to PPRP's Licensing Conditions, recommended that a grant of the CPCN be contingent upon (i) notification to the Commission when the overhead transmission lines have been placed into service; and (ii) notification to the Commission when the existing under-river cables have been permanently retired from service.²³ OPC supported PPRP's recommendations in full.²⁴ PPRP and OPC recommended that the CPCN be granted, as long as it is subject to the recommended Licensing Conditions from PPRP.

25. Notwithstanding the agreement among the Parties with respect to most of the recommended licensing conditions, the Commission still must give due consideration to the factors in PUA §7-207(e), as well as consider the requirements of PUA §7-207(f). Accordingly, each of the PUA §7-207(e) factors, and the requirements of PUA §7-207(f), as well as the additional factors identified by the Applicant, PPRP, and Staff in their analyses, are considered below. PUA §7-209 provides that the Commission shall examine alternatives to the construction of a new transmission line in a service area, however, the Project consists of replacement of a

²³ See Staff Ex. 2, Direct Testimony of Kevin Zhong ("Zhong Direct"), p. 25.

²⁴ Dkt. Item No. 42.

portion of an existing transmission line, not construction of a new line, and thus PUA §7-209 is not applicable.

A. Consideration of PUA § 7-207(e) Factors

1. Recommendations of the Governing Bodies in Which Construction is Located

a. Recommendations of Baltimore City

26. Baltimore City did not intervene as a party to this matter and did not provide recommendations with regard to the Project. PPRP's Licensing Conditions 1.k and 22 address compliance with noise regulations; and Licensing Conditions 11.a and 11.b.i address Chesapeake Bay Critical Area requirements.²⁵ I find that PPRP's recommended Licensing Conditions address concerns germane to Baltimore City.

b. Recommendations of Baltimore County

27. Baltimore County did not intervene as a party to this matter and did not provide recommendations with regard to the Project. PPRP's Licensing Conditions 1.k. and 22 address compliance with noise regulations; and Licensing Conditions 11.a and 11.b.i address Chesapeake Bay Critical Area requirements.²⁶ I find that PPRP's recommended Licensing Conditions address concerns germane to Baltimore County.

²⁵ PPRP Ex. 10 at 2, 9; 7.

²⁶ PPRP Ex. 10 at 2, 9; 7.

c. Recommendations of Anne Arundel County

28. Anne Arundel County did not intervene as a party to this matter and did not provide recommendations with regard to the Project. PPRP's Licensing Conditions 1.k and 22 address compliance with noise regulations.²⁷ I find that PPRP's recommended Licensing Conditions address concerns germane to Anne Arundel County.

29. I find that PPRP's recommended Licensing Conditions address concerns germane to Anne Arundel County.

2. Stability and Reliability of the Electric System

30. Applicant reported that once completed the Project will maintain the integrity and reliability of BGE's 230 kV transmission loop.²⁸ Applicant asserted that if the Harbor Crossing cables were retired without replacement, the loop would be broken, and, if a fault occurred, especially on the east side of the 230 kV system, numerous customers could be affected.²⁹

31. Staff Witness Kevin Zhong testified that if the existing underground service fails, there will be identified thermal and voltage issues, which will adversely impact the supply of power through the 230 kV transmission ring and to downtown Baltimore.³⁰

32. PPRP Witness Ricardo Austria identified the potential impact on reliability and stability of the electric grid for each alternative that was considered.³¹ Witness Austria summarized his

²⁷ PPRP Ex. 10 at 2, 9.

²⁸ Application, p. 5.

²⁹ Application, p. 7.

³⁰ Zhong Direct, p. 25.

³¹ See PPRP Ex. 6, p. 13.

findings in a table that reflects that the Project will cause no reliability related issues and there will be no stability issue or violations as a result of the Project.³²

33. I find that the Project is needed to maintain the reliability and stability of the 230 kV transmission loop, and that the Project will have no adverse impact on the stability and reliability of the electric transmission system.

3. Economics

34. The Applicant stated that the Project will help sustain the reliability of the electrical system in the State of Maryland and ensure that customers within Applicant's electric distribution service territory and beyond have a reliable network for transmitting electricity for years to come.³³ Applicant offered that the Project will thus have a positive impact on the economies of the State.³⁴ Applicant noted that the Project is also expected to generate tax revenue for the State and local governments and create temporary local construction-related jobs.³⁵ According to the ERD, tax revenues to the State will come from income taxes, retail sales taxes on material, supplies and some construction services; retail sales tax on expenditures by workers; and corporate income taxes paid by local contractors working on the Project.³⁶ Further, local government tax revenues during construction will primarily accrue from personal income taxes, property taxes, and to a lesser extent, permitting and impact fees.³⁷ Applicant stated that the Project is expected to have a small but positive impact on local businesses and the local

³² *Id.*

³³ Application, p. 13.

³⁴ Application, p. 13.

³⁵ *Id.* at 13-14.

³⁶ ERD at 4-69.

³⁷ ERD at 4-69.

economy as a whole during construction.³⁸ Applicant balanced that against no significant impacts to public services and facilities and existing transportation infrastructure during Project construction or operation.³⁹

35. PPRP Witness Helen Stewart testified that the Project will have modest, positive economic and fiscal impacts for Baltimore City, Baltimore County, and Maryland.⁴⁰ Witness Stewart testified that construction will employ 50 to 75 workers, most sourced from the local labor pool if subcontractors competitively bid the work, which will have a positive effect on the local economy.⁴¹ She noted that not all benefits will accrue to Maryland since specialized components, particularly steel monopoles and conductors, are manufactured outside of Maryland and imported.⁴² Witness Stewart testified that the Project will have no effect on population or housing, or on population-related public service provision, and thus the net benefit of Project construction will be positive for the surrounding region.⁴³

36. Although the economic benefit to the surrounding region from construction of the Project is not significant in the context of local and state economies, the evidence is that there will be no adverse economic, demographic, or fiscal impacts. On this record, I conclude that the Project will be of net economic benefit to the Baltimore City, Baltimore County and/or Anne Arundel County and the State.

³⁸ ERD at 4-69.

³⁹ ERD at 4-70.

⁴⁰ PPRP Ex. 2, p. 24.

⁴¹ PPRP Ex. 2, p. 24.

⁴² *Id.*

⁴³ *Id.*

4. Esthetics

37. The Project will introduce eight new electric transmission towers (five over water and three on land) and the electrical conductors supported thereby into the visual landscape of the area surrounding the Project site.⁴⁴ Applicant noted that the area surrounding the project site is highly industrialized with a number of existing structures such as the Francis Scott Key Bridge (the “Key Bridge”) and multiple large container cranes located at surrounding port facilities.⁴⁵ During construction, barges and cranes will be visible from certain vantage points in the Baltimore Harbor area.⁴⁶ Once constructed, the eight towers will be taller than the Key Bridge, and thus visible from some locations where not blocked by development, such as from Fort Armistead Park, which is located near the Hawkins Point side of the Patapsco River across Interstate 695.⁴⁷ However, Applicant believes that given the presence of the bridge and the industrial nature of the area, the existing visual landscape will not be significantly altered.⁴⁸ Applicant noted that the passing views of the harbor area by motorists crossing the Key Bridge will be impacted by the new structures and transmission cables, but asserted that these impacts are not considered significant.⁴⁹

38. PPRP Witness Stewart testified that the Baltimore Harbor presents a maritime industrial and urban industrial landscape with waterside views of multiple port facilities, electric generating plants, and transportation infrastructure.⁵⁰ Witness Stewart further testified that views

⁴⁴ Application, p. 17.

⁴⁵ Application, p. 17.

⁴⁶ ERD at 4-73.

⁴⁷ ERD at 4-73.

⁴⁸ ERD at 4-73.

⁴⁹ ERD at 4-73.

⁵⁰ PPRP Ex. 2, p. 21.

upriver from points south are obstructed by the Key Bridge.⁵¹ She testified that although the Project will add another industrial element to the harbor landscape, the monopole design is the least intrusive, visually, of the overhead options considered.⁵² She noted that photo-simulations created by BGE suggest far views, such as from Fort McHenry and from taller buildings overlooking the harbor from Baltimore's central business district, will be minimally impaired, and with respect to the view upon the Key Bridge, she noted that the bridge is not historic and not of particular scenic value.⁵³

39. PPRP recommended Licensing Condition 15 – Visual Impacts on Fort McHenry – which would require BGE to apply pre-dulled, galvanized coatings to monopole structures prior to structure erection.⁵⁴ With respect to the Chesapeake Bay Critical Area, Licensing Condition 11.b.ii would further require BGE to provide final mitigation plans, including copies of all necessary planting plans and Buffer Management Plans, demonstrating compliance with the approved impact values and mitigation requirements.⁵⁵

40. I find that, subject to the Licensing Conditions, the Project will not have a significant adverse visual impact on the surrounding areas.

⁵¹ *Id.*

⁵² *Id.*

⁵³ *Id.*

⁵⁴ PPRP Ex. 10 at 9.

⁵⁵ PPRP Ex. 10 at 7.

5. Historic Sites

41. Applicant stated that there no aboveground historical resources within the Project site and thus no direct impacts to aboveground historical resources will result from Project construction.⁵⁶

However, Applicant noted that there is potential for the Project to result in indirect effects.⁵⁷

42. The new towers and conductors will be visible from Fort McHenry National Monument and Historic Shrine, and the Canton Grain Elevator, but will be screened from view of the Dundalk Survey Area and Turner's Station African American Survey District.⁵⁸ Although Fort McHenry is a prominent historic site, the Project area is more than four miles away.⁵⁹ Applicant stated that the only visual impact on the fort will be brief glimpses of the fort that drivers and their passengers might get as they cross the Key Bridge that will include the Project's towers and transmission lines in addition to the bridge itself.⁶⁰ Applicant believes that the potential impacts on views from the fort, given the distance and the heavily industrial context that already impacts views from the fort, are not significant.⁶¹

43. PPRP stated that there are numerous archeological sites and historic properties in the vicinity of the Project, including several on the National Register of Historic Places (NRHP), in addition to several documented shipwrecks and other submerged anomalies within the Patapsco River.⁶² PPRP also noted the distance of the Project from Fort McHenry National Monument and Historic Shrine (approximately four miles).⁶³ Nearby sites listed in the Maryland Inventory

⁵⁶ ERD at 4-63.

⁵⁷ ERD at 4-63.

⁵⁸ ERD at 4-63.

⁵⁹ ERD at 4-64.

⁶⁰ ERD at 4-64.

⁶¹ ERD at 4-64.

⁶² PAR at 17.

⁶³ PAR at 17.

of Historic Properties (MIHP) include several buildings associated with the former Baltimore Municipal Airport, now part of the Dundalk Marine Terminal.⁶⁴ Turner Station, designated an African American Survey District, developed due to its proximity to industry along the Patapsco River, particularly jobs at Bethlehem Steel, and was the largest African American enclave in Baltimore County during the Second World War.⁶⁵

44. According to PPRP, none of the historic and cultural resources in the area will be directly affected by Project construction and operation.⁶⁶ The Project could indirectly affect historic resources by altering the settings with the introduction of barges and cranes during construction, and structures and conductors when completed.⁶⁷ PPRP noted that a photographic survey determined that the Project would not be visible to identified historic resources with the Project's area of potential effect, and visual impacts from other historic properties looking downriver from Baltimore Harbor are likely to be mitigated by the Project's small visual footprint within an existing visual landscape that is distinctly industrial.⁶⁸ Visual impacts upon historic resources south of Key Bridge were determined to be relatively minor because views are already compromised by the bridge and nearby industrial development.⁶⁹ PPRP concluded that views of the Project will not diminish the integrity of Fort McHenry.⁷⁰ PPRP recommended Licensing Condition 14 – Maryland Historical Trust – which would require BGE, prior to construction to certify to the Commission and PPRP that BGE has addressed all Maryland Historical Trust

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.* at 18. *See also*, PPRP Ex. 10 at 21.

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

(MHT) concerns and recommendations for the mitigation of Project impacts upon cultural and archeological resources.⁷¹

45. PPRP indicated that a mitigation project to stabilize eroding shoreline in nearby Chestnut Hill Cove will not affect any terrestrial archeological resources and that four submerged archeological sites will be avoided with 50-foot buffers.⁷² PPRP Witness Stewart clarified her written testimony regarding the mitigation project. Witness Stewart determined that the mitigation project will be greater than 50 feet from any of the four submerged archeological sites and thus found that these resources will not be affected by the mitigation project given that 50-foot buffer. PPRP recommended Licensing Condition 16 – Underwater Archeological Resources – requiring BGE to conduct further underwater investigations if avoidance of known underwater resources is not possible; and Licensing Condition 17 – Archeological Discoveries – requiring BGE to develop and implement a plan for avoidance and protection, data recovery, or destruction without recovery of unforeseen relics or sites is revealed as a result of construction.⁷³

46. Accordingly, subject to Licensing Conditions 14 through 17, I find that the Project will not have an adverse effect on historic properties or cultural or archeological resources.

6. Aviation Safety

47. PPRP noted that temporary structures during construction will include cranes that will require Federal Aviation Administration (FAA) obstruction marking and lighting.⁷⁴ BGE plans to install lighting on the tops of all new structures and at the mid-points of the towers on either

⁷¹ PPRP Ex. 10 at 8-9.

⁷² PAR at 19.

⁷³ PPRP Ex. 10 at 9.

⁷⁴ PAR at 32.

side of the Fort McHenry Channel, plus marker balls spaced every 200 feet on shield wires above conductors to satisfy FAA obstruction standards.⁷⁵ PPRP stated that the FAA has determined that Project components will not be a hazard to air navigation provided all conditions are met. Licensing Condition 21 – Federal Aviation Administration (FAA) Compliance – requires that BGE certify to PPRP and the Commission, prior to construction, that proposed lighting of structures and markers on shield wires satisfies FAA obstruction standards.

48. I find that, subject to Licensing Condition 21, the Project will have no adverse effect on aviation safety.

7. Air Quality and Water Pollution

a. Air Quality

49. Applicant stated that because the Project will not involve construction of permanent sources of air pollution emissions, the Project does not trigger any air emissions-related permitting requirements.⁷⁶ Applicant asserted that potential impacts on air quality will be minimal and limited to small, temporary impacts during construction.⁷⁷ Site work and earth moving at Hawkins Point and Sollers Point may generate fugitive dust emissions, and the operations of heavy equipment will result in emissions of NO_x, carbon monoxide, and other combustion products, and construction in the Patapsco River will require operation of boats, barges, and other similar water craft that will emit combustion particles.⁷⁸

⁷⁵ PAR at 32.

⁷⁶ ERD at 4-1.

⁷⁷ ERD at 4-1.

⁷⁸ ERD at 4-1 – 4-2.

50. Licensing Conditions 1.i.⁷⁹ provide restrictions regarding particulate matter from materials handling and construction, and prohibits a nuisance from emissions.⁸⁰ Subject to compliance with applicable COMAR provisions cited in PPRP's recommended Licensing Conditions, the Project will not have an adverse impact on air pollution or air quality in the region.

b. Water Pollution

51. Applicant outlined potential construction impacts on groundwater, noting that impacts to groundwater resources during construction on land should be minimal.⁸¹ Applicant stated that a limited amount of dewatering may temporarily be required during foundation installation for the new structure on Hawkins Point.⁸² Applicant indicated that surface runoff and drainage from construction areas will be controlled using approved stormwater management (SWM) systems which will minimize the discharge of suspended solids to adjacent surface waters.⁸³

52. Applicant stated that once constructed, the Project will not require withdrawal of groundwater, and will not have any direct discharges to groundwater or surface water.⁸⁴

53. Applicant noted that the Phase I environmental site assessment (ESA) revealed the potential for contaminants to be present in the subsurface soil and groundwater at Hawkins Point.⁸⁵ Applicant averred that construction and installation of tower foundations is not likely to

⁷⁹ There are two Licensing Conditions labeled 1.i both of which apply to air pollution/quality.

⁸⁰ PPRP Ex. 10 at 1-2.

⁸¹ ERD at 4-2 – 4-3.

⁸² ERD at 4-3.

⁸³ ERD at 4-3.

⁸⁴ ERD at 4-3.

⁸⁵ ERD at 4-4.

result in the contaminants migrating into the Lower Patapsco aquifer system, and each foundation will be filled with concrete, providing a seal that will restrict mobility of water.⁸⁶

54. The Phase I ESA also revealed the potential for contaminants at Sollers Point, however, based on the hydrogeologic setting, they are unlikely to migrate.⁸⁷

55. Applicant stated in the ERD that sediment sampling in the Patapsco River indicated heavy metals and other contaminants, however, the piles tend to be self-sealing and do not produce a vertical conduit for fluid transfer between formations.⁸⁸

56. Applicant noted that construction activities have a greater potential to impact surface water than operation of the Project once built.⁸⁹ During construction, work in the Patapsco River has the greatest potential to result in surface water impacts, while the process of decommissioning the existing on-land facilities and underwater cables will also have some potential to impact surface waters.⁹⁰ Applicant averred that the increase in suspended sediment projected to result from in-water, sediment disturbing construction activities is not expected to result in adverse impacts to the water quality of the Patapsco River.⁹¹ Applicant acknowledged that there is the potential for short term impacts from releases of contaminants into the water column during pile installation, but does not expect the mobilization of contaminants in sediment to result in significant impacts to water quality.⁹²

⁸⁶ ERD at 4-4.

⁸⁷ ERD at 4-4 – 4-5.

⁸⁸ ERD at 4-6 – 4-7.

⁸⁹ ERD at 4-7.

⁹⁰ ERD at 4-7.

⁹¹ ERD at 4-8.

⁹² ERD at 4-8 – 4-9.

57. Permanent and temporary impacts to wetlands and other waters will result from land-based construction activities, as more fully outlined in Section 4.4 of the ERD.⁹³ Applicant stated that no significant impacts in surrounding surface water quality are expected to result from upland construction activities; sediment control facilities will be developed and installed to accommodate construction activities and to prevent significant impacts.⁹⁴ Once constructed, Applicant does not expect any significant impacts to water quality.⁹⁵

58. PPRP Witness Stewart testified that construction and operation of the Project will not likely result in impacts to water quality.⁹⁶ Witness Stewart noted that although pile installation within the Patapsco River is expected to cause some sediment resuspension, the increase in suspended sediment is not expected to result in adverse impacts to water quality.⁹⁷ Witness Stewart testified that levels of Total Suspended Solids from resuspension are projected to be at least 50 times lower than lethal level of the most sensitive species, and are very minor in comparison to the amounts released from necessary annual dredging of Baltimore Harbor's shipping and approach channels.⁹⁸

59. Recommended Licensing Condition 1 requires the Applicant to comply with all applicable local, State, and federal laws and regulations, including those related to tidal and non-tidal wetlands, waterway construction, water quality and water pollution control, and erosion and sediment control, and Licensing Condition 5 deals with erosion and sediment control in more

⁹³ ERD at 4-9 – 4-10.

⁹⁴ ERD at 4-10.

⁹⁵ ERD at 4-11.

⁹⁶ PPRP Ex. 2 at 10.

⁹⁷ *Id.* at 11.

⁹⁸ *Id.*

detail.⁹⁹ Licensing Condition 7 – Wetland and Waterways – requires BGE to apply to MDE for all required permits for construction in wetlands, waterways, or floodplains, and Licensing Condition 8 provides that BGE shall not start construction in any State tidal wetland until the Board of Public Works has issued a tidal wetlands license.¹⁰⁰

60. Applicant has proposed to abandon the existing underground circuits in place. BGE stated that to completely remove the pipes and cables under the Patapsco River would result in significant disturbance to the river bottom, exposure of contaminated sediments in the water column, and temporary closures of the Fort McHenry shipping channel.¹⁰¹ BGE developed alternatives to remove the approximately 150,000 gallons of mineral oil, which serves as a dielectric and heat transfer medium, from the five conduits.¹⁰² A two-step physical process that would use air pressure to first force out approximately 50 percent of the oil and then introduce low pressure fresh water to displace most of the remaining oil was tested and found to be a safe and effective way to remove at least 90 percent of the oil.¹⁰³ BGE then studied whether the remaining oil (approximately 10 percent of the original pipe volume) could be biodegraded. According to BGE Witness Meling, BGE is now confident that the physical means of oil removal will remove at least 90 percent of the mineral oil and that the small amount that may remain will pose little or no threat to the environment.¹⁰⁴ BGE therefore decided not to pursue the biodegradation option.

⁹⁹ PPRP Ex. 10 at 1, 3.

¹⁰⁰ PPRP Ex. 10 at 4.

¹⁰¹ ERD at 3-45 – 3-46.

¹⁰² ERD at 3-46.

¹⁰³ ERD at 3-46.

¹⁰⁴ BGE Ex. 9, Supplemental Direct Testimony of Jeffrey L. Meling (“Meling Supplemental Direct”), p. 6.

61. Staff Witness Zhong opined that the plan for decommissioning the existing pipes and cables under the Patapsco River should address BGE's decision to leave approximately 15,000 gallons of mineral oil permanently under the river bottom and the associated risks.¹⁰⁵ Witness Zhong noted that because the Project involves a transmission line, the cost risks associated with an environmental incident or some sort of future interference with the decommissioned cables by other parties or with other infrastructure cost risks could impact utility ratepayers.¹⁰⁶ Staff recommended that BGE be required to ensure that its customers are protected from any potential future cost liabilities associated with any potential risks of BGE's decommissioning plan for the existing submarine Harbor Crossing Cables by agreeing to not seek regulatory recovery of such costs through the Federal Energy Regulatory Commission (FERC) or the Maryland Public Service Commission.¹⁰⁷

62. Witness Munley in his Surrebuttal Testimony responded that he did not believe Staff's additional condition was necessary because BGE has developed a "robust" plan for decommissioning the existing underground cables.¹⁰⁸ Witness Munley testified that at least 90% of the dielectric mineral oil will be removed from the pipes and then the pipes will be filled with demineralized water that is under negative pressure.¹⁰⁹ He explained that negative pressure, pressure lower than that of the surrounding Patapsco River water, will mean that any leakage associated with the potential corrosion of the abandoned pipes is likely to be river water leaking into the pipes rather than any residual oil leaking out of the pipes.¹¹⁰ Witness Munley further

¹⁰⁵ Staff Ex. 3, Rebuttal Testimony of Kevin Zhong ("Zhong Rebuttal"), p. 1.

¹⁰⁶ Zhong Rebuttal, p. 2.

¹⁰⁷ Zhong Rebuttal, p. 3.

¹⁰⁸ BGE Ex. 12, Surrebuttal Testimony of Robert W. Munley ("Munley Surrebuttal"), p. 4.

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

stated that “[i]n the unlikely event that some residual oil did leak into the Patapsco River, however, it would be bioremediated by naturally occurring bacteria present in the ten feet of riverbed covering the underground pipes.”¹¹¹

63. Witness Munley saw no need for Staff’s additional condition that would preclude BGE from ever seeking cost recovery in the unlikely event that there is an environmental or other liability associated with the retired underground pipes.¹¹² In his view the additional condition is inappropriate because BGE should not be precluded from cost recovery of future liabilities associated with a transmission line asset that was in service for decades.¹¹³

64. The subject of the decommissioning or abandonment of the existing submarine pipes was discussed at length at the evidentiary hearing. Witness Meling testified that in his opinion the approximately 15,000 gallons of mineral oil that might remain in the abandoned pipes will pose little or no threat to the environment, well into the future.¹¹⁴ Witness Meling recited three factors supporting his opinion: (1) the estimate of the 15,000 gallons is conservative and, based on lab testing, as much as 98 percent of the oil might be removed;¹¹⁵ (2) the water in the pipes being under negative pressure meaning that the greater probability would be that water from outside the pipes would infiltrate the pipes as opposed to water in the pipes exiting the pipes are carrying some residual amount of oil into the environment;¹¹⁶ and (3) the natural environment consisting of ten feet of fill and silt providing the potential for biodegradation.¹¹⁷

¹¹¹ *Id.*

¹¹² *Id.* at 5.

¹¹³ *Id.*

¹¹⁴ Tr. at 26.

¹¹⁵ Tr. at 29-30.

¹¹⁶ Tr. at 30-31.

¹¹⁷ Tr. at 31-32.

65. Witness Meling claimed that the underground pipes “are in good shape as far as any engineering tests have determined,”¹¹⁸ however, Witness Casey subsequently stated that he is not aware of any testing that can be done to determine the level of corrosion in an underground steel pipe.¹¹⁹

66. Witness Meling stated that the pipes have been equipped with cathodic protection during their entire life which is meant to prevent the corrosion and rusting of the pipes.¹²⁰ Witness Meling testified that it is his understanding that BGE intends to keep the cathodic protection of the pipes active and in place.¹²¹

67. Witness Meling explained that based on the testing that was done to explore the possibility of introducing water containing microbes into the pipes, he believes that there is going to be microbiological life in the Patapsco River that would consume the mineral oil and render it essentially harmless.¹²² Witness Meling clarified that BGE decided not to pursue the biodegradation option of introducing microbe-containing water into the pipes because BGE now believes that the same biochemical process would take place naturally outside of the pipes.¹²³ Witness Meling maintained that there are microbes in the river water that will consume the oil naturally despite the fact that the river water is 10 feet above the pipes.¹²⁴ He testified that the soil under the river is saturated and would itself contain microbes, and that in any event eventually the oil would rise to a level where it would encounter plenty of microbes that would

¹¹⁸ Tr. at 27.

¹¹⁹ Tr. at 114.

¹²⁰ Tr. at 27.

¹²¹ Tr. at 28.

¹²² *Id.*

¹²³ *See* Tr. at 34-37.

¹²⁴ Tr. at 37-38.

find the oil an attractive food source.¹²⁵ Witness Meling described the environmental impacts associated with removing the existing pipes. His opinion is that the environmental impacts associated with oil leaking at some point in the future is minor when compared to the impacts of removing the existing pipes.¹²⁶

68. On cross examination by Staff, BGE Witness Munley testified that an excerpt from the ERD depicts that in addition to the five 10-inch pipes that BGE proposes to abandon, there is a 24-inch gas main in close proximity (within 5 feet) to them, as well as a 72-inch water main.¹²⁷ Witness Munley testified at some point in the future either or both of these other pipes might be repaired or replaced at which time the five 10-inch pipes could be disturbed.¹²⁸

69. With regard to the five 10-inch pipes, Witness Munley stated that they could be subject to corrosion but that the expected corrosion rate is very small because they are buried under ten feet of soil without a lot of access to elemental oxygen.¹²⁹ Witness Munley went on to state that in BGE's experience buried steel doesn't corrode because air and moisture doesn't get down deep enough; similarly BGE expects the same lack of corrosion activity because of the ten feet of soil covering the pipes.¹³⁰ Witness Munley testified that after the process to remove as much of the mineral oil as possible is completed, some natural air will fill a portion of the pipes.¹³¹ However,

¹²⁵ Tr. at 37-40.

¹²⁶ Tr. at 48.

¹²⁷ Tr. at 54-55, 59. The water line and the gas and transmission pipelines were installed as a joint BGE/Baltimore City project in the 1970s. Tr. at 81.

¹²⁸ Tr. at 56-58.

¹²⁹ Tr. at 58-59.

¹³⁰ Tr. at 59.

¹³¹ Tr. at 82-83.

this air shouldn't cause the pipes to corrode from the inside because the pipes are coated on the inside with epoxy.¹³²

70. Notably, Witness Munley testified that the current plan is not to continue the cathodic protection that has protected the pipes for the entirety of their service life.¹³³ Witness Munley stated that it would be feasible to maintain cathodic protection of the abandoned pipes; he estimated that it might cost \$50,000 to install the necessary modifications.¹³⁴

71. PPRP Witness Stewart testified that PPRP's final licensing conditions do not address the decommissioning of the existing pipes because historically PPRP has never required decommissioning on a transmission line.¹³⁵ Witness Stewart stated that PPRP determined that the alternative of leaving the existing pipes in the ground was better than removing them because it had the least environmental risks in the near term and in the future.¹³⁶ However, Witness Stewart also testified that PPRP did not perform an in-depth analysis of the oil that would remain in the pipes; the state agencies involved found BGE's plan of leaving 15,000 gallons in the abandoned pipes reasonable.¹³⁷ Accordingly, PPRP did not seek to revise its recommendations with respect to the decommissioning of the existing underground pipes because it found the environmental risk presented by the residual oil to be very small.¹³⁸

72. I find that, subject to PPRP's recommended Licensing Conditions, the record reflects no likely adverse impacts to water quality due to the Project. The Project incorporates

¹³² Tr. at 83.

¹³³ Tr. at 84.

¹³⁴ Tr. at 85-86.

¹³⁵ Tr. at 117-118.

¹³⁶ Tr. at 119.

¹³⁷ Tr. at 126-127.

¹³⁸ See Tr. at 133-134.

decommissioning the existing on-land facilities and underwater cables, however, while the on-land facilities will be removed, the underwater cables will be abandoned in place. The record reflects that removing the pipes would have significant environmental impacts, an adverse impact to shipping traffic, and high costs. Decommissioning the pipes in place is less impactful, at least in the short term, and less expensive.

73. However, the record reflects that between 3,000 and 15,000 gallons of mineral oil will remain in the abandoned pipes. Although BGE believes the steel pipes are in good condition, this information, according to BGE, is not readily verified. Moreover, the good condition of the pipes may be in large part due to the cathodic protection they have had throughout their service life. To date, the pipes have been under pressure and presumed to not be exposed to air (oxygen). However, the process to remove the mineral oil and put the pipes under negative pressure will likely result in air inside the pipes, the effect of which is not certain. Although BGE provided testimony that the negative pressure would lessen the likelihood of the oil leaking, the effect of corrosion over time is not known, and it is thus not known whether at some point, mineral oil leaking into the soil surrounding the pipe could occur.

74. The testing that was performed indicated that microbes *in river water* would consume oil that might leak out of the pipes. There was testimony that microbes in the river water-saturated soil in the ten feet of subsurface material would similarly consume any leaking oil, however, the degree of saturation was not specified and thus whether sufficient microbiological life would exist to consume the oil prior to its entering the river itself is not clear. Witness Meling testified that the oil leaking into the soil would take time to enter the water. On this record, there is at least the potential for up to 15,000 gallons of mineral oil to enter riverbed soil, which, even over a number of years, would not be desirable.

75. These pipes, although abandoned, remain BGE's responsibility, and the CPCN cannot be construed as approval for BGE to abandon the pipes in perpetuity. Nor can the CPCN be construed as a determination as to the reasonableness and prudence of abandoning the pipes beyond the near term. This CPCN shall not be construed as a finding as to the reasonableness of BGE's future actions with respect to the abandoned pipes. Cost recovery associated with removal of the pipes at a future time and/or any necessary environmental remediation is left for a future determination by the Commission. An additional licensing condition will be imposed on the CPCN to address these issues.¹³⁹

76. Prior to commencing the decommissioning of the existing submarine Harbor Crossing cable pipes, BGE shall provide to PPRP and Staff a detailed decommissioning plan for review and comment. The plan shall include information on the potential for removal of the cable pipes in the future should other existing infrastructure in the Patapsco River bed located in proximity to the cable pipes need to be removed or replaced. Although removing the pipes at this time would cause significant environmental impacts, should other pipes in the vicinity (the 72" Baltimore City water line and/or BGE's 24" gas line) be repaired or removed, such that the riverbed will be subject to the disturbance that is being avoided now, removal of the existing 10" steel pipes may be deemed more reasonable and prudent at that time.

77. The plan shall describe the procedures that BGE will incorporate to minimize the risk of failure of the cable pipes under future conditions and any impacts that could result therefrom. BGE indicated that cathodic protection of the existing steel pipes would be discontinued once the pipes are no longer in service. However, Witness Meling's belief that abandoning the pipes presents little or no risk to the environment was based, at least in part, on his understanding that

¹³⁹ Attachment C.

cathodic protection would remain in effect, which Witness Munley indicated was feasible. Based on the rough estimate BGE provided, the cost of providing cathodic protection to the abandoned pipes represents a small fraction of the total cost of the Project. Because cathodic protection seems to be why Witness Munley believes the pipes are not corroded,¹⁴⁰ and corrosion of the pipes could have a negative impact on the riverbed, the plan that BGE provides to PPRP and Staff shall discuss the feasibility of continuing cathodic protection and whether such continued protection of decommissioned pipes can be considered reasonable and prudent. The plan shall also provide for future reporting by BGE should BGE become aware of any new technology or method for testing the integrity of buried pipes, or should BGE come aware that the condition of the cable pipes has deteriorated to the point of likely failure.

78. In the event any party is unsatisfied with the proposed decommissioning plan as set forth by BGE, the party may seek revisions to the plan and a determination from the Commission as to a final decommissioning plan.

79. In the event of a future failure of the cable pipes, if a liability is imposed on BGE as a result of its decision to abandon the cable pipes under the Patapsco River bed and BGE seeks to recover associated costs in customer rates, BGE shall seek a prudence and cost recovery determination from the appropriate state or federal agency and notify PPRP, Staff, and OPC of such filing when made.

¹⁴⁰ Witness Munley testified that deeply buried pipes do not corrode because air and moisture doesn't get down deep enough however, he also testified that water is more likely to enter the corroded pipes than mineral oil to leak out, so the degree of moisture in the soil surrounding the pipes is in question. Moreover, Witness Meling used the saturation of the soil with river water to support the concept of bioremediation, rendering Witness Munley's opinion that moisture would not get deep enough to corrode the pipes somewhat in conflict with Witness Meling's opinion. The record does not contain enough information to resolve how the degree of saturation of the 10 feet of riverbed soil over the pipes might affect the likelihood of corrosion.

80. The likelihood of some sort of future interference with the decommissioned cables by other parties or with other infrastructure is not found to be great. Subject to the licensing condition to provide a decommissioning plan to PPRP and Staff containing the above elements, I find that abandonment of the existing pipes as proposed by BGE, will not present undue risks to water quality.

B. Consideration of PUA § 7-207(f) Factors

1. Need to Meet Existing and Future Demand

81. According to Applicant, the existing transmission line, including the underground Harbor Crossing cables, was installed in 1976.¹⁴¹ The Harbor Crossing consists of five 10-inch diameter steel pipes; each pipe contains three oil-impregnated, paper-insulated copper transmission cables and is filled with pressurized mineral oil.¹⁴² The pipes make up two circuits that are critical to the reliability and stability of BGE's bulk electric system.¹⁴³ Tests have revealed electrical arcing in the pipes, an indicator that specific failure mechanisms are active, and the remaining cable service life is limited.¹⁴⁴ Applicant asserts that the Project is thus needed to maintain the integrity and reliability of the double-circuit 230 kV transmission loop around BGE's electric distribution service territory, mitigating potential overloads.¹⁴⁵

82. PPRP Witness Ricardo R. Austria provided a technical assessment on the need for and alternatives to the Project. Witness Austria stated that the need to ensure reliability and stability is an important consideration for the electric grid should the existing Harbor Crossing cables fail

¹⁴¹ Application, p. 4.

¹⁴² Application, p. 4.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 4-5.

¹⁴⁵ *Id.* at 5.

in a manner that results in the outage of both circuits of the Brandon Shores-Riverside 230 kV transmission line, referred to as the No-Build alternative.¹⁴⁶ Witness Austria testified that BGE's load flow studies show significant reliability issues with the No-Build alternative.¹⁴⁷ Witness Austria stated that there is open question as to whether the grid could operate reliably if the retirement of the Harbor Crossing cables was planned for rather than the result of failure, however PJM Interconnection, L.L.C. (PJM) has not conducted the separate sensitivity study needed to answer this question.¹⁴⁸ Witness Austria explained that given the classification of the Project as a PJM Supplemental Project, PJM is not required to conduct a study of the Planned Retirement alternative which he believes would provide clarity to the assessment of need for the Project.¹⁴⁹ Based on the assessment of the No-Build alternative, Witness Austria concluded that there is a need to address the reliability impacts ensuing from a failure of the Harbor Crossing cables.¹⁵⁰

83. Staff Witness Zhong agreed that BGE had adequately demonstrated the need for the Project. Witness Zhong stated that while BGE might be able to continue to operate its transmission system when both Harbor Crossing cables are out of service, the operation would not be sustainable without significant reliability implications.¹⁵¹ Witness Zhong testified that maintaining the 230 kV ring is needed to avoid the thermal/voltage reliability criteria violations on the existing 230 kV Harbor line for identified North American Electric Reliability

¹⁴⁶ PPRP Ex. 6, p. 4.

¹⁴⁷ PPRP Ex. 6, p. 6.

¹⁴⁸ PPRP Ex. 6, p. 6-7.

¹⁴⁹ PPRP Ex. 6, p. 8.

¹⁵⁰ PPRP Ex. 6, p. 15.

¹⁵¹ Staff Ex. 2, p. 15.

Corporation (NERC) contingencies.¹⁵² He noted that BGE used PJM's Regional Transmission Expansion Planning (RTEP) load flow models which forecast five years in the future, and that therefore Staff's is confident that the necessity for the project was evaluated for current and future needs.¹⁵³

84. I find that the record reflects that the Project is needed to meet existing and future demand for electric service.

2. Alternatives Considered

85. For construction related to a new overhead transmission line, PUA §7-207(f)(1)(ii) requires the Commission to duly consider alternative routes that the applicant considered, including the estimated capital and operating costs of each alternative route and a statement of the reason why the alternative route was rejected. Although the Project incorporates a new overhead transmission line across the Patapsco River, this overhead transmission line replaces the existing underground Harbor Crossing on basically the same route. PUA §7-207(f)(1)(ii) is intended to apply to new transmission lines, not replacements of existing lines. Thus the Project does not implicate PUA §7-207(f)(1)(ii). Regardless, a review of the alternatives BGE considered is worthwhile.

86. Applicant contracted a study to evaluate alternatives for the replacement of the underground cable system, including tunneling, attachment of cables to the Key Bridge, jet plowing, reconductoring of the pipes, and an overhead crossing.¹⁵⁴ The best underground alternative was deemed to be a new jet plow installation, however, this alternative had a high

¹⁵² Staff Ex. 2, p. 15.

¹⁵³ Tr. at 150-151.

¹⁵⁴ Application, p. 18.

environmental impact, a more adverse impact to shipping traffic, and was more costly to build and maintain.¹⁵⁵ Applicant ultimately determined that the preferred alternative was to construct an overhead portion of the line across the Patapsco River adjacent to the existing underwater portion of the line.¹⁵⁶

87. PPRP found that the Project is estimated to cost much more than other recent underwater transmission lines on a per mile basis.¹⁵⁷ At the hearing, BGE Witness Munley testified that two main elements of the Project which cause it to be expensive are vessel collision protection structures (this transmission line will no longer be buried under the subsurface) and the amount of load that is being delivered in the crossing.¹⁵⁸

88. Once Applicant determined that an overhead option was the preferred alternative, it evaluated further options of routing and design.¹⁵⁹ Two routes on the other (Chesapeake Bay) side of the Key Bridge were considered, however both routes were longer; would involve greater complications in design, engineering, and construction due, in part, to deeper water on the Chesapeake Bay side of the Key Bridge; would require more and larger in-water structures and more piles and, consequently, greater river-bottom disturbance; and would have higher installation and maintenance costs.¹⁶⁰

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ PAR at 14.

¹⁵⁸ Tr. at 73-74.

¹⁵⁹ Application, p. 19.

¹⁶⁰ Application, p. 19.

89. After reviewing the alternatives considered by BGE, PPRP Witness Austria recommended approval of the Project as proposed.¹⁶¹ Staff Witness Zhong concurred that the Project as proposed is the best alternative to replace this aging infrastructure.¹⁶²

90. I find that the record reflects that the Project is the best alternative for replacing the existing underground transmission line.

3. Agreements with PJM

91. PUA § 7-207(f)(2)(i) provides that the Commission must require as an ongoing condition of the CPCN that the Applicant comply with all relevant agreements with PJM, or its successors, related to the ongoing operation and maintenance of the overhead transmission line. PJM operates the Bulk Energy System (BES) that includes the double circuit Brandon Shores-Riverside 230 kV transmission line. The Project is under consideration by PJM as a Supplemental Project, and as such is not required to address PJM criteria (system reliability, operational performance or economics). However, BGE must comply with the PJM Planning Manual V. Design, Application, Maintenance, and Operation Technical Requirements, as well as several agreements as identified by BGE Witness Munley.¹⁶³

92. In accordance with PUA § 7-207(f)(2)(i), as an ongoing condition of the CPCN, the Applicant shall comply with all relevant agreements with PJM, or its successors, related to the ongoing operation and maintenance of the overhead transmission line.

¹⁶¹ PPRP Ex. 6, p. 15.

¹⁶² Staff Ex. 2, p. 25.

¹⁶³ See Tr. at 74-75.

4. Obligations Imposed by NERC and FERC

93. PUA § 7-207(f)(2)(ii) provides that the Commission must require as an ongoing condition of the CPCN that the Applicant comply with all obligations imposed by the NERC¹⁶⁴ and the FERC related to the ongoing operation and maintenance of the overhead transmission line.

94. In response to a data request, BGE stated that it will comply with all NERC requirements.¹⁶⁵ At the hearing in this matter, BGE Witness Munley testified that he is aware of the NERC and FERC requirements and that BGE must adhere to its normal transmission system agreements applicable to the Project.¹⁶⁶

95. In accordance with PUA § 7-207(f)(2)(i), as an ongoing condition of the CPCN, the Applicant shall comply with all obligations imposed by the NERC and the FERC related to the ongoing operation and maintenance of the overhead transmission line.

5. Construction on Existing Brownfields Site / Easement / Tower Structure

96. PUA § 7-207(f)(3) provides that the Commission must require the Applicant identify whether the subject overhead transmission line is proposed to be constructed on (i) an existing brownfields site; (ii) property that is subject to an existing easement; or (iii) a site where a tower structure or components of a tower structure used to support an overhead transmission line exist.

97. PUA § 7-207(a)(2) provides that “Brownfields site” means: (i) a former industrial or commercial site identified by federal or State laws or regulation as contaminated or polluted; (ii) a closed landfill regulated by the Department of the Environment; or (iii) mined land.

¹⁶⁴ PUA § 7-207(f)(2)(ii) refers to the entity as North America Electric Reliability Council. NERC (North American Electric Reliability Corporation) is the successor to the National Electric Reliability Council.

¹⁶⁵ PPRP Ex. HS-5.

¹⁶⁶ Tr. at 74-75.

98. At the hearing, BGE Witness Casey testified that the Project will be constructed on BGE's Riverside facility which is registered with the State as a brownfield site.¹⁶⁷ Witness Meling clarified that MDE maintains a brownfield master inventory online, and listed within that inventory is the 170-acre Riverside property.¹⁶⁸ The property meets the definition of a "Brownfields site" under PUA § 7-207(a)(2)(i) because it a former industrial or commercial site identified by federal or State laws or regulation as contaminated or polluted.¹⁶⁹ As such, the Applicant has identified that the subject overhead transmission line is proposed to be constructed on an existing Brownfields site.

99. In its Application, BGE stated that it would need to secure a 0.51 acre easement across Maryland Port Authority-owned property on the Hawkins Point side of the Patapsco River.¹⁷⁰ For the monopoles to be located in the Patapsco River, BGE stated that it will secure the rights to construct, own and operate the transmission infrastructure through the permitting process, but that easement rights are not applicable to the in-water structures.¹⁷¹ At the hearing, Witness Casey indicated that BGE is working towards closing easement negotiations.¹⁷² The Applicant has identified that the overhead transmission line is not proposed to be constructed on property that is subject to an existing easement; rather the overhead transmission line will be constructed on property that is owned by BGE or property on which BGE obtains an easement.

100. In response to a Staff data request, BGE stated that it "examined the potential to use an existing transmission line of another company but determined that there are no such existing

¹⁶⁷ Tr. at 108.

¹⁶⁸ Tr. at 155-156.

¹⁶⁹ Tr. at 156.

¹⁷⁰ Application at 13.

¹⁷¹ PPRP Ex. HS-5.

¹⁷² Tr. at 109-110.

transmission lines convenient to the service area that could serve as an alternative to the construction of the proposed overhead segment.”¹⁷³ As such, the Applicant has identified that the subject overhead transmission line is not proposed to be constructed on a site where a tower structure or components of a tower structure used to support an overhead transmission line exist.

C. Other Considerations

1. Project Cost

101. As noted by PPRP in the PAR, BGE estimates the capital cost of the Project to be approximately \$232 million, which PPRP equated to about \$115 million per mile.¹⁷⁴ According to PPRP, recent underwater transmission projects have cost considerably less on a per mile basis.¹⁷⁵ However, as set forth above, a new underwater crossing (jet plow installation) was not considered because, according to BGE, that alternative had a high environmental impact, a more adverse impact to shipping traffic, and was more costly to build and maintain.¹⁷⁶

102. As a Supplemental Project, 100% of the costs will be allocated to customers in the BGE zone of PJM. Staff Witness Zhong testified that BGE estimates that the wholesale revenue requirement in the BGE transmission zone ranges from a high of \$28.8 million in year two and ratably decreases over the 50-year life of the Project.¹⁷⁷ Witness Zhong explained that the Annual Transmission Revenue Requirement (ATTR) is the amount of revenue a company must recover to recover costs associated with its transmission system, as calculated in its transmission formula rate for the upcoming rate year. Witness Zhong testified that from a rate perspective, a

¹⁷³ PPRP Ex. HS-5.

¹⁷⁴ PAR at 14.

¹⁷⁵ PAR at 14.

¹⁷⁶ *Id.*

¹⁷⁷ Staff Ex. 2 at 18.

high point of \$4,480 per MW-Year also occurs in year two and ratably declines over the life of the Project as the related assets depreciate.¹⁷⁸ He stated that compared to BGE's ATTR for 2019 (\$230,595,535) with the network integration transmission service rate of \$35,762/MW-Year), the proposed Project is estimated to be about 12% of the current network and integration transmission service rate.¹⁷⁹ BGE agreed that Witness Zhong's computation was correct.¹⁸⁰ Witness Zhong testified that he was not concerned that 12% of the current network and integration termination service rate was an unreasonably high percentage.¹⁸¹

103. The record reflects that the Project is estimated to cost \$232 million, a cost that will be borne by ratepayers. Although the Project will be costly, it is a replacement of critical transmission infrastructure.

2. Ecological Impacts

104. The Patapsco River in the Project area has been impacted heavily by human activities. Water quality is less than standards for some constituents. Nonetheless, a wide variety of fish and other aquatic species may be found in the area. Similarly, a wide variety of avian fauna may also be identified in the area at any given time. However, the Project site and surrounding area would not be considered a high-value ecological area in most respects.¹⁸²

¹⁷⁸ Staff Ex. 2 at 19.

¹⁷⁹ Staff Ex. 2 at 19.

¹⁸⁰ Tr. at 103, 112-113.

¹⁸¹ Tr. at 143-144.

¹⁸² Application, p. 21.

a. Aquatic Resources

105. PPRP Witness Stewart testified that the amount of sediment resuspension from pile driving is not expected to have any significant impact to biota, and neither construction nor operation is likely to result in impacts to aquatic resources from land-based sediment.¹⁸³ Witness Stewart stated that significant impacts to fish populations are likely without closure periods and other mitigation measures, and the additional structures in the waterway could affect migratory fish passage.¹⁸⁴ Witness Stewart testified that construction and operation will not likely result in impacts to shellfish because the area of bottom blocked by the Project is very small compared to the total benthic habitat available, and noted that the new pilings actually provide additional hard surface substrate for some species.¹⁸⁵ She testified that construction and operation are also not likely to result in long-term impacts to phytoplankton or zooplankton.¹⁸⁶ Witness Stewart stated that marine mammals are infrequent and transitory in the Baltimore Harbor, and sea turtles do not nest in the area, so the potential for interactions with construction vessels or noise impacts is small, however, NOAA's National Marine Fisheries Service (NMFS) will provide guidance and reporting requirements to BGE.¹⁸⁷ Witness Stewart testified that impacts to benthic resources are likely, and noted that loss of even a small amount of high-quality benthos is a concern because of the wide extent of degraded conditions in the Harbor.¹⁸⁸ Witness Stewart clarified at the hearing that even though there would be some loss to benthos resources, it would temporary and

¹⁸³ PPRP Ex. 2 at 10-11.

¹⁸⁴ PPRP Ex. 2 at 11.

¹⁸⁵ PPRP Ex. 2 at 12.

¹⁸⁶ PPRP Ex. 2 at 12.

¹⁸⁷ PPRP Ex. 2 at 12-13.

¹⁸⁸ PPRP Ex. 2 at 13.

insignificant.¹⁸⁹ Witness Stewart stated that there are no current or historical submerged aquatic vegetation beds located in or close enough to the construction zone to be affected by construction activities.¹⁹⁰

b. Wetland and Critical Area Resources

106. Witness Stewart testified that the Project is located in and will affect tidal wetlands, the Chesapeake Bay Critical Area buffer surrounding these wetlands, and freshwater wetlands in or adjacent to the Critical Area.¹⁹¹ Witness Stewart indicated that both temporary and permanent impacts are unavoidable.¹⁹² She testified that 0.08 acres of palustrine scrub-shrub wetlands will be permanently converted to emergent wetlands at Hawkins Point, and 0.41 acres of palustrine forested wetland will be permanently converted to an emergent wetland at Sollers Point.¹⁹³ Conversion of non-tidal wetlands to a lower functional type requires in-kind mitigation at a ratio determined by MDE. Witness Stewart testified that the Project will be constructed within the Critical Area, with five towers placed in tidal waters and the remaining three on adjacent lands that are also included in the Critical Area. BGE must obtain a license for occupancy of State Tidal Wetlands from the Board of Public Works (BPW) for the Project to proceed.¹⁹⁴

¹⁸⁹ Tr. at 129.

¹⁹⁰ PPRP Ex. 2 at 13.

¹⁹¹ PPRP Ex. 2 at 14.

¹⁹² PPRP Ex. 2 at 14.

¹⁹³ PPRP Ex. 2 at 14.

¹⁹⁴ PPRP Ex. 2 at 15.

c. Terrestrial Resources

107. Witness Stewart testified that because the Project entails substantial construction in the floodplain of the Patapsco River, there will be impacts to floodplains.¹⁹⁵ Witness Stewart stated that there are no forest stands at Hawkins Point and the three forest stands at Sollers Point will be avoided by the Project, thus no mitigation is required.¹⁹⁶ She noted that several invasive plants were found within the Project area are likely to spread into areas affected by construction disturbance and reduce the area of native plant habitat that can support a diverse wildlife community.¹⁹⁷ PPRP recommended that vegetation management protocols that control invasive species be implemented.

d. Wildlife Resources

108. Witness Stewart testified that impacts to wildlife are unlikely though minor impacts to birds are possible.¹⁹⁸ PPRP determined that the likelihood of a significant impact during construction is small and that no specific construction mitigation is required except for waterfowl. During operation, BGE must mitigate for potential bird electrocution by using isolation standards, project against collision through the use of line marking spheres, and follow clear Avian Management Program Guidelines to prevent or remediate nest construction on the transmission structures. PPRP recommended that pile-driving and above water construction of towers located in the designated waterfowl concentration areas be suspended during the overwintering period (November 15 to March 1) to limit the potential impact from construction

¹⁹⁵ PPRP Ex. 2 at 15.

¹⁹⁶ PPRP Ex. 2 at 16.

¹⁹⁷ PPRP Ex. 2 at 16-17.

¹⁹⁸ PPRP Ex. 2 at 17.

noise and vibration on seabirds and waterfowl.¹⁹⁹ At the hearing, Witness Stewart testified that she is confident that the Licensing Condition 10 incorporates her recommendations, and that various federal and State permits that will be required reinforce PPRP's recommendations.²⁰⁰

109. The record reflects that the Project will have unavoidable impacts on tidal wetlands, non-tidal wetlands, and the Chesapeake Bay Critical Area which will require appropriate mitigation and permitting, and implementation of certain vegetation management protocols. Licensing Condition 1 requires BGE to comply with all applicable local, State, and federal laws and regulations including those governing activities conducted in wetlands and wetland buffer, and waterway construction. Licensing Conditions 7 and 8 deal more specifically with permitting/licensing for construction in wetlands, waterways and floodplains, and Licensing Condition 9 sets forth vegetation management procedures. Licensing Condition 10 sets forth required approvals and construction limitations for protection of wildlife, and Condition 11 outlines requirements for construction in the Chesapeake Bay Critical Area. Condition 12 requires monitoring for invasive species and Condition 13 contains requirements related to pollinator habitat. PPRP concluded that if its Licensing Conditions are included as part of the CPCN, the Project can be constructed while avoiding significant environmental impacts.²⁰¹

110. The record reflects that, subject to the Licensing Conditions, including without limitation, BGE's compliance with applicable local, State and federal laws and regulations, the Project can be constructed while avoiding significant environmental impacts.

¹⁹⁹ PPRP Ex. 2 at 18.

²⁰⁰ See Tr. 129-132.

²⁰¹ PAR at 27.

3. Harbor Activity and Safety

111. BGE stated that it worked with the Maryland Port Authority (MPA) to review potential impacts of Project construction on commercial shipping traffic in Baltimore Harbor.²⁰² BGE recognized that the harbor pilots have an interest in where the various barges and cranes will be located within the authorized work areas as well as the scheduled movement of supply barges bringing pipe piles, concrete, tower structures, and other construction materials to those work areas. Once the towers are in place, helicopters will be used to string the optical ground wire (OPGW) and high-voltage wires across the spans between the tower structures. For reasons of safety, this work will also need to be closely coordinated with MPA and the pilots, as well as Maryland Transportation Authority (MDTA), as such an unusual activity will pose a potential distraction to drivers crossing the Key Bridge.

112. BGE stated that the final design will include navigational and Federal Aviation Administration (FAA) lighting on the towers, and that during construction temporary lighting on all vessels and in-water structures will be deployed in accordance with government regulations and standards.²⁰³

113. PPRP noted that BGE is coordinating staging and construction of the Project with all stakeholders involved in Port of Baltimore operations, and that with appropriate planning no adverse effects to commercial maritime traffic are anticipated.²⁰⁴ PPRP recommended that BGE communicate all construction activities to the U.S. Coast Guard for publication in its weekly “Local Notice to Mariners” (Licensing Condition 20).²⁰⁵ PPRP found that after construction,

²⁰² ERD at 4-72.

²⁰³ ERD at 4-72.

²⁰⁴ PAR at 31.

²⁰⁵ PAR at 31.

navigation in the Fort McHenry Channel will be largely unchanged from current conditions because the channel between support structures will be unchanged and new structures will be marked by navigation beacons.²⁰⁶

114. PPRP stated that disruptions to commuter traffic from land-based construction should be mitigated to the extent possible by scheduling these activities during non-peak hours, and that no ground transportation impacts are expected from operation of the transmission line.²⁰⁷

115. The record reflects that, subject to the Licensing Conditions, including without limitation, BGE's compliance with applicable local, State and federal laws and regulations, the Project will not adversely impact activities or safety in Baltimore Harbor.

4. Noise

116. In the ERD, Applicant noted that sound levels measured near the Project site were shown to be typical of an urban area where vehicular traffic predominates.²⁰⁸ Applicant acknowledged that some construction activities may have the potential to temporarily impact surrounding and nearby properties.²⁰⁹ Construction is expected to take 24 months; on-land activities will include site clearing, excavation, foundation work, and installation of structures and electrical transmission lines, and may overlap. Construction of structures within the Patapsco River will involve use of deck and crane barges, tug boats, and crew vessels; and almost all of the towers will require driven piles, all of which will produce noise.²¹⁰

²⁰⁶ PAR at 31.

²⁰⁷ PAR at 31.

²⁰⁸ ERD at 4-54.

²⁰⁹ ERD at 4-54.

²¹⁰ ERD at 4-54.

117. PPRP noted that most of the Project noise will be associated with pile driving for the towers. PPRP stated that all tower locations are expected to comply with COMAR for maximum allowable daytime noise levels during construction.²¹¹ PPRP noted that Towers 1, 2, 4, 5 and 6 are expected to comply with nighttime maximum allowable noise levels for all construction activities except pile driving, and that Tower 3 is also expected to comply with nighttime maximum allowable noise levels for all construction activities including pile driving.²¹² PPRP noted, however, that Towers 7 and 8 are not expected to comply with nighttime maximum allowable noise levels for construction activities.²¹³ This analysis assumes no sound attenuation from obstacles and a sound pressure level of 101 dBA at 50 feet for pile driving, as published in the Federal Highway Administration Construction Noise Handbook.²¹⁴ PPRP explained that due to the distance and unpredictable wind patterns, existing sound attenuation barriers on Broening Highway are not expected to provide reliable sound attenuation during the construction phase.²¹⁵ PPRP stated that the applicant is expected to mitigate noise impacts by using standard construction techniques and limiting construction activities to daytime hours at the necessary towers, to the extent feasible.²¹⁶

118. Licensing Condition 1.k. provides that BGE shall construct and operate the proposed Project in compliance with the Maryland noise regulations and with relevant Anne Arundel County, Baltimore County and Baltimore City noise ordinances. Licensing Condition 22

²¹¹ PAR at 31.

²¹² PAR at 31.

²¹³ PAR at 31.

²¹⁴ PAR at 31.

²¹⁵ PAR at 31.

²¹⁶ PAR at 31.

additionally provides that BGE shall design, construct, and operate the Project in a manner that complies with all applicable City, County, and State noise regulations.²¹⁷

119. Subject to Licensing Conditions 1.k. and 22, the record reflects that construction and operation of the Project will have no significant noise impacts.

5. Electromagnetic Field (EMF)

120. PPRP noted that the distance between the proposed overhead line and the Key Bridge is no less than 688 feet, and that at this distance, BGE stated there are no anticipated electromagnetic field effects beyond background levels expected to impact vehicles traveling on the bridge.²¹⁸ Licensing Condition 23 – Electromagnetic Field (EMF) – provides that within three months of energizing the transmission line, BGE shall submit to PPRP and the Commission the actual EMF values measured at the foot of the towers and at the Key Bridge, while the transmission line is operating under typical loading conditions along with related testing data. At the hearing, Witness Stewart testified that PPRP expects the EMF measurements to be negligible, but would like to verify this information.²¹⁹

VI. Conclusion

121. I find that, subject to PPRP's Licensing Conditions, and Staff's initial licensing conditions (Attachment B) that the CPCN be contingent upon (i) notification to the Commission when the overhead transmission lines have been placed into service; and (ii) notification to the Commission when the existing under-river cables have been permanently retired from service,

²¹⁷ PPRP Ex. HS-2.

²¹⁸ PAR at 33.

²¹⁹ Tr. at 133.

and the additional recommended licensing condition outlined herein (together, “Final Licensing Conditions”), a grant of a CPCN to construct the Project is in the public interest. The Applicant’s compliance with the Final Licensing Conditions will result in the Project satisfying the federal and State environmental laws and local permitting regulations and ordinances. Accordingly, I hereby grant Baltimore Gas and Electric, Inc. a CPCN, subject to the Final Licensing Conditions attached hereto and incorporated hereby, to reconstruct a portion of the existing 230 kV electric transmission line that runs between the Riverside Substation in Baltimore County, Maryland and the Brandon Shores Substation in Anne Arundel County, Maryland by replacing the existing underground pipe-type cable along an approximately 2.25 mile stretch between Hawkins Point and Sollers Point beneath the Patapsco River with overhead wire and eight support structures, and removing the existing transmission terminal stations on Hawkins Point and Sollers Point that transition the current line from overhead to underground will be removed, abandoning in place the existing underground portion of the electric transmission line.

IT IS THEREFORE, this 12th day of February, in the Year Two Thousand Twenty,

ORDERED (1) That the Application of Baltimore Gas and Electric, Inc. is hereby granted;

(2) That a Certificate of Public Convenience and Necessity, subject to the Final Licensing Conditions attached hereto collectively as Attachments A, B, and C, and incorporated herein, is hereby granted;

(3) That any party wishing to appeal this Proposed Order pursuant to Section 3-113(d)(2) of the Public Utilities Article shall file a notice of appeal and associated memorandum by February 21, 2020, with reply memoranda due by February 28, 2020; and

(4) That if the Commission does not modify or reverse the Proposed Order or initiate further proceedings as provided in Section 3-114(c)(2)(ii) of the Public Utilities Article, this Proposed Order will become a final order of the Commission on March 14, 2020.

/s/ Kristin Case Lawrence
Kristin Case Lawrence
Public Utility Law Judge
Public Service Commission of Maryland

Attachments