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October 23, 2025

BY ELECTRONIC FILING
Hon. Bernard J. Logan, Clerk
State Corporation Commission
Tyler Building, 1st Floor
1300 East Main Street
Richmond, VA 23219

Re: Application of Virginia Electric and Power Company for Approval and Certification of Electric Transmission Facilities: Charlottesville-Dooms #233 and #291 Rebuild – Case No. PUR-2025-00189.

Dear Mr. Logan:

Please find enclosed for electronic filing in the above-captioned proceeding the application for approval of electric facilities on behalf of Virginia Electric and Power Company (the "Company"). This filing contains the Application, Appendix, Direct Testimony, and DEQ Supplement, including attachments.

As indicated in Section II.A.12.b of the Appendix, electronic copies of the Virginia Department of Transportation "General Highway Map" for the City of Charlottesville, Albemarle County, and Augusta County, as well as the digital geographic information system ("GIS") map required by Va. Code § 56-46.1, which is Attachment II.A.2 to the Appendix, were provided via an e-room to the Commission's Division of Public Utility Regulation.

If you have any questions or need further information, please feel free to contact us.

Sincerely,

/s/ Timothy L. McHugh
Timothy L. McHugh

/s/ Andrew J. Flavin
Andrew J. Flavin

Enclosures

cc: William H. Chambliss, Esq.
Mr. David Essah (without enclosures)
Mr. Neil Joshipura (without enclosures)
Mr. Michael A. Cizenski (without enclosures)

David J. DePippo, Esq.
Charlotte P. McAfee, Esq.
Viktoriia De Las Casas, Esq.
Kyara Rivera Rivera, Esq.

Dominion Energy®

Application, Appendix, DEQ Supplement, Direct Testimony and Exhibits of Virginia Electric and Power Company

Before the State Corporation Commission of Virginia

Charlottesville-Dooms #233 and #291 Rebuild

Application No. 355

Case No. PUR-2025-00189

Filed: October 23, 2025

Volume 1 of 2

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

Charlottesville-Dooms
Lines #233 and #291 Rebuild

Application No. 355

Case No. PUR-2025-00189

Filed: October 23, 2025

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2025-00189
	)	
	)	
For approval and certification of electric transmission facilities: Charlottesville-Dooms Lines #233 and #291 Rebuild	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES: CHARLOTTESVILLE-DOOMS LINES #233 AND #291 REBUILD

Pursuant to § 56-46.1 of the Code of Virginia ("Va. Code") and the Utility Facilities Act, Va. Code §§ 56-265.1 *et seq.*, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), by counsel, files with the State Corporation Commission of Virginia (the "Commission") this application for approval and certification of electric transmission facilities (the "Application"). In support of its Application, Dominion Energy Virginia respectfully shows as follows:

1. Dominion Energy Virginia is a public service corporation organized under the laws of the Commonwealth of Virginia furnishing electric service to the public within its Virginia service territory. The Company also furnishes electric service to the public in portions of North Carolina. Dominion Energy Virginia's electric system—consisting of facilities for the generation, transmission, and distribution of electric energy—is interconnected with the electric systems of neighboring utilities and is a part of the interconnected network of electric systems serving the continental United States. By reason of its operation in two states and its interconnections with other utilities, the Company is engaged in interstate commerce.

2. In order to perform its legal duty to furnish adequate and reliable electric service, Dominion Energy Virginia must, from time to time, replace existing transmission facilities or construct new transmission facilities in its system.

3. In this Application, in order to maintain the structural integrity and reliability of the networked transmission system in compliance with North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes, in the City of Charlottesville and Albemarle and Augusta Counties, to:

- Rebuild, within the existing cleared right-of-way or on Company-owned property, approximately 22.3 miles of 230 kilovolt ("kV") Charlottesville-Dooms Lines #233 and #291, starting at the existing Charlottesville Substation and ending at the existing Dooms Substation, by removing the majority[1] of the existing structures, which are lattice structures and steel monopole structures, and replacing them with new galvanized steel and weathering steel structures.

- Replace the existing conductors on Lines #233 and #291 with new bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength ("ACSS/TW/HS") conductors with 3948 Amperes ("A") ampacity, with a minimum summer emergency rating of 1573 Mega-Volt Amperes ("MVA").

(collectively, the "Rebuild Project").[2]

4. The proposed Rebuild Project is needed to comply with mandatory NERC Reliability standards and to maintain reliable service to accommodate overall growth in the area. Specifically, the Rebuild Project is needed to resolve an overloading issue on Lines #233 and #291, which run on the same structures from the existing Charlottesville Substation to the existing Dooms Substation. PJM's Regional Transmission Expansion Plan ("RTEP") 2028

[1] Seven structures are white-painted steel monopole structures; they will be replaced with galvanized steel monopole structures as part of the Rebuild Project.

[2] The Company will also perform work associated with the Rebuild Project at the Charlottesville, Dooms, Barracks Road, Hydraulic Road, and Crozet Substations. The Company considers the work at these substations to qualify as an "ordinary extension[] or improvement[] in the usual course of business (i.e., "ordinary course") pursuant to § 56-265.2 A 1 of the Va. Code and, therefore, does not require approval pursuant to Va. Code § 56-46.1 B or a certificate of public convenience and necessity ("CPCN") from the Commission. Because this work is not a component of the proposed Rebuild Project, the costs associated with this work are not included in the total Rebuild Project costs.

Summer Generator Deliverability Analysis identified that loss of 500 kV Cunningham-Elmont Line #553 will lead to different segments of Lines #233 and #291 being overloaded between 101-106%. The proposed solution, which was awarded to Dominion Energy Virginia through PJM's Competitive Planning Process and listed in the 2022 Open Window #3, which opened on February 24, 2023, and closed on May 31, 2023, is to rebuild Lines #233 and #291. Both of these lines currently use approximately 22.3 miles of a combination of 1233.6 ACSS, double bundled 636 ACSR, and double bundled 545.6 ACAR conductors with a minimum summer rating of 589 MVA. The Company proposes to rebuild them using new bundled 768.2 ACSS/TW/HS conductors with 3948A ampacity, with a minimum summer emergency rating of 1573 MVA.

5. The total length of the existing cleared right-of-way or Company-owned property to be used for the Rebuild Project is approximately 22.3 miles. The existing cleared right-of-way and Company-owned property are adequate to construct the proposed Rebuild Project. Given the availability of existing cleared rights-of-way, the statutory preference to use existing right-of-way, and the additional costs and environmental impacts that would be associated with the acquisition and construction of new rights-of-way, the Company did not consider any alternate routes requiring new rights-of-way for the Rebuild Project.

6. The desired in-service date for the Rebuild Project is November 30, 2029. The Company estimates it will take approximately 40 months for detailed engineering, materials, procurement, permitting, and construction of the Rebuild Project after a final order from the Commission. Accordingly, to support this estimated pre-construction activity timeline and construction plan, the Company respectfully requests a final order on the Rebuild Project by July 2026. Should the Commission issue a final order by July 2026, the Company estimates that construction of the Rebuild Project should begin by January 2027, and be completed by November

30, 2029. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Project. This schedule is contingent upon obtaining the necessary permits and outages. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process, as well as the ability to schedule outages or unpredictable delays due to labor shortages and/or materials/supply issues based on other extensive project work ongoing in the vicinity of the Rebuild Project.

7. In addition, the Company is monitoring actively regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how they could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The U.S. Fish and Wildlife Service ("USFWS") issued the final guidance, replacing the interim guidance, on October 23, 2024, and the final guidance was fully implemented November 30, 2024. The Company is reviewing the final guidance to the extent it applies to the Company's projects and will coordinate with USFWS during the permitting stage. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tricolored bat ("TCB"). On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the Endangered Species Act. USFWS extended its Final Rule issuance target from September 2023 to September 2024, but as of the date of this filing, the TCB listing decision has not been issued. The Company is tracking actively this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

8. Any adjustments to the Rebuild Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests that the

Commission issue a final order approving both a desired in-service target date (*i.e.*, November 30, 2029) and an authorization sunset date (*i.e.*, November 30, 2030) for energization of the Rebuild Project.

9. The total estimated conceptual cost of the Rebuild Project is approximately $120.2 million (in 2025 dollars).

10. The proposed Rebuild Project will afford the best means of meeting the continuing need for reliable service while reasonably minimizing adverse impact on the scenic, environmental, and historic assets of the area.

11. Based on consultations with the Virginia Department of Environmental Quality ("DEQ"), the Company has developed a supplement ("DEQ Supplement") containing information designed to facilitate review and analysis of the proposed facilities by the DEQ and other relevant agencies. The DEQ Supplement is attached to this Application.

12. Based on the Company's experience, the advice of consultants, and a review of published studies by experts in the field, the Company believes that there is no causal link to harmful health or safety effects from electric and magnetic fields generated by the Company's existing or proposed facilities. Section IV of the Appendix provides further details on Dominion Energy Virginia's consideration of the health aspects of electric and magnetic fields.

13. Section V of the Appendix provides a proposed route description for public notice purposes and a list of federal, state, and local agencies and officials that the Company has notified or will notify about the Application.

14. In addition to the information provided in the Appendix and the DEQ Supplement, this Application is supported by the pre-filed direct testimony of Company Witnesses David Osorio Garcia, Sarah Gilroy, George Brimmer, Hannah Hurst, and Lucas DuPont filed with this Application.

15. Because this Application seeks approval to rebuild existing lines primarily within existing cleared right-of-way or on Company-owned property, the Company respectfully requests, in the interest of judicial economy, that the Commission issue an Order for Notice and Comment setting forth a procedural schedule in this proceeding without a scheduled evidentiary hearing, but with an opportunity for interested persons to request an evidentiary hearing if the issues raised cannot be addressed adequately without a hearing. An Order for Notice and Comment will still allow the Company, Commission Staff, and any interested parties that join the proceeding to develop a complete record without prejudice, as Commission Staff or any party may file with the Commission a request for hearing.

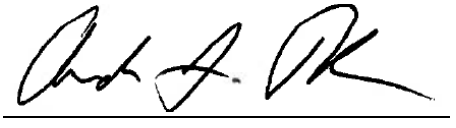
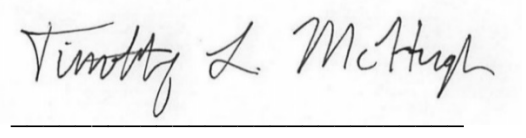
WHEREFORE, Dominion Energy Virginia respectfully requests that the Commission:

a) direct that notice of this Application be given as required by Va. Code § 56-46.1;

b) approve pursuant to Va. Code § 56-46.1 the construction of the Rebuild Project; and

c) grant a certificate of public convenience and necessity for the Rebuild Project under the Utility Facilities Act, Va. Code §§ 56-265.1, *et seq.*, by July 31, 2026, if possible.

VIRGINIA ELECTRIC AND POWER COMPANY

By:  

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Counsel for Virginia Electric and Power Company

October 23, 2025

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

Charlottesville-Dooms
Lines #233 and #291 Rebuild

Application No. 355

Appendix

Containing Information in Response to
"Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia"

Case No. PUR-2025-00189

Filed: October 23, 2025

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EXECUTIVE SUMMARY

In order to maintain the structural integrity and reliability of the networked transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes, in the City of Charlottesville and Albemarle and Augusta Counties, to:

- Rebuild, within the existing cleared right-of-way or on Company-owned property, approximately 22.3 miles of 230 kilovolt ("kV") Charlottesville-Dooms Lines #233 and #291, starting at the existing Charlottesville Substation and ending at the existing Dooms Substation, by removing the majority[1] of the existing structures, which are lattice structures and steel monopole structures, and replacing them with new galvanized steel and weathering steel structures.

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(collectively, the "Rebuild Project").[2]

The proposed Rebuild Project is needed to comply with mandatory NERC Reliability standards and to maintain reliable service to accommodate overall growth in the area. Specifically, the Rebuild Project is needed to resolve an overloading issue on Lines #233 and #291, which run on the same structures from the existing Charlottesville Substation to the existing Dooms Substation. PJM's Regional Transmission Expansion Plan ("RTEP") 2028 Summer Generator Deliverability Analysis identified that loss of 500 kV Cunningham-Elmont Line #553 will lead to different segments of Lines #233 and #291 being overloaded between 101-106%.[3] The proposed solution, which was awarded to Dominion Energy Virginia through PJM's Competitive Planning Process and listed in the 2022 Open Window #3, which opened on February 24, 2023, and closed on May 31, 2023, is to rebuild Lines #233 and #291. Both of these lines currently use approximately 22.3 miles of a combination of 1233.6 ACSS, double bundled 636 ACSR, and double bundled 545.6 ACAR conductors with a minimum summer rating of 589 MVA. The Company proposes to rebuild them using new bundled 768.2 ACSS/TW/HS conductors with 3948A ampacity, with a minimum summer emergency rating of 1573 MVA.

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[1] Seven structures are white-painted steel monopole structures; they will be replaced with galvanized steel monopole structures as part of the Rebuild Project.

[2] The Company will also perform work associated with the Rebuild Project at the Charlottesville, Dooms, Barracks Road, Hydraulic Road, and Crozet Substations. The Company considers the work at these substations to qualify as an "ordinary extension[] or improvement[] in the usual course of business (*i.e.*, "ordinary course") pursuant to § 56-265.2 A 1 of the Code of Virginia ("Va. Code") and, therefore, does not require approval pursuant to Va. Code § 56-46.1 B or a certificate of public convenience and necessity ("CPCN") from the Commission. Because this work is not a component of the proposed Rebuild Project, the costs associated with this work are not included in the total Rebuild Project costs.

[3] *See* Section I.D.

The total length of the existing cleared right-of-way or Company-owned property to be used for the Rebuild Project is approximately 22.3 miles. The existing cleared right-of-way and Company-owned property are adequate to construct the proposed Rebuild Project. Given the availability of existing cleared rights-of-way, the statutory preference to use existing rights-of-way, and the additional costs and environmental impacts that would be associated with the acquisition and construction of new rights-of-way, the Company did not consider any alternate routes requiring new rights-of-way for the Rebuild Project.

The total estimated conceptual cost of the Rebuild Project is approximately $120.2 million (in 2025 dollars).

The desired in-service date for the Rebuild Project is November 30, 2029.[4] The Company estimates it will take approximately 40 months for detailed engineering, materials, procurement, permitting, and construction of the Rebuild Project after a final order from the Commission. Accordingly, to support this estimated pre-construction activity timeline and construction plan, the Company respectfully requests a final order on the Rebuild Project by July 2026. Should the Commission issue a final order by July 2026, the Company estimates that construction of the Rebuild Project should begin by January 2027, and be completed by November 30, 2029. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Project. This schedule is contingent upon obtaining the necessary permits and outages. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process, as well as the ability to schedule outages or unpredictable delays due to labor shortages and/or materials/supply issues based on other extensive project work ongoing in the vicinity of the Rebuild Project.

In addition, the Company is monitoring actively regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how they could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The U.S. Fish and Wildlife Service ("USFWS") issued the final guidance, replacing the interim guidance, on October 23, 2024, and the final guidance was fully implemented November 30, 2024. The Company is reviewing the final guidance to the extent it applies to the Company's projects and will coordinate with USFWS during the permitting stage.

The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tricolored bat ("TCB"). On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the Endangered Species Act. USFWS extended its Final Rule issuance target from September 2023 to September 2024, but as of the date of this filing, the TCB listing decision has not been issued. The Company is tracking actively this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

Any adjustments to the Rebuild Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date.

[4] PJM documents for the Rebuild Project indicate an earlier in-service date, see Attachments I.J.1 and I.J.3. The Company is working with PJM to update the projected in-service date as indicated in this Appendix.

Accordingly, for purposes of judicial economy, the Company requests that the Commission issue a final order approving both a desired in-service target date (*i.e.*, November 30, 2029) and an authorization sunset date (*i.e.*, November 30, 2030) for energization of the Rebuild Project.[5]

[5] The Company notes that this request is consistent with the Commission's findings in other recent proceedings. *See Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: 230 kV Rebuild, Reconductoring, and New Line Projects to Network Takeoff Substation*, Case No. PUR-2024-00131, Final Order (Mar. 19, 2025) (approving an in-service date of August 1, 2027, and a CPCN sunset date of August 1, 2028, for energization of that project in Ordering Paragraph (3)); *Application of Virginia Electric and Power Company for approval of electric transmission facilities: Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005*, Case No. PUR-2024-00105, Final Order (Feb. 28, 2025) (approving an in-service date of January 1, 2027, and a CPCN sunset date of January 1, 2028, for energization of that project in Ordering Paragraph (8)); *Application of Virginia Electric and Power Company for approval of electric transmission facilities: 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line #5002, 500 kV and 230 kV Aspen-Golden Lines #5001 and #2333, 500-230 kV Golden Substation, and Lines #2081/#2150 Loop*, Case No. PUR-2024-00032, Final Order (Feb. 6, 2025) (approving an in-service date of June 1, 2028, and a CPCN sunset date of June 1, 2029, for energization of that project in Ordering Paragraph (8)); *Application of Virginia Electric and Power Company for approval of electric transmission facilities: 230 kV Apollo-Twin Creeks Lines, and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations*, Case No. PUR-2024-00044, Final Order (Feb. 5, 2025) (approving an in service date of September 30, 2028, and a CPCN sunset date of September 30, 2029, for energization of that project in Ordering Paragraph (8)).

I. NECESSITY FOR THE PROPOSED PROJECT

A. State the primary justification for the proposed project (for example, the most critical contingency violation including the first year and season in which the violation occurs). In addition, identify each transmission planning standard(s) (of the Applicant, regional transmission organization ("RTO"), or North American Electric Reliability Corporation) projected to be violated absent construction of the facility.

Response: The proposed Rebuild Project is necessary to comply with mandatory NERC Reliability Standards and to maintain reliable service to accommodate overall growth in the area. The Rebuild Project is needed to resolve the overloading issue on Lines #233 and #291, identified in PJM's RTEP 2028 Summer Generator Deliverability Analysis due to loss of 500 kV Cunningham-Elmont Line #553. The current rating for Lines #233 and #291 is limited by approximately 22.3 miles of a combination of 1233.6 ACSS, double bundled 636 ACSR, and double bundled 545.6 ACAR conductors with a minimum summer rating of 589 MVA. The Rebuild Project will rebuild Lines #233 and #291 using new bundled 768.2 ACSS/TW/HS conductors with 3948A ampacity, with a minimum summer emergency rating of 1573 MVA. Replacement of this infrastructure will also allow the Company to act proactively to ensure compliance with mandatory NERC Reliability Standards and maintain reliable service to accommodate overall growth in the area. See Attachment I.A.1 for an overview map of the Rebuild Project.

Dominion Energy Virginia's transmission system is responsible for providing transmission service: (i) for redelivery to the Company's retail customers; (ii) to Appalachian Power Company, Old Dominion Electric Cooperative, Northern Virginia Electric Cooperative, Central Virginia Electric Cooperative, and Virginia Municipal Electric Association for redelivery to their retail customers in Virginia; and, (iii) to North Carolina Electric Membership Corporation and North Carolina Eastern Municipal Power Agency for redelivery to their retail customers in North Carolina (collectively, the "DOM Zone"). The Company needs to be able to maintain the overall, long-term reliability of its transmission system as its customers require more power in the future.

Dominion Energy Virginia is part of PJM Interconnection L.L.C. ("PJM"), the regional transmission organization ("RTO") that provides service to a large portion of the eastern United States. PJM currently is responsible for ensuring the reliability of, and coordinating the movement of, electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. This service area has a population of approximately 65 million and on August 2, 2006, set a record high of 166,929 megawatts ("MW") for summer peak demand, of which Dominion Energy Virginia's load portion was approximately 19,256 MW. On July 16, 2024, the DOM Zone set a record high of 23,127 MW for summer peak demand. On January 23, 2025, the DOM Zone set a winter and all-time record demand of 24,678 MW. Based on the 2025 PJM Load

Forecast, the DOM Zone is expected to grow with average growth rates of 6.3% summer and 6.0% winter over the next 10 years compared to the PJM average of 3.1% and 3.8% over the same period for the summer and winter, respectively.[6]

Dominion Energy Virginia is also part of the Eastern Interconnection transmission grid, meaning its transmission system is interconnected, directly or indirectly, with all of the other transmission systems in the United States and Canada between the Rocky Mountains and the Atlantic Coast, except for Quebec and most of Texas. All of the transmission systems in the Eastern Interconnection are dependent on each other for moving bulk power through the transmission system and for reliability support. Dominion Energy Virginia's service to its customers is extremely reliant on a robust and reliable regional transmission system.

NERC has been designated by the Federal Energy Regulatory Commission ("FERC") as the electric reliability organization for the United States. Accordingly, NERC requires that the planning authority and transmission planner develop planning criteria to ensure compliance with NERC Reliability Standards. Mandatory NERC Reliability Standards require that a transmission owner ("TO") develop facility interconnection requirements that identify load and generation interconnection minimum requirements for a TO's transmission system, as well as the TO's reliability criteria.[7]

Federally mandated NERC Reliability Standards constitute minimum criteria with which all public utilities must comply as components of the interstate electric transmission system. Moreover, the Energy Policy Act of 2005 mandates that electric utilities must follow these NERC Reliability Standards and imposes fines on utilities found to be in noncompliance up to $1.3 million a day per violation.

PJM's RTEP is the culmination of a FERC-approved annual transmission planning process that includes extensive analysis of the electric transmission system to determine any needed improvements.[8] PJM's annual RTEP is based on the effective criteria in place at the time of the analyses, including applicable standards and criteria of NERC, PJM, and local reliability planning criteria, among others.[9] Projects identified through the RTEP process are developed by the TO in coordination with PJM, and are presented at the Transmission Expansion Advisory

[6] A copy of the 2025 PJM Load Report is available at the following: https://www.pjm.com/-/media/DotCom/library/reports-notices/load-forecast/2025-load-report.pdf. *See, in particular*, page 9 (PJM) and page 34 (DOM Zone).

[7] *See* Facility Connection ("FAC") Standard FAC-001-4 (effective January 1, 2024), which can be found at https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-001-4.pdf.

[8] PJM Manual 14B (effective September 25, 2024) focuses on the RTEP process and can be found at https://www.pjm.com/-/media/DotCom/documents/manuals/m14b.pdf.

[9] *See* PJM Manual 14B, Attachment D: PJM Reliability Planning Criteria. *See supra*, n. 8 for a link to PJM Manual 14B.

Committee ("TEAC") meetings prior to inclusion in the RTEP, which is then presented for approval to the PJM Board of Managers (the "PJM Board").

Outcomes of the RTEP process include three types of transmission system upgrades or projects: (i) baseline upgrades are those that resolve a system reliability criteria violation, which can include planning criteria from NERC, Reliability First, SERC Reliability Corporation, PJM, and TOs; (ii) network upgrades are new or upgraded facilities required primarily to eliminate reliability criteria violations caused by proposed generation, merchant transmission, or long-term firm transmission service requests; and (iii) supplemental projects are projects initiated by the TO in order to interconnect new customer load, address degraded equipment performance, improve operational flexibility and efficiency, and increase infrastructure resilience.

The Rebuild Project is classified as a baseline project.

Need for the Rebuild Project

The Rebuild Project is located in the Company's Charlottesville and Blue Ridge Load Areas, which encompasses the Company's transmission facilities located in all or part of the City of Charlottesville and Augusta and Albemarle Counties. The Rebuild Project area is within the City of Charlottesville and Augusta and Albemarle Counties, in the transmission corridor approximately 22.3 miles long, leaving the existing Charlottesville Substation and ending at the existing Dooms Substation.

The Rebuild Project is needed to resolve the overloading issue on Lines #233 and #291. PJM's 2028 Summer Generator Deliverability Analysis identified that loss of 500 kV Cunningham-Elmont Line #553 will lead to different segments of Lines #233 and #291 being overloaded between 101-106%, as shown below. Attachment I.D.1 shows the results of PJM's analysis.

The proposed solution, which was awarded to Dominion Energy Virginia through PJM's Competitive Planning Process and listed in the 2022 Open Window #3, February 24, 2023, and closed on May 31, 2023, is to rebuild Lines #233 and #291. Both of these lines currently use approximately 22.3 miles of a combination of 1233.6 ACSS, double bundled 636 ACSR, and double bundled 545.6 ACAR conductors with a minimum summer rating of 589 MVA. The Company proposes to rebuild them using new bundled 768.2 ACSS/TW/HS conductors with 3948A ampacity, with a minimum summer emergency rating of 1573 MVA. This Rebuild Project was presented to PJM at the October 31, 2023, TEAC meeting (first read). See Attachment I.J.1 for relevant excerpted slides presented at the TEAC meeting. It was then again presented to PJM on December 5, 2023 (second read). See Attachment I.J.2 for relevant excerpted slides presented at the TEAC meeting.

See Attachment I.A.2, which provides the existing one-line diagram of the

transmission system in the Charlottesville and Blue Ridge Load Areas as of September 2025. Attachment I.A.3 provides the one-line diagram for the load area after the Rebuild Project.

In summary, the proposed Rebuild Project is necessary to comply with mandatory NERC Reliability Standards and the Company's planning criteria and to maintain reliable service to accommodate overall growth in the Company's Charlottesville and Blue Ridge Load Areas.

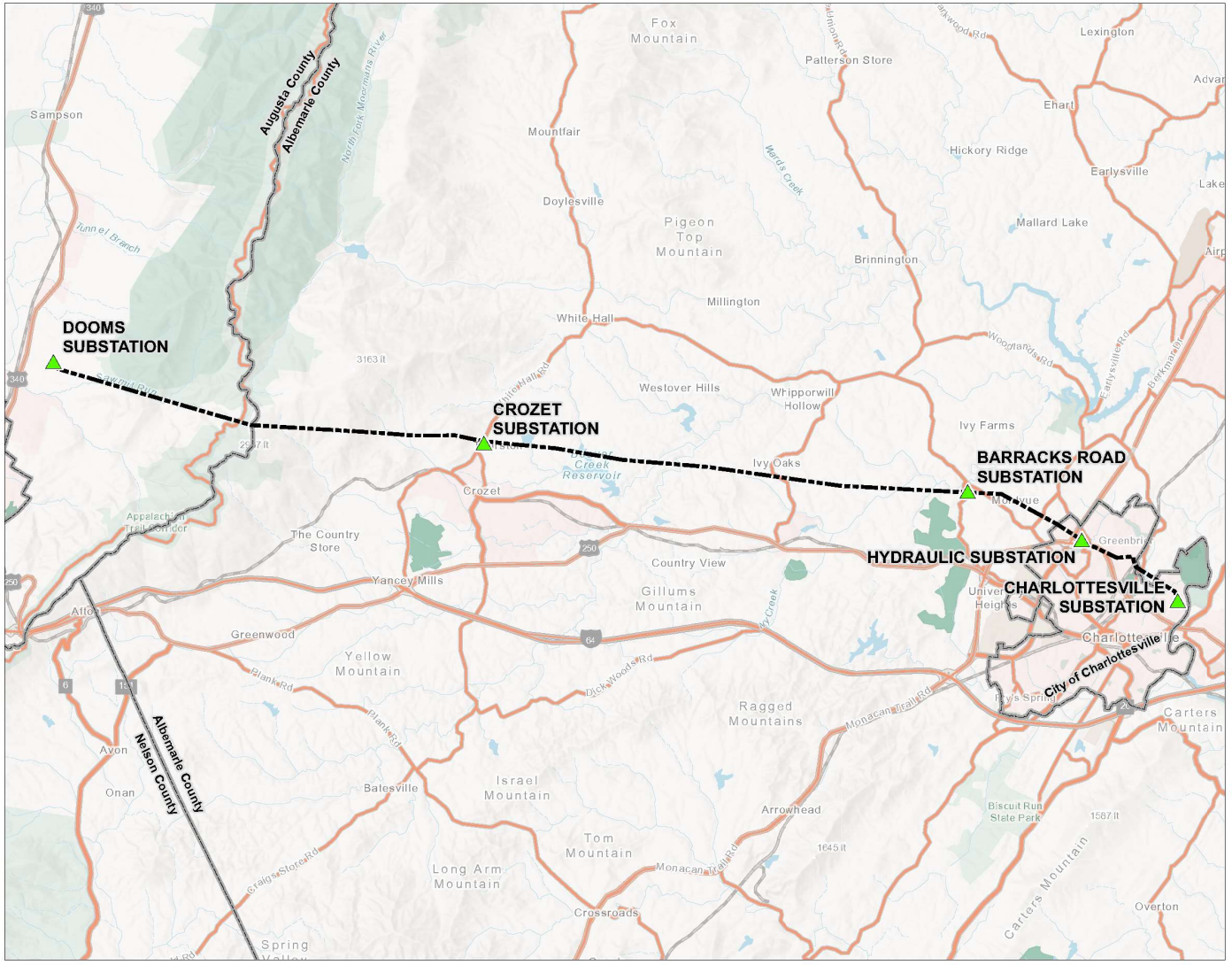


Figure No.
I.A.1

Title
Project Overview Map

Client/Project
Dominion Energy Virginia
Charlottesville – Dooms Lines #233 and #291 Rebuild

205402586

Project Location
Augusta County, Albemarle County, and City of Charlottesville, Virginia

Prepared by JFK on 2025-08-04
TR by BJW on 2025-08-04
IR by KHP on 2025-08-04

N

0 10,000 20,000 Feet

(At original document size of 11x17)
1:120,000

Substation

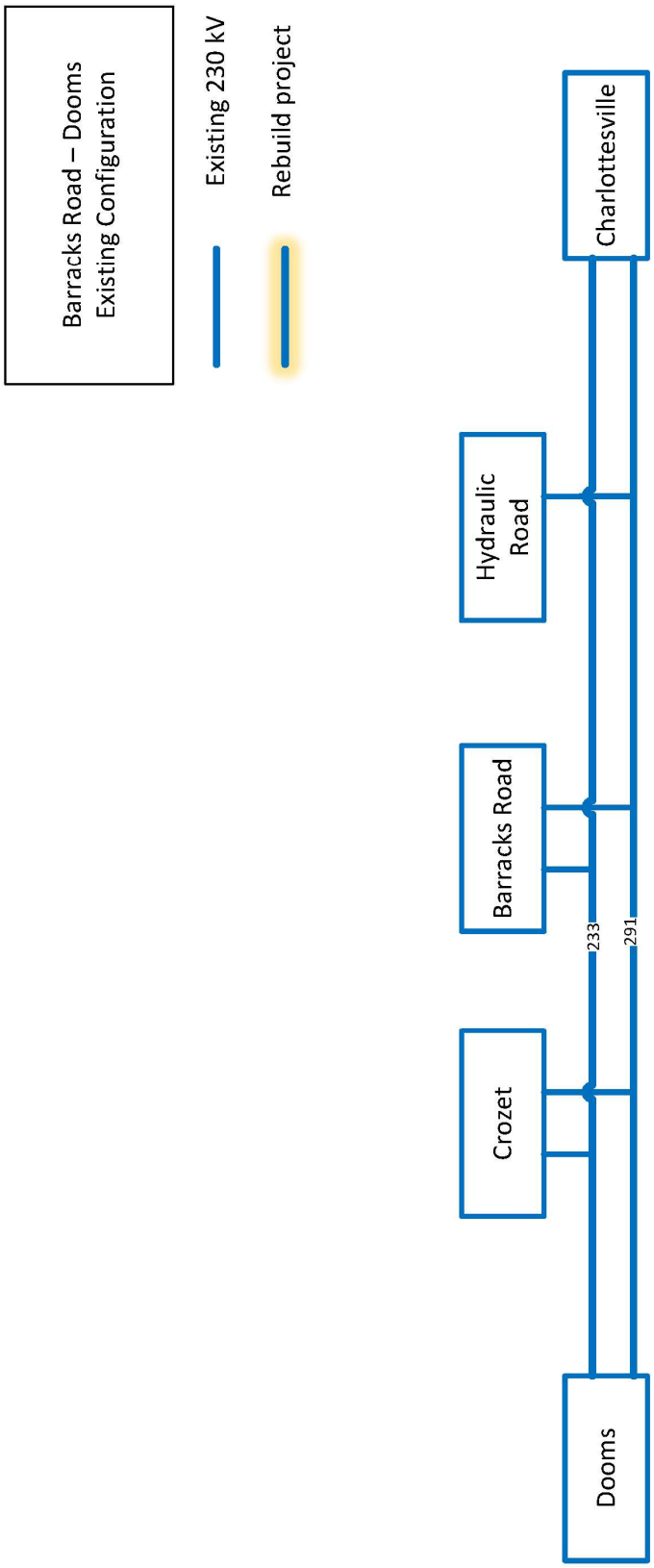
Rebuild Project

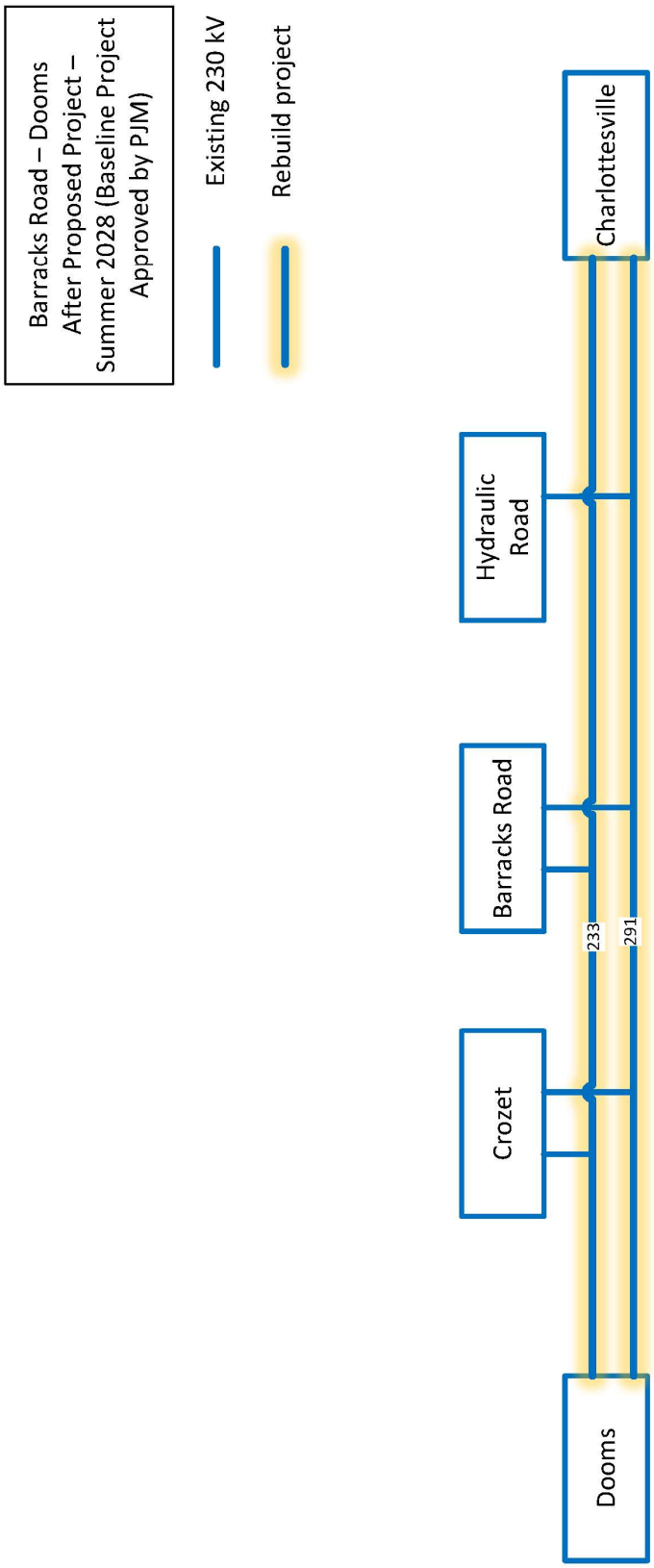
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau
3. Basemap © Esri

Stantec

Dominion Energy

Page 1 of 1


Barracks Road – Dooms
Existing Configuration
Existing 230 kV
Rebuild project
Charlottesville
Hydraulic Road
Barracks Road
Crozet
Dooms
233
291


Barracks Road – Dooms
After Proposed Project –
Summer 2028 (Baseline Project
Approved by PJM)
Existing 230 kV
Rebuild project
Charlottesville
Hydraulic
Road
Barracks Road
Crozet
Dooms
233
291

I. NECESSITY FOR THE PROPOSED PROJECT

B. Detail the engineering justifications for the proposed project (for example, provide narrative to support whether the proposed project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Applicant's system, etc.). Describe any known future project(s), including but not limited to generation, transmission, delivery point or retail customer projects, that require the proposed project to be constructed. Verify that the planning studies used to justify the need for the proposed project considered all other generation and transmission facilities impacting the affected load area, including generation and transmission facilities that have not yet been placed into service. Provide a list of those facilities that are not yet in service.

Response:

Engineering Justification for Rebuild Project

Detail the engineering justifications for the proposed project (for example, provide narrative to support whether the proposed project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Applicant's system, etc.).

For a detailed description of the engineering justification of the proposed Rebuild Project, see Section I.A.

Known Future Projects

Describe any known future project(s), including but not limited to generation, transmission, delivery point or retail customer projects, that require the proposed project to be constructed.

There are no known future projects that require the Rebuild Project to be constructed. The Rebuild Project is required to resolve the Company's overloading issue as described in Section I.A.

Planning Studies

Verify that the planning studies used to justify the need for the proposed project considered all other generation and transmission facilities impacting the affected load area, including generation and transmission facilities that have not yet been placed into service.

As part of any RTEP cycle, PJM along with the member TOs run baseline reliability analysis to identify if any potential violations exist based on projected network topology and loading. A portion of PJM Manual 14B, Section 1.4.1.1, describes the process from a high level:

PJM Manual 14B, Section 1.4.1.1, Baseline reliability analyses

> The PJM Transmission System ("PJM System") provides the means for delivering the output of interconnected generators to the load centers in the PJM energy and capacity markets. Baseline reliability analyses ensure the security and adequacy of the Transmission System to serve all existing and projected long term firm transmission use including existing and projected native load growth as well as long term firm transmission service. RTEP baseline analyses include system voltage and thermal analysis, and stability, load deliverability, and generator deliverability testing. These tests variously entail single and multiple contingency testing for violations of established NERC reliability criteria regarding stability, thermal line loadings and voltage limits

Any thermal, voltage, or generation deliverability violations will require a baseline network upgrade. Typically, during the RTEP cycle, PJM is focused on a case that is five years out in time. The Open Window for this Project, which was based on the 2022 RTEP 2027 case and subsequently tested on the 2023 RTEP 2028 case, showed multiple Generation Deliverability violations on different segments of the 230 kV Lines #233 and #291.

2022 RTEP Open Window #3 Study Results

The 2022 RTEP Open Window #3 study results, see Attachment I.D.l, show the worst violations for each monitored facility (transmission line or substation transformer). The list of violations is significantly reduced once the proposed Rebuild Project is implemented.

Facilities List

Provide a list of those facilities that are not yet in service.

Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

C. Describe the present system and detail how the proposed project will effectively satisfy present and projected future electrical load demand requirements. Provide pertinent load growth data (at least five years of historical summer and winter peak demands and ten years of projected summer and winter peak loads where applicable). Provide all assumptions inherent within the projected data and describe why the existing system cannot adequately serve the needs of the Applicant (if that is the case). Indicate the date by which the existing system is projected to be inadequate.

Response: Attachment I.G.1 shows the portion of the transmission system in the area of the proposed Rebuild Project. The existing Lines #233 and #291 are part of the Company's 230 kV network, which support the delivery of electric generation to residential and commercial customers. The portions of Lines #233 and #291 subject to this Rebuild Project are located in the approximately 22.3-mile-long transmission corridor in the City of Charlottesville and Augusta and Albemarle Counties. This electric transmission corridor interconnects the City of Charlottesville with the Central Region of Shenandoah Valley and parallels I-64. Both lines also feed three intermediate Substations: Crozet, Barracks Road, and Hydraulic Road, all of which serve Dominion Energy Virginia retail customers. The tables in Attachment I.C.1 provide the historical summer and winter loads from 2013 to 2024 and the projected summer and winter loads from 2024/2025 to 2036/2037 for the DOM Zone.

The existing Lines #233 and #291 cannot continue to adequately serve the needs of the Company and its customers due to the overloading issue as discussed in Section I.A. The Company has created a proactive plan to address the facilities, setting target completion dates for overloaded transmission lines, the Company's resources, and the need to schedule outages. The desired in-service date for completion of the Rebuild Project is November 30, 2029.

Completing the Rebuild Project will support the Company's ability to continue to provide reliable electric service to retail and wholesale customers and will support the future overall growth and system reliability in the area. See Section I.A.

Attachment I.C Charlottesville (193) and Blue Ridge (194) Load Areas

Historical Loads (Summer and Winter) in MW

Summer Loads	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Charlottesville	807.019	822.2966	802.6912	847.4516	850.6217	869.3856	802.0012	888.1798	887.6553	878.9183	889.6887	9187.4327
Blue Ridge	693.627	676.538	700.331	696.391	688.276	743.8717	689.0506	730.0155	739.3264	694.7739	670.771	754.7629

Winter Loads	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	21/22	22/23	23/24
Charlottesville	1081.288	1154.904	980.9151	1073.8	1173.797	1035.392	933.4603	900.4366	1037.283	1037.283	1134.463	1079.099
Blue Ridge	836.078	883.083	814.792	817.186	889.7369	820.3167	752.0988	695.2528	812.8497	812.8497	843.3078	893.5604

Attachment I.C Charlottesville (193) and Blue Ridge (194) Load Areas

Projected Loads (Summer and Winter) in MW

Summer Loads	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Charlottesville	938.778	955.2738	1006.65	1056.674	1134.711	1219.29	1337.945	1479.397	1649.821	1849.079	2114.762	2114.762
Blue Ridge	764.0413	768.8648	769.001	769.1705	769.1705	769.1705	769.1705	769.1705	769.1705	769.1705	769.1705	769.1705

Winter Loads	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37
Gordonsville	1112.997	1120.588	1143.334	1193.707	1264.987	1333.439	1431.412	1566.664	1728.09	1890.275	2100.961	2354.845	2354.845
Valley	905.2633	920.966	923.7194	927.5311	932.2781	938.6654	951.4011	965.4335	983.1692	1000.06	1000.06	1000.06	1000.06

I. NECESSITY FOR THE PROPOSED PROJECT

D. If power flow modeling indicates that the existing system is, or will at some future time be, inadequate under certain contingency situations, provide a list of all these contingencies and the associated violations. Describe the critical contingencies including the affected elements and the year and season when the violation(s) is first noted in the planning studies. Provide the applicable computer screenshots of single-line diagrams from power flow simulations depicting the circuits and substations experiencing thermal overloads and voltage violations during the critical contingencies described above.

Response: Please see the table below for a summary of Generation Deliverability thermal violations with worst case contingency identified in PJM's 2022 RTEP 2027 analysis. The violations are mitigated once the proposed Rebuild Project is implemented. The detailed results are provided in Attachment I.D.1.

Monitored Facility	Contingency Name	2027 RTEP Worst Loading (%)	Loading (%) after Project
314794 6DOOMS 230 314752 6CROZET2 230 1	DVP_P1-2: LN 553_SRT-A	104.74%	<90%
314752 6CROZET2 230 314741 6BARRCK1 230 1	DVP_P1-2: LN 553_SRT-A	104.35%	<90%
314751 6CROZET1 230 314742 6BARRCK2 230 1	DVP_P1-2: LN 553_SRT-A	103.08%	<90%
314741 6BARRCK1 230 314749 6CHARLVL 230 1	DVP_P1-2: LN 553_SRT-A	101.56%	<90%
313826 6HYDRAULIC 230 314749 6CHARLVL 230 1	DVP_P1-2: LN 553_SRT-A	90.06%	<90%

2028 SUM_Gen_Deliv_06302023_DOM

RTEP files 2023: PJM Generator Delivery Results Summary

Monitored Facility	Worst Contingency Name	Final AC %LD	Loading (%) after project
314794 6DOOMS 230 314752 6CROZET2 230 1	DVP_P1-2: LN 553_SRT-A	105.07	<90
314752 6CROZET2 230 314741 6BARRCK1 230 1	DVP_P1-2: LN 553_SRT-A	104.79	<90
314751 6CROZET1 230 314742 6BARRCK2 230 1	DVP_P1-2: LN 553_SRT-A	103.27	<90
314741 6BARRCK1 230 314749 6CHARLVL 230 1	DVP_P1-2: LN 553_SRT-A	101.29	<90
314742 6BARRCK2 230 313826 6HYDRAULIC 230 1	DVP_P1-2: LN 553_SRT-S	100.69	<90

GenDelivResults Comparison – REVISED ON 9/8/2025

			Final AC % Loading	
Monitored Facility	**Areas**	**Scenario**	**2027_Base**	**Rebuild**
223937 DICK 230 230 314290 6EDFERRY 230 1	**233/345**	**DVP_P1-2: LN 514_SRT-A**	106.54	106.52
			108.73	108.71
		DVP_P4-2: 51482_SRT-A	106.94	106.93
		DVP_P4-2: 514T595_SRT-A	111.32	111.31
235110 01MDWBRK 500 313440 8VINTHIL 500 1	**201/345**	**DVP_P1-2: LN 541_SRT-S**	95.39	95.37
		DVP_P4-2: 541T569_SRT-S	100.33	100.32
		DVP_P4-2: H1T541_SRT-S	95.52	95.51
242701 05LEESVI 138 314667 4ALTVSTA 138 1	**205/345**	**Base Case**	105.39	105.38
			98.79	98.78
242792 05SCOTSV 138 314746 4BREMO 138 1	**205/345**	**DVP_P4-2: 547T566_SRT-A**	98.11	98.08
		DVP_P4-2: 56602_SRT-A	96.64	96.61
313052 6DESPER 230 313046 3LOUISA PUMP 230 1	**345**	**DVP_P1-2: LN 2088_SRT-A**	94.09	94.09
313393 8MARS 500 313399 6MARS 230 1	**345**	**DVP_P1-2: LN 2172_SRT-A**	99.87	99.87
			99.73	99.73
		DVP_P1-2: LN 9345_SRT-A	114.31	114.31
			114.12	114.12
		DVP_P1-3: 8BRAMBLETON-TX#2_SRT-A	101.99	101.99
			101.82	101.82
		DVP_P1-3: 8GOOSE CREEK-TX#1_SRT-A	104.48	104.48
			104.34	104.34
		DVP_P1-3: 8WSHNGSTAR-TX#1_SRT-A	114.31	114.31
			114.12	114.12

		DVP_P2-2: BRAMBLETON B5_SRT-S	95.87	95.87
		DVP_P4-2: H1T595_SRT-A	109.1	109.1
		DVP_P4-6: 9345T1_SRT-A	107.45	107.45
		DVP_P4-6: 9345T2_SRT-A		107.45
		DVP_P4-6: 9346T1_SRT-A	107.57	107.57
		DVP_P4-6: 9347T1_SRT-A	107.57	107.57
		DVP_P4-6: WISHI 9345T2_SRT-A	107.45	
		DVP_P7-1: LN 2137-2172_SRT-A	94.32	94.32
		DVP_P7-1: LN 2172-2183_SRT-A	99.85	99.85
		DVP_P7-1: LN 227-274_SRT-S	105.46	105.46
313399 6MARS 230 313746 6SOJOURNER 230 1	345	DVP_P1-2: LN 2095_SRT-A	109.76	109.76
			109.2	109.2
		DVP_P7-1: LN 2095-2137_SRT-A	94.3	94.3
313399 6MARS 230 313805 6SHELLHORN1 230 1	345	DVP_P1-2: LN 2218_SRT-A	112.2	112.2
			111.57	111.57
		DVP_P1-2: LN 9349_SRT-A	118.39	118.39
			117.76	117.76
		DVP_P4-2: 934962-1_SRT-A	96.77	96.77
		DVP_P4-2: 934962-2_SRT-A	96.77	96.77
		DVP_P7-1: LN 227-274_SRT-S	97.7	97.7
313440 8VINTHIL 500 314125 6VINTHIL 230 2	345	DVP_P4-2: H1T2114_SRT-A	98.77	98.77
313440 8VINTHIL 500 314913 8LOUDOUN 500 1	345	DVP_P1-2: LN 5XX-2_SRT-S	103.46	103.46
			100.68	100.68
		DVP_P4-2: 502T5XX-2_SRT-A	94.03	94.04
		DVP_P4-2: H1T5XX-2a_SRT-A	101.74	101.75
		DVP_P7-1: LN 2222-5XX-2_SRT-A	98.83	98.83
		DVP_P7-1: LN 535-2140_SRT-S	96.25	96.25
		DVP_P7-1: LN 535-2176_SRT-S	97.66	97.66
313724 3TERRA 115 314576 3FIVE PT 115 1	345	DVP_P1-2: LN 1031_SRT-A	98.48	98.48
313724 3TERRA 115 314592 3PANTEGO 115 1	345	DVP_P1-2: LN 189_SRT-A	98.46	98.46
313746 6SOJOURNER 230 313822 6RUNWAY 230 1	345	DVP_P1-2: LN 2095_SRT-A	102.97	102.98
			102.41	102.41
313752 6TAKEOFF 230 313774 6LINC PRK 230 1	345	DVP_P1-2: LN 9234_SRT-A	94.52	94.52
			94.05	94.05
		DVP_P4-2: 2095T9349_SRT-A	95.01	95.01
313805 6SHELLHORN1 230 313841 6ENTERPRIS 230 1	345	DVP_P1-2: LN 2188_SRT-A	101.89	101.89
			101.19	101.19
313805 6SHELLHORN1 230 314098 6GREENWAY1 230 1	345	DVP_P1-2: LN 2031_SRT-A	100.42	100.42
			99.71	99.71
		DVP_P1-2: LN 2186_SRT-A	106.53	106.53

			105.82	105.83
313815 6SPRINGH 230 314079 6RESTON 230 1	345	DVP_P1-2: LN 202_SRT-A	111.02	111.03
			111.3	111.3
313816 6N ALEX 230 314066 6N POT YD_A 230 1	345	DVP_P4-2: 207T2097_SRT-A	98.35	98.35
313822 6RUNWAY 230 313805 6SHELLHORN1 230 1	345 345	DVP_P1-2: LN 2095_SRT-A	99.01	99.01
			98.44	98.44
313837 6SUMMIT 230 314138 6MINE RD 230 1		DVP_P1-2: LN 568_SRT-S	102.47	102.48
			101.37	101.37
313841 6ENTERPRIS 230 313804 6GREENWAY2 230 1	345	DVP_P1-2: LN 2188_SRT-A	97.64	97.64
			96.94	96.95
313859 6BELMONT 230 314072 6PL VIEW 230 1	345	DVP_P1-2: LN 227_SRT-A	103.4	103.41
			102.35	102.35
313904 6GOOSECRK 230 314006 6ASHBURA 230 1	345	DVP_P1-2: LN 2180_SRT-A	96.99	96.99
			96.74	96.74
		DVP_P1-2: LN 274_SRT-S	118.43	118.43
			118.53	118.55
		DVP_P4-2: 203T274_SRT-A	97.4	97.4
		DVP_P4-2: 2095T9349_SRT-A	96.96	96.96
		DVP_P4-2: 274T2098_SRT-S	97.13	97.13
		DVP_P4-2: 274T2130_SRT-S	96.82	96.82
		DVP_P4-4: ASHBUR SC332_SRT-S	96.8	96.8
313905 8WSHNGSTAR 500 313906 6WSHNGSTAR 230 1	345	DVP_P4-6: 9348T1_SRT-A	95.97	95.97
314004 6ASHBURN 230 314010 6BEAMEAD 230 1	345	DVP_P1-2: LN 227_SRT-A	109.23	109.23
			109.32	109.32
314006 6ASHBURA 230 314010 6BEAMEAD 230 1	345	DVP_P1-2: LN 274_SRT-S	114.73	114.72
			114.83	114.85
		DVP_P4-2: 203T274_SRT-A	94.37	94.37
		DVP_P4-2: 274T2098_SRT-S	94.11	94.11
314009 6BRADOCK 230 314052 6IDYLWOD 230 1	345	DVP_P1-2: LN 2023_SRT-A	94.03	94.03
			94.31	94.31
		DVP_P1-2: LN 2097_SRT-A	113.33	113.34
			113.6	113.6
		DVP_P1-2: LN 2112_SRT-A	95.23	95.24
			95.51	95.52
		DVP_P1-2: LN 241_SRT-A	94.44	94.44
			94.72	94.72
		DVP_P1-2: LN 248_SRT-A	95.1	95.11
			94.67	94.67
		DVP_P4-2: 243T2097_SRT-A	96.86	96.86
		DVP_P7-1: LN 2023-248_SRT-A	94.77	94.77
		DVP_P7-1: LN 2112-248_SRT-A	96.2	96.2

314010 6BEAMEAD 230 313743 6INTERCONNEC 230 1	345	DVP_P4-2: 2095T9349_SRT-A	102.53	102.53
314035 6DISCOVR 230 313774 6LINC PRK 230 1	345	DVP_P1-2: LN 9233_SRT-A	114.52	114.52
			113.89	113.89
314039 6GALLOWS A 230 314052 6IDYLWOD 230 1	345	DVP_P1-2: LN 207_SRT-A	104.07	104.08
			103.72	103.73
		DVP_P1-2: LN 9290_SRT-A	97.93	97.93
			97.65	97.65
		DVP_P4-2: 9290T248_SRT-A	98.69	98.69
		DVP_P7-1: LN 2023-248_SRT-A	96.88	96.88
		DVP_P7-1: LN 207-266_SRT-A	101.9	101.91
		DVP_P7-1: LN 2112-248_SRT-A	98.23	98.23
314041 6GLEBE 230 314185 6RADNOR 230 1	345	DVP_P4-2: 207T2097_SRT-A	134.04	134.05
		DVP_P4-2: 250T258_SRT-A	120.49	120.49
		DVP_P7-1: LN 207-266_SRT-A	96.83	96.83
		DVP_P7-1: LN 250-258_SRT-A	120.49	120.49
314067 6OCCOQUN 230 314068 6OX 230 1		DVP_P1-2: LN 9287_SRT-A	94.07	94.07
314068 6OX 230 314039 6GALLOWS A 230 1	345	DVP_P1-2: LN 207_SRT-A	107.26	107.26
			106.91	106.91
		DVP_P1-2: LN 248_SRT-A	94.93	94.93
			94.66	94.66
		DVP_P1-2: LN 561_SRT-A	94.56	94.56
			94.23	94.23
		DVP_P1-2: LN 9290_SRT-A	101.11	101.11
			100.83	100.83
		DVP_P4-2: 9290T248_SRT-A	94.14	94.14
		DVP_P7-1: LN 207-266_SRT-A	97.12	97.12
314072 6PL VIEW 230 314004 6ASHBURN 230 1	345	DVP_P1-2: LN 227_SRT-A	113.51	113.5
			113.61	113.61
314084 6SULLY 230 314035 6DISCOVR 230 1	345	DVP_P1-2: LN 9233_SRT-A	125.16	125.16
			124.48	124.48
		DVP_P4-2: 9233Y2_SRT-A	102.22	102.22
314098 6GREENWAY1 230 313751 6STRATUS 230 1	345	DVP_P1-2: LN 2031_SRT-A	94.47	94.47
		DVP_P1-2: LN 2186_SRT-A	100.52	100.52
			99.81	99.81
314099 6GI1MRUN 230 314085 6REMNGCT 230 1	345	DVP_P4-2: 207762_SRT-A	95.35	95.37
314126 6S CARL 230 314064 6N POT YD 230 1	345	DVP_P4-2: 207T2097_SRT-A	99.57	99.58
314127 6S CARLY 230 313816 6N ALEX 230 1	345	DVP_P4-2: 207T2097_SRT-A	104.88	104.89
		DVP_P4-2: 9290T248_SRT-A	96.08	96.08
314138 6MINE RD 230 314137 6FREDBRG 230 1	345	DVP_P1-2: LN 2083_SRT-S	99.97	99.97
			98.85	98.85

		DVP_P1-2: LN 568_SRT-S	98.67	98.67
			97.53	97.54
		DVP_P4-2: 208312_SRT-S	99.97	99.97
		DVP_P4-2: 208342_SRT-S	100.01	100.01
		DVP_P7-1: LN 2083-2145_SRT-S	100.07	100.07
314142 6STAFORD 230 314074 6POSSUM 230 1	345	DVP_P1-2: LN 2119_SRT-A	102.13	102.13
		DVP_P1-2: LN 2120_SRT-A	97.21	97.22
		DVP_P1-2: LN 9296_SRT-A	102.13	102.13
314197 6LDYSMITH CT 230 313837 6SUMMIT 230 1	345	DVP_P1-2: LN 2032_SRT-S	95.2	95.2
			94.72	94.72
		DVP_P1-2: LN 2089_SRT-A	95.86	95.86
			95.58	95.59
		DVP_P1-2: LN 552_SRT-S	95.99	96
			95.13	95.13
		DVP_P1-2: LN 568_SRT-S	105.31	105.31
			104.2	104.21
		DVP_P1-2: LN 581_SRT-S	96.38	96.38
			95.52	95.52
314212 6FOUR RIVERS 230 314150 6STJOHN 230 1	345	DVP_P1-2: LN 574_SRT-S	96.83	96.83
314269 6PRGEORG 230 314291 3PRGEORG 115 1	345	DVP_P7-1: LN 211-228_SRT-S	99.15	99.15
314282 6CARSON 230 314285 6CHAPARRAL T 230 1	345	DVP_P1-2: LN 563_SRT-S	96.6	96.59
		DVP_P4-2: 562T563_SRT-S	96.07	96.06
314285 6CHAPARRAL T 230 314316 6LOCKS 230 1	345	DVP_P1-2: LN 563_SRT-S	94.6	94.59
		DVP_P4-2: 562T563_SRT-S	94.37	94.37
314287 6CHESTF B 230 314276 6BASIN 230 1	345	DVP_P1-2: LN 563_SRT-S	99.18	99.17
314290 6EDFERRY 230 313911 6TWINCREEKS 230 1	345	DVP_P1-2: LN 514_SRT-A	111.36	111.34
			113.7	113.69
		DVP_P4-2: 514T595_SRT-A	97.07	97.05
314316 6LOCKS 230 314314 3LOCKS 115 2	345	DVP_P1-2: LN 205_SRT-A	103.05	103.05
			102.32	102.32
		DVP_P7-1: LN 2003-205_SRT-A	103.09	103.09
314331 6POE 230 314263 6TYLER1 230 1	345	DVP_P1-2: LN 249_SRT-A	100.48	100.48
			97.13	97.13
		DVP_P4-2: 562T563_SRT-S	96.4	96.4
314435 6SAPONY 230 314282 6CARSON 230 1	345	DVP_P1-2: LN 2012_SRT-A	104.4	104.4
		DVP_P1-2: LN 2060_SRT-A	104.31	104.31
		DVP_P1-2: LN 246_SRT-A	108.1	108.09
		DVP_P1-2: LN 570_SRT-A	109.26	109.25
		DVP_P1-2: LN 593_SRT-A	105.05	105.04
		DVP_P4-2: 246T2034_SRT-A	97.88	97.87

		DVP_P4-2: 509T570_SRT-A	95.1	95.09
314532 3OAKRI23 115 314536 3SUFFOLK 115 1	345	DVP_P4-2: 12152_SRT-A	98.88	98.88
		DVP_P4-2: 1552_SRT-A	98.84	98.84
		DVP_P4-5: L552_SRT-A	98.88	98.88
		DVP_P4-5: POE L652_SRT-A	98.88	98.88
314534 3S HAMPT 115 314541 3WATKINS 115 1	345	DVP_P1-2: LN 238_SRT-A	96.2	96.2
		DVP_P1-2: LN 246_SRT-A	94.16	94.15
314554 3BTLEBRO 115 304223 3ROCKYMT115T 115 1	340/345	DVP_P1-2: LN 2058_SRT-A	94.26	94.26
		DVP_P4-2: 2058T2167_SRT-A	97.65	97.65
		DVP_P4-3: H202_SRT-A	94.26	94.26
		DVP_P7-1: LN 2058-2181_SRT-A	140.12	140.14
314559 3CAROLNA 115 314561 6CAROLNA 230 1	345	DVP_P1-2: LN 1029_SRT-A	94.6	94.6
314563 6CLUBHSE 230 314435 6SAPONY 230 1		DVP_P1-2: LN 2012_SRT-A	103.06	103.05
		DVP_P1-2: LN 2060_SRT-A	102.97	102.96
		DVP_P1-2: LN 246_SRT-A	107.18	107.17
		DVP_P1-2: LN 570_SRT-A	108.33	108.31
		DVP_P1-2: LN 593_SRT-A	104.2	104.19
		DVP_P4-2: 246T2034_SRT-A	96.77	96.76
314569 6EARLEYS 230 314575 6NUCO TP 230 1	345	DVP_P1-2: LN 2092_SRT-A	123.58	123.58
		DVP_P1-2: LN 2126_SRT-A	102.48	102.47
		DVP_P1-2: LN 2131_SRT-A	106.46	106.45
		DVP_P1-2: LN 2201_SRT-A	98.67	98.66
		DVP_P1-2: LN 238_SRT-A	106.25	106.24
		DVP_P4-2: 2020T2144_SRT-A	100.11	100.1
		DVP_P4-2: 209222-1_SRT-A	101.04	101.04
		DVP_P4-2: 2092TZ1-036_SRT-A	101.04	101.04
314575 6NUCO TP 230 314537 6SUFFOLK 230 1	345	DVP_P1-2: LN 2092_SRT-A	118.54	118.53
		DVP_P1-2: LN 2126_SRT-A	97.43	97.42
		DVP_P1-2: LN 2131_SRT-A	101.43	101.42
		DVP_P1-2: LN 238_SRT-A	101.1	101.09
		DVP_P4-2: 2020T2144_SRT-A	95.98	95.98
		DVP_P4-2: 209222-1_SRT-A	96.92	96.91
		DVP_P4-2: 2092TZ1-036_SRT-A	96.92	96.91
314638 6ELIZ CT 230 314647 6SHAWBRO 230 1	345	DVP_P4-2: 246T247_SRT-A	95.02	95.02
314734 6CASHSCORNER 230 314758 6GORDNVL 230 1	345	DVP_P1-2: LN 2088_SRT-A	111.5	111.62
			109.1	109.21
		DVP_P1-2: LN 534_SRT-S	118.2	118.23
			118.83	118.93
		DVP_P1-2: LN 550_SRT-S	111.22	111.27
			113.65	113.75
		DVP_P1-2: LN 553_SRT-S	138.07	138.08

			142.03	142.11
		DVP_P1-2: LN 574_SRT-S	121.29	121.32
			121.79	121.85
		DVP_P4-2: 542T553_SRT-S	108.57	108.59
		DVP_P4-2: 553T564_SRT-S	105.93	105.95
		DVP_P4-2: 557T574_SRT-S	100.49	100.52
		DVP_P4-2: H1T553_SRT-S	113.07	113.08
		DVP_P4-2: H2T553_SRT-S	113.07	113.08
314735 2ALTAVISTADP 69.0 314709 2GLADYS TAP 69.0 1	345	DVP_P1-2: LN 173_SRT-A	99.35	99.35
314741 6BARRCK1 230 314749 6CHARLVL 230 1	345	DVP_P1-2: LN 553_SRT-S	96.44	
			101.29	
314742 6BARRCK2 230 313826 6HYDRAULIC 230 1		DVP_P1-2: LN 553_SRT-S	95.93	
			100.69	
314751 6CROZET1 230 314742 6BARRCK2 230 1	345	DVP_P1-2: LN 553_SRT-S	98.44	
			103.27	
314752 6CROZET2 230 314741 6BARRCK1 230 1	345	DVP_P1-2: LN 553_SRT-S	99.86	
			104.79	
314759 6HOLLYMD 230 314734 6CASHSCORNER 230 1	345	DVP_P1-2: LN 2088_SRT-A	112.45	112.57
			110.05	110.15
		DVP_P1-2: LN 534_SRT-S	119.23	119.24
			119.89	119.97
		DVP_P1-2: LN 550_SRT-S	112.27	112.31
			114.75	114.84
		DVP_P1-2: LN 553_SRT-S	139.12	139.12
			143.12	143.19
		DVP_P1-2: LN 574_SRT-S	122.29	122.31
			122.8	122.85
		DVP_P4-2: 542T553_SRT-S	109.42	109.43
		DVP_P4-2: 553T564_SRT-S	106.78	106.78
		DVP_P4-2: 557T574_SRT-S	101.32	101.33
		DVP_P4-2: H1T553_SRT-S	113.93	113.93
		DVP_P4-2: H2T553_SRT-S	113.93	113.93
314761 3PINE GLADE 115 314778 3PAY TAP 115 1	345	DVP_P1-2: LN 70_SRT-A	103.78	103.84
314766 6LOUISA 230 314232 6NO ANNA 230 1	345	DVP_P1-2: LN 2088_SRT-A	102.11	102.11
			98.65	98.65
314794 6DOOMS 230 314752 6CROZET2 230 1	345	DVP_P1-2: LN 553_SRT-S	100.19	
			105.07	
314900 8BRISTER 500 314130 6BRISTER 230 1	345	DVP_P4-2: H3T539_SRT-A	98.12	98.12
314900 8BRISTER 500 314919 8OX 500 1	345	DVP_P1-2: LN 569_SRT-S	99.84	99.84
			96.85	96.86

		DVP_P7-1: LN 569-2101_SRT-S	95.92	95.91
314901 8BATH CO 500 314991 8VALLEY SC 500 1	345	DVP_P1-2: LN 555_SRT-A	106.32	106.37
			104.25	104.3
		DVP_P7-1: LN 2168-555_SRT-A	96.2	96.22
314908 8ELMONT 500 314911 8LADYSMITH 500 1	345	DVP_P1-2: LN 576_SRT-A	97.24	97.23
		DVP_P2-2: ELMONT B1_SRT-S	99.23	99.22
		DVP_P2-2: LADYSMITH B2_SRT-S	99.31	99.3
314912 8LEXNGTN 500 314854 6LEXNGT1 230 1	345	DVP_P4-2: XT555_SRT-A	99.55	99.53
314912 8LEXNGTN 500 314856 6LEXNGT2 230 1	345	DVP_P4-2: 55502_SRT-A	100.37	100.35
314914 8MDLTHAN 500 314918 8NO ANNA 500 1	345	DVP_P1-2: LN 574_SRT-S	94.84	94.84
314916 8MORRSVL 500 313440 8VINTHIL 500 1	345	DVP_P1-2: LN 2114_SRT-A	102.73	102.73
		DVP_P1-2: LN 535_SRT-S	124.11	124.12
			121.28	121.28
		DVP_P1-2: LN 539_SRT-A	125.75	125.76
			116.92	116.93
		DVP_P1-2: LN 545_SRT-S	110.33	110.34
			109.4	109.4
		DVP_P1-2: LN 561_SRT-A	111.06	111.07
		DVP_P1-2: LN 568_SRT-S	113.76	113.76
			103.49	103.5
		DVP_P2-2: LOUDOUN B1_SRT-S	108.34	108.35
		DVP_P4-2: 545T552_SRT-S	120.21	120.22
		DVP_P4-2: H2T539_SRT-A	114.67	114.67
		DVP_P4-2: H2T545_SRT-S	123.04	123.05
		DVP_P4-2: H3T539_SRT-A	119.63	119.63
		DVP_P4-2: OX H1T539_SRT-A	114.67	114.67
		DVP_P7-1: LN 183-2101_SRT-A	98.11	98.12
		DVP_P7-1: LN 535-2114_SRT-S	126.08	126.09
314916 8MORRSVL 500 314900 8BRISTER 500 1	345	DVP_P4-2: 5XX-2T569_SRT-S	106.84	106.85
		DVP_P4-2: H2T569_MORR_SRT-S	105.46	105.47
		DVP_P4-2: H2T569_SRT-S	105.74	105.74
314918 8NO ANNA 500 314911 8LADYSMITH 500 1	345	DVP_P1-2: LN 573_SRT-A	101.75	101.77
			96.93	96.94
		DVP_P1-2: LN 594_SRT-S	109.23	109.24
			101.63	101.64
		DVP_P4-2: 57302_SRT-S	114.49	114.51
314918 8NO ANNA 500 314934 8SPOTSYL 500 1	345	DVP_P1-2: LN 552_SRT-S	100.15	100.16
		DVP_P1-2: LN 575_SRT-S	103.5	103.51
			94.82	94.83
		DVP_P1-2: LN 581_SRT-S	102.86	102.86

		DVP_P4-2: 57502_SRT-S	108.41	108.42
314919 8OX 500 314068 6OX 230 1	345	DVP_P4-2: 201342_SRT-S	96.19	96.19
314919 8OX 500 314904 8CLIFTON 500 1	345	DVP_P7-1: LN 569-2101_SRT-S	98.02	98.02
314925 8PL VIEW 500 314072 6PL VIEW 230 1	345	DVP_P1-2: LN 2180_SRT-A	104.47	104.47
			103.62	103.62
		DVP_P1-2: LN 9303_SRT-A	97.9	97.89
			97.9	97.89
		DVP_P1-2: LN 9344_SRT-A	97.87	97.87
			97.62	97.62
		DVP_P1-3: 8GOOSE CREEK-TX#1_SRT-A	118.08	118.08
			117.88	117.88
		DVP_P1-3: 8MARS-TX#1_SRT-A	97.8	97.8
			97.55	97.55
		DVP_P4-2: 227T9292_SRT-S	95	95
		DVP_P4-2: L1T227_SRT-A	95.23	95.23
		DVP_P4-2: L1T9292_SRT-S	95.47	95.47
314929 8FRONT ROYAL 500 314916 8MORRSVL 500 1	345	DVP_P1-2: LN 535_SRT-S	101.36	101.34
			98.53	98.51
314934 8SPOTSYL 500 314916 8MORRSVL 500 1	345	DVP_P1-2: LN 552_SRT-S	111.99	111.99
			96.61	96.62
		DVP_P1-2: LN 568_SRT-S	104.26	104.27
		DVP_P1-2: LN 575_SRT-S	111.63	111.64
			102.25	102.26
		DVP_P1-2: LN 581_SRT-S	110.79	110.79
			95.76	95.76
		DVP_P4-2: 545T552_SRT-S	98.84	98.84
		DVP_P4-2: 568T575_SRT-A	96.19	96.2
		DVP_P4-2: H1T541_SRT-S	95.7	95.71
314936 8RAWLINGS 500 314902 8CARSON 500 1	345	DVP_P1-2: LN 585_SRT-A	97.66	97.65
			95.51	95.5
314939 8GOOSE CREEK 500 313904 6GOOSECRK 230 1	345	DVP_P1-2: LN 558_SRT-S	105.04	105.03
			105.5	105.49
		DVP_P1-2: LN 595_SRT-A	113.7	113.7
			113.7	113.7
		DVP_P1-2: LN 9344_SRT-A	105.6	105.6
			105.6	105.6
		DVP_P1-3: 8MARS-TX#1_SRT-A	105.54	105.54
			105.54	105.54
		DVP_P1-3: 8PL VIEW-TX#3_SRT-A	112.88	112.88
			112.88	112.88

		DVP_P2-2: BRAMBLETON B5_SRT-S	95.74	95.74
		DVP_P4-2: 2095T9349_SRT-A	104.65	104.64
		DVP_P4-2: L3T203_SRT-A	110.44	110.44
		DVP_P4-3: PLEASAN H322_SRT-S	106.1	106.1
		DVP_P4-6: 9344T1_SRT-A	112.62	112.62
		DVP_P4-6: 9349T1_SRT-A	101.17	101.17
		DVP_P7-1: LN 201-558_SRT-S	98.77	98.76
		DVP_P7-1: LN 2031-2188_SRT-A	99.11	99.11
		DVP_P7-1: LN 9344-9345_SRT-A	112.62	112.62
314940 8ROGERS RD 500 314902 8CARSON 500 1	345	DVP_P1-2: LN 511_SRT-S	95.24	95.24
314991 8VALLEY SC 500 314926 8VALLEY 500 1	345	DVP_P1-2: LN 555_SRT-A	106.05	106.09
			103.97	104.01
		DVP_P7-1: LN 2168-555_SRT-A	95.93	95.95
316079 AB2-161 TAP 115 314273 3BAKRS P 115 1	345	DVP_P1-2: LN 23_SRT-A	99.83	99.83
		DVP_P1-2: LN 9242_SRT-A	104.9	104.9
316193 AC1-042 TAP 69.0 314739 2MT A TP 69.0 1	345	Base Case	98.28	98.28

I. NECESSITY FOR THE PROPOSED PROJECT

E. Describe the feasible project alternatives, if any, considered for meeting the identified need including any associated studies conducted by the Applicant or analysis provided to the RTO. Explain why each alternative was rejected.

Response: Feasible Project Alternatives

The Company did not identify any feasible alternatives for the proposed Rebuild Project because there is no alternative within the existing right-of-way that can satisfy the proposed Rebuild Project's need, which is to resolve the overloading issue to comply with mandatory NERC Reliability standards and to maintain reliable service to accommodate overall growth in the area. See Section I.A.

Analysis of Demand-Side Resources

Pursuant to the Commission's November 26, 2013, Order entered in Case No. PUE-2012-00029, and its November 1, 2018, Final Order entered in Case No. PUR-2018-00075 ("2018 Final Order"), the Company is required to provide an analysis of demand-side resources ("DSM") as incorporated into the Company's planning studies. DSM is the broad term that includes both energy efficiency ("EE") and demand response ("DR").[10] In this case, the Company has identified a need for the Rebuild Project based on the need to resolve the overloading issue, in order to comply with the NERC standards, and consistent with sound engineering judgment, thereby enabling the Company to maintain the overall long-term reliability of its transmission system. Notwithstanding, when performing an analysis based on PJM's 50/50 load forecast, there is no adjustment in load for DR programs because PJM only dispatches DR when the system is under stress (*i.e.*, a system emergency). Accordingly, while existing DSM is considered to the extent the load forecast accounts for it, DR that has been bid previously into PJM's capacity market is not a factor in this Rebuild Project because of the identified need. Based on these considerations, the evaluation of the Rebuild Project demonstrated that despite accounting for DSM consistent with PJM's methods, the Rebuild Project is necessary.

Incremental DSM also will not eliminate the need for the Rebuild Project. As reflected in Attachment I.C.1, the highest annual projected peak load (summer) for the 2025-2036 period in the DOM Zone is projected to total approximately 2114.8 MW and the highest annual projected peak load (winter) for 2024/2025–2036/2037 is projected to total approximately 2354.8 MW (including future planned stations). By way of comparison, statewide, the Company achieved demand savings of 322.9 MW (net) / 399.0 MW (gross) from its DSM Programs in 2024.

[10] While the PJM load forecast does not directly incorporate DR, its load forecast incorporates variables derived from Itron that reflect EE by modeling the stock of end-use equipment and its usages. Further, because PJM's load forecast considers the historical non-coincident peak ("NCP") for each load serving entity ("LSE") within PJM, it reflects the actual load reductions achieved by DSM programs to the extent an LSE has used DSM to reduce its NCPs.

I. NECESSITY FOR THE PROPOSED PROJECT

F. Describe any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed project, including the number of circuits and normal and emergency ratings of the facilities.

Response: The proposed Rebuild Project includes the removal and replacement of existing facilities on existing Lines #233 and #291 between the existing Charlottesville Substation and the existing Dooms Substation. Lines #233 and #291 are built on double-circuit structures, except for structures 291/33E, 291/33B, 291/33C, 291/33D, 233/33B, 233/33C, 233/33D, 291/33A, 233/33A, 233/91A, 233/91B, 233/91C, 233/91D, 291/91A, 291/91B, 291/91C, 291/91D, 291/147, 233/147, 291/148, 233/148, 291/149, 233/149, which are the breakaway sections entering substations. There will be no lines permanently taken out of service as part of the proposed Rebuild Project.

Lines #233 and #291

Between the existing Charlottesville Substation and the existing Dooms Substation, a total of 128 structures consisting of seven steel monopole structures, seven painted steel monopole structures,[11] two concrete H Frame structures, two steel H Frame structures, and 110 lattice structures will be removed from Lines #233 and #291. The Company will replace these structures with 122 galvanized and weathering steel monopole structures, two 3-pole galvanized and weathering steel structures, and two galvanized and weathering steel H-Frame structures, with a total of 126 structures.

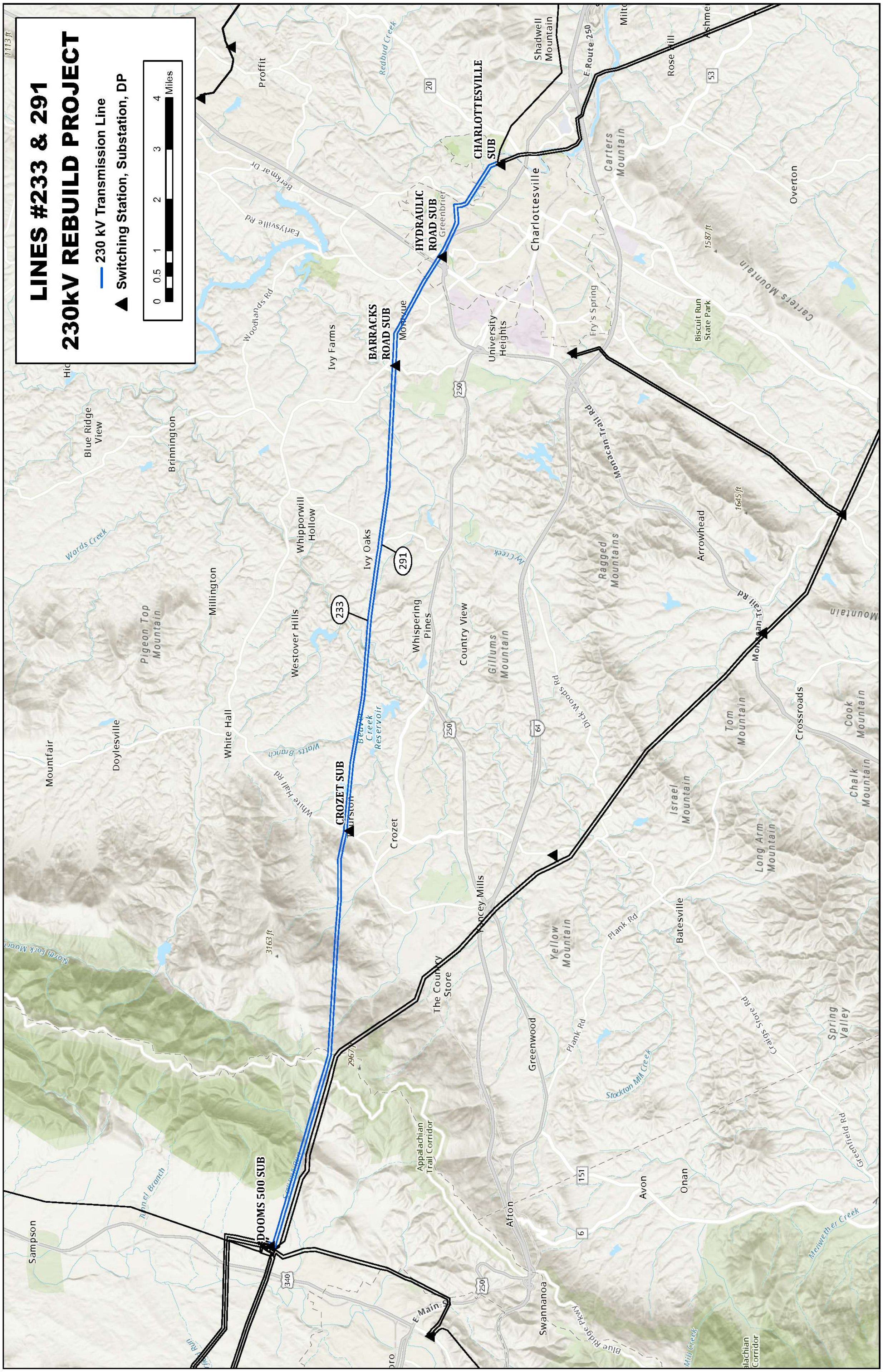
In addition, the Company will replace the existing bundled 545.6 ACAR conductors on Lines #233 and #291 with new 768.2 ACSS/TW/HS conductors with 3948A ampacity, with a minimum summer emergency rating of 1573 MVA.

[11] The existing painted structures are white. The Company will replace them with galvanized steel structures because they have a shiny silver finish, which is closer in tone to the existing painted structures than the weathering steel structures, which are reddish brown.

I. NECESSITY FOR THE PROPOSED PROJECT

G. Provide a system map, in color and of suitable scale, showing the location and voltage of the Applicant's transmission lines, substations, generating facilities, etc., that would affect or be affected by the new transmission line and are relevant to the necessity for the proposed line. Clearly label on this map all points referenced in the necessity statement.

Response: See Attachment I.G.1.


LINES #233 & 291
230kV REBUILD PROJECT
230 kV Transmission Line
Switching Station, Substation, DP
0 0.5 1 2 3 4 Miles
CHARLOTTESVILLE SUB
HYDRAULIC ROAD SUB
BARRACKS ROAD SUB
CROZET SUB
DOOMS 500 SUB
233
291
Charlottesville
University Heights
Crozet
Ivy Oaks
Ivy Farms
Whispering Pines
Country View
Westover Hills
White Hall
Afton
Swannanoa
Greenwood
Batesville
Crossroads
Arrowhead
Overton
Proffit
Sampson

I. NECESSITY FOR THE PROPOSED PROJECT

H. Provide the desired in-service date of the proposed project and the estimated construction time.

Response: The desired in-service target date for the Rebuild Project is November 30, 2029. The Company estimates it will take approximately 40 months after a final order from the Commission for detailed engineering, materials procurement, permitting, real estate, and construction of the Rebuild Project. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by July 2026. Should the Commission issue a final order by July 2026, the Company estimates that construction should begin by January 2027, with the Rebuild Project to be completed by the in-service target date of November 30, 2029. This schedule is contingent upon obtaining the necessary permits and careful coordination of outages, the latter of which may be particularly challenging due to the amount of new load growth, rebuilds, and new builds scheduled to occur in this load area. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process, as well as the ability to schedule outages, and unpredictable delays due labor shortages or materials/supply issues. Based on the Rebuild Project's complexity, there may be delays with procurement of materials.

In addition, the Company is monitoring actively regulatory changes and requirements associated with the NLEB and how they could potentially impact construction timing associated with TOYRs. The USFWS issued the final guidance, replacing the interim guidance, on October 23, 2024, and the final guidance was fully implemented November 30, 2025. The Company is reviewing the final guidance to the extent it applies to the Company's projects and will coordinate with USFWS during the permitting stage.

The Company is also monitoring potential regulatory changes associated with the potential up-listing of the TCB. On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the Endangered Species Act. USFWS extended its Final Rule issuance target from September 2023 to September 2024, but as of the date of this filing, the TCB listing decision has not been issued. The Company is tracking actively this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

Any adjustments to the Rebuild Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests that the Commission issue a final order approving both a desired in-service target date (*i.e.*, November 30, 2029) and an authorization sunset date

(*i.e.*, November 30, 2030) for energization of the Rebuild Project.[12]

[12] *See supra,* n.5.

I. NECESSITY FOR THE PROPOSED PROJECT

I. Provide the estimated total cost of the project as well as total transmission-related costs and total substation-related costs. Provide the total estimated cost for each feasible alternative considered. Identify and describe the cost classification (e.g. "conceptual cost," "detailed cost," etc.) for each cost provided.

Response: The estimated conceptual cost of the proposed Rebuild Project is approximately $120.2 million (in 2025 dollars). The estimated conceptual cost for the substation-related work discussed in Footnote 2 and Section II.C is approximately $5.1 million.

I. NECESSITY FOR THE PROPOSED PROJECT

J. If the proposed project has been approved by the RTO, provide the line number, regional transmission expansion plan number, cost responsibility assignments, and cost allocation methodology. State whether the proposed project is considered to be a baseline or supplemental project.

Response: The Company submitted the Rebuild Project proposal as PJM Open Window Project in May of 2023. The Rebuild Project was presented at the October 31, 2023, PJM TEAC meetings (first read). See Attachment I.J.1. The Rebuild Project was assigned Nos. b3800.361-364 and b3800.368-372. The Rebuild Project was then again presented at the December 5, 2023, PJM TEAC Meeting (second read). See Attachment I.J.2. PJM approved the proposal at its board meeting in December 2023. See Attachment I.J.3.

Reliability Analysis Update

Sami Abdulsalam, Senior Manager
PJM Transmission Planning

Transmission Expansion Advisory Committee
October 31, 2023

2023 Transmission Owners Local Plans

- The 2023 Local Plans for the Transmission Owners listed below, are posted as information only under this TEAC meeting material.
- Board review planned for December 2023.

JCPL	ACE
MetEd	AMPT
PECO	APS
Penelec	ATSI
PEPCO	BGE
PPL	ComEd
PSEG	DLCO
Dayton	DPL
DEOK	EKPC
AEP	Dominion

First Read – 2023 Window 1

Baseline Reliability Projects

2022W3 – Preferred Solutions: South Cluster

Dominion: 2022-W3-967 Partial

- Rebuild 230kV Line #2054 Charlottesville – Proffit DP using double-circuit capable 500/230 kV poles (the 500kV circuit will not be wired as part of this project).
- Rebuild 230kV Line #233 segment from Barracks Road – Crozet
- Rebuild 230kV Line #291 Charlottesville – Barracks Road – Crozet – Dooms
- Relay resets/revisions at the following substations:
  - Hollymeade, Proffit, Barracks Road, Crozet
- Terminal equipment upgrades at the following substations:
  - Charlottesville for Line #2054 rebuild & Dooms for Line #291 rebuild

Estimated Cost: $183.48 M

Required IS Date: 6/1/2027
Projected IS Date: 6/1/2028

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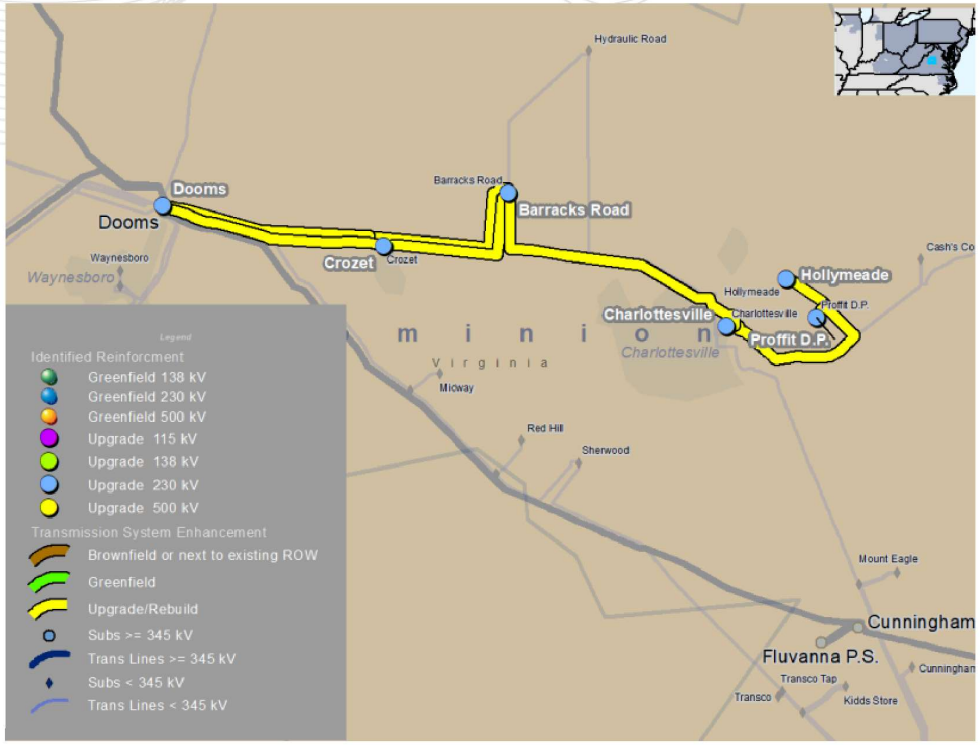

NOTE: *This map is only intended to illustrate the general electrical connectivity of the projects, and should not be relied upon for exact geographical substation locations or line routes.*

Contact

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Reliability Analysis Update

Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

Revision History

Version No.	Date	Description
1	Oct 26th 2023	• Original slides posted
2	Oct 27th 2023	• Minor addition to slide #18
3	Oct 30th 2023	• Minor adjustments and corrections as marked with the R3 red text
4	Oct 31st 2023	• Minor update on slides #13, 14 and 55

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Reliability Analysis Update

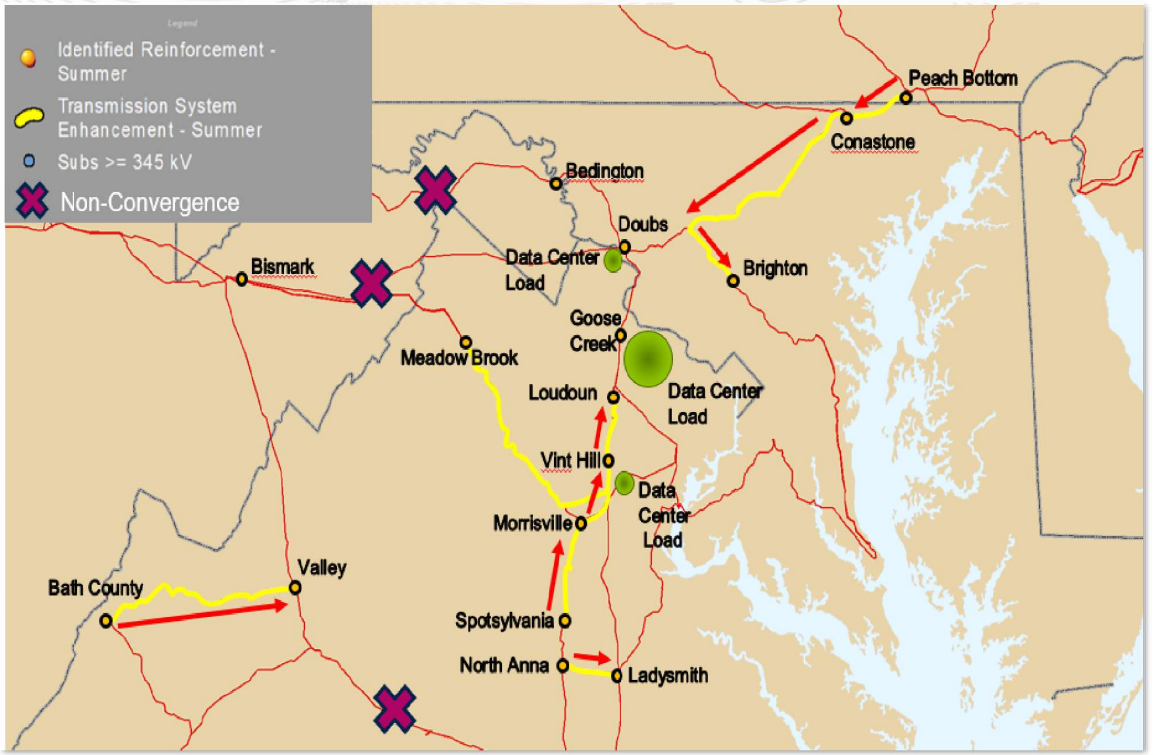
Sami Abdulsalam, Senior Manager
PJM Transmission Planning

Transmission Expansion Advisory Committee
December 5, 2023

Purpose of 2022 RTEP Window 3

Changes from 2021 to 2022

- PJM has had unprecedented data center load growth (~7,500 MW) currently forecast by 2027- 28 in Dominion (Northern Virginia) and APS (Doubs)
- 11,100 MW deactivation announced
  - ~ 5,300 MW of retirements occurred after the 2022 RTEP case was created
- The vast majority of the new generation with signed ISAs has been solar
  - Solar has low availability during the winter period
- Replacement generation is coming from the region to the east of Peach Bottom as well as west of Doubs to meet projected load growth.
- PJM has implemented a new block dispatch procedure
  - The old dispatch procedure maintained historical intraregional transfers, dispatching most of the generators in the Dominion zone at 100% or higher.
- Market Efficiency 9A project was suspended



Evaluation Criteria

- PJM's mandatory analysis criteria and obligations are developed and monitored by multiple national and regional regulatory agencies:
  - Federal Energy Regulatory Commission
  - North American Electric Reliability Corporation
  - ReliabilityFirst
  - SERC Electric Reliability Corporation
- PJM also includes criteria designed to meet the needs of the PJM markets and operating principals.
- Finally, member Transmission Owners develop criteria design to meet the needs of the local system, including any provisions imposed by state regulatory bodies

72 Proposals Were Received From 10 Entities

6 incumbent, 4 non-incumbent	22 projects are upgrades, while 50 are greenfield	Total ~$48.5B (sum of all proposal costs – not all are required)	Anticipated Cost for Recommended Solution ~$5 B

Proposals include:

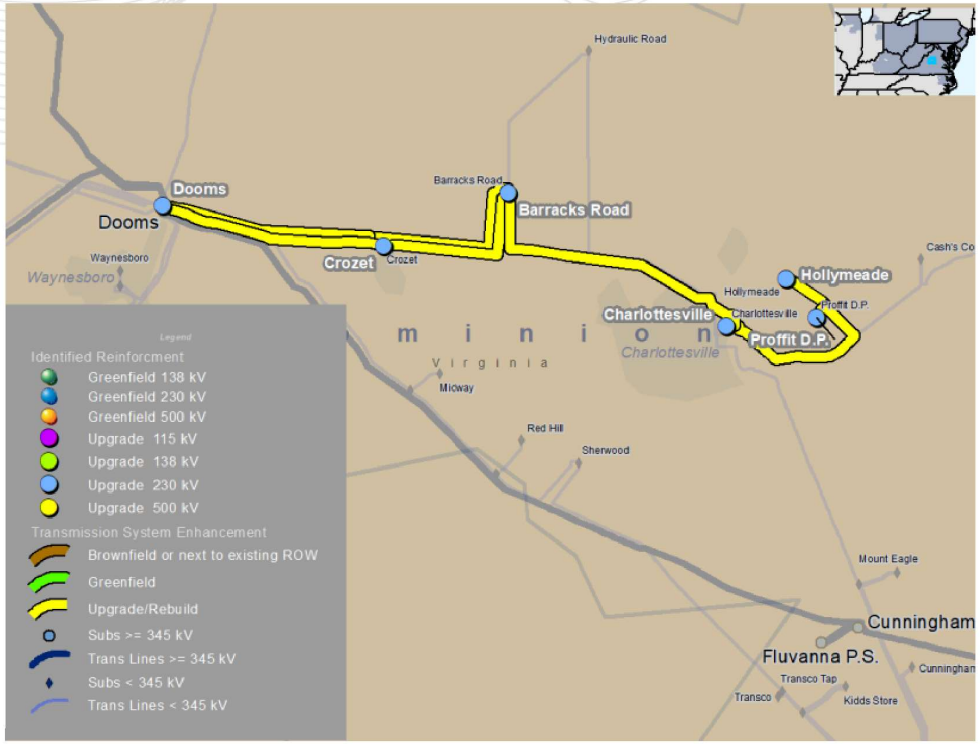
- 230 kV, 500 kV and 765 kV developments
- 500 kV GIS substations
- UG 500 kV AC cable developments
- Double circuit 500 kV proposals
- HVDC developments

2022W3 – Recommended Solutions: South Cluster

Recommended Solution: 2022-W3-967

- Rebuild 230kV Line #2054 Charlottesville – Proffit DP using double-circuit capable 500/230 kV poles (the 500kV circuit will not be wired as part of this project).
- Rebuild 230kV Line #233 Charlottesville – Hydraulic Rd – Barracks Road – Crozet – Dooms
- Rebuild 230kV Line #291 Charlottesville – Barracks Road – Crozet – Dooms
- Relay resets/revisions at the following substations:
  - Hollymeade, Proffit, Barracks Road, Crozet
- Terminal equipment upgrades at the following substations:
  - Charlottesville for Lines #2054, #233 & #291 rebuilds
  - Hydraulic Rd for #233 & #291 rebuilds
  - Dooms for #233 & #291 rebuilds

Baseline # B3800.360 – B3800.372



NOTE: *This map is only intended to illustrate the general electrical connectivity of the projects, and should not be relied upon for exact geographical substation locations or line routes.*

Continued on next slide…

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Revision History

Version No.	Date	Description
1	Nov 30th 2023	• Original slides posted
2	Dec 1st 2023	• Added slide # 71 and updated slide #70
3	Dec 6th 2023	• Updated tables in slide #70 and #6 • Updated slide #59 • Updated slide #2 to correct year

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Transmission Expansion Advisory Committee (TEAC) Recommendations to the PJM Board

PJM Staff White Paper

PJM Interconnection
December 2023

For Public Use

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Contents

I. Executive Summary

On October 3, 2023, the PJM Board of Managers approved changes to the Regional Transmission Expansion Plan (RTEP), totaling a net increase of $0.69 million for baseline projects to resolve baseline reliability criteria violations and address changes to existing projects.

Since then, PJM has identified new baseline reliability criteria violations, and the transmission system enhancements needed to solve them, at an estimated cost of $5,142.98 million. Scope changes to existing projects will result in a net decrease of $32.17 million, and cancellation of existing projects will result in a net decrease of $24.96 million. This yields an overall RTEP net increase of $5,085.85 million, for which PJM recommended Board approval. PJM is also providing the annual update of RTEP generation and merchant transmission network upgrades in this white paper. PJM has identified $179.58 million in new network upgrades. Additionally, $41.45 million in previously identified network upgrades will be cancelled as a result of updates to analysis performed for project withdrawals in the New Services Queue. This yields an overall RTEP net increase of $138.13 million, for which PJM recommended Board approval. Altogether, the changes result in an overall RTEP net increase of approximately $5,223.98 million. With these changes, RTEP projects will total approximately $48,258.8 million since the first Board approvals in 2000.

PJM sought Reliability and Security Committee consideration and full Board approval of the RTEP baseline projects summarized in this white paper. On December 11, 2023, the Board approved the addition of RTEP baseline projects as well as other changes to the RTEP as summarized in this paper.

II. Baseline Project Recommendations

A key dimension of PJM's RTEP process is baseline reliability evaluation, which is necessary before subsequent interconnection requests can be analyzed. Baseline analysis identifies system violations to reliability criteria and standards, determines the potential to improve the market efficiency and operational performance of the system, and incorporates any public policy requirements. PJM then develops transmission system enhancements to solve identified violations and reviews them with stakeholders through the Transmission Expansion Advisory Committee (TEAC) and subregional RTEP committees prior to submitting its recommendation to the Board. Baseline transmission enhancement costs are allocated to PJM responsible customers.

III. Baseline Reliability Projects Summary

A complete listing of all recommended projects and their associated cost allocations is included in Attachment A (allocations to a single zone) and Attachment B (allocations to multiple zones).

- Baseline project b3800 – 2022 RTEP Window 3 Recommended Solution: $5,142.98 million

A detailed description of the above project that PJM recommended to the Board is detailed in the 2022 RTEP Window 3 Reliability Analysis Report and the 2022 RTEP Window 3 Constructability & Financial Analysis Report.

IV. Changes to Previously Approved Projects

Scope/Cost Changes

The following scope/cost modifications were recommended:

NJ Offshore Wind State Agreement Approach (SAA) Project: b3737.47

The recommended solution for 2022 Window 3 includes the scope change to expand the North Delta 500 kV substation to a four bay breaker and half configuration, which will allow for the termination of six 500 kV lines and one 500/230 kV transformer. The original estimate cost for the Transource-proposed North Delta substation was $76.27 million, and the new expanded scope will be approximately $104.1 million.

The net cost increase for the New Jersey SAA project is $27.83 million.

Brandon Shores Deactivation Project: b3780

The recommended solution for 2022 Window 3 includes the scope change to the immediate need project stemming from the Brandon Shores deactivation request. The revised scope modifies the planned North Delta 500/230 kV substation, which will cut into Peach Bottom-Delta/Calpine 500 kV line. This scope of work is related to the above b3737.47 project scope from the NJ OSW SAA project, as the b3780 deactivation project initially proposed the construction of a 500/230 kV West Cooper substation (b3780.3) in lieu of the North Delta substation. The recommended solution cancels the b3780.3 West Cooper substation scope, resulting in a net decrease of $60 million.

- All of the scope/cost changes described in this section yield a net RTEP decrease of $32.17 million.

Cancellations

The following scope/cost modifications were recommended:

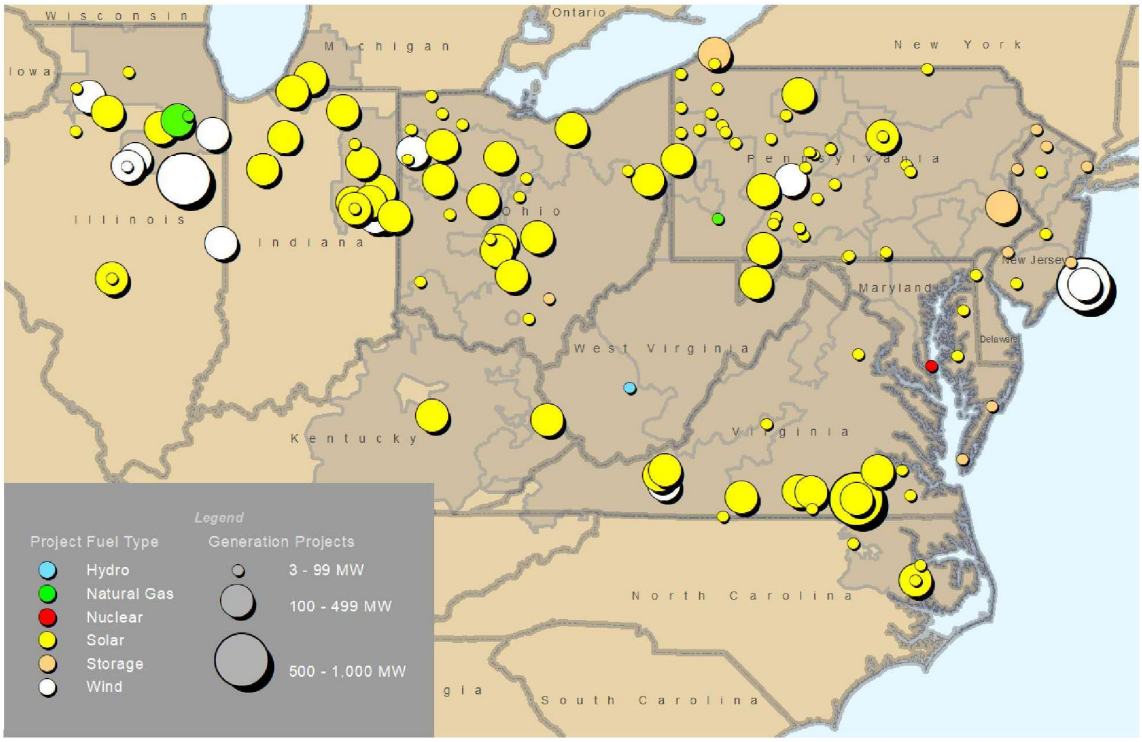
- Project b3768 (rebuild/reconductor the Germantown-Lincoln 115 kV line) is no longer required with the recommended 2022 Window 3 solution and yields a net decrease of $17.36 million.
- Project b3247 (Dominion portion of Doubs-Goose Creek 500 kV rebuild for End of Life "EOL") is no longer required as the recommended 2022 Window 3 solution replaces this scope of work, and yields a net decrease of $7.6 million.
    - Note: The related supplemental project s2386, which includes the FirstEnergy (APS) portion of the Doubs-Goose Creek 500 kV EOL rebuild, is being converted to a baseline and is included in the recommended 2022 Window 3 solution.
- All of the cancellations described in this section yield a net RTEP decrease of $24.96 million.

V. Interconnection Queue Projects

Throughout 2023, PJM has continued to study new service customer requests that are submitted into our interconnection queue. These studies evaluate the impact of the new service request and include an evaluation of new generation interconnections, increases in generation at existing stations, long-term firm transmission service requests and merchant transmission interconnection requests.

These studies were last reviewed with the Board Reliability Committee in December of 2022. Since that time, PJM has completed 151 System Impact Studies, and 166 service requests have withdrawn. New projects with signed ISAs, project scope changes and project cancellations have resulted in a net increase of $138.13 million for network upgrades. The map below shows the locations of the new units associated with the completed interconnection System Impact Studies along with the fuel type and relative size. A listing of the projects with recently completed impact studies is provided in Attachment C to this white paper. A listing of the network upgrades associated with these projects is shown in Attachment D to this report. The cost for the network upgrades associated with these interconnection projects is the responsibility of the developer.

Map 1. Completed Interconnection System Impact Studies



VI. Review by the Transmission Expansion Advisory Committee (TEAC)

Project needs and recommended solutions as discussed in this report were reviewed with stakeholders during 2023, most recently at the October 31, 2023, and December 5, 2023, TEAC meetings. Written comments were requested to be submitted to PJM to communicate any concerns with project recommendations. All correspondence addressed to the PJM Board are available at the Board communications page[1].

VII. Cost Allocation

Cost allocations for recommended projects are shown in Attachment A (for allocation to a single zone) and Attachment B (for allocation to multiple zones).

Cost allocations are calculated in accordance with Schedule 12 of the Open Access Transmission Tariff (Tariff). Baseline reliability project allocations are calculated using a distribution factor methodology that allocates cost to the load zones that contribute to the loading on the new facility. The allocations will be filed at FERC no later than 30 days following approval by the Board.

VIII. Board Approval

The PJM Reliability and Security Committee is requested to endorse the additions and changes to the RTEP proposed in this white paper and to recommend to the full Board for approval the new projects and changes to the existing RTEP projects as detailed in this white paper. On December 11, 2023, the Board approved the addition of RTEP baseline projects as well as other changes to the RTEP as summarized in this paper.

[1] https://www.pjm.com/about-pjm/who-we-are/pjm-board/public-disclosures

Attachment A – Reliability Project Single-Zone Allocations

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.9	Rebuild the existing Hunterstown-Carroll 115/138 kV Corridor as Double Circuit using 230 kV construction standards. New circuit will be operated at 230 kV. Existing circuit to remain at 115/138 kV.	$0.00	APS	N/A, upgrade ID is for tracking only, no cost	6/1/2027
b3800.10	Rebuild the Germantown-Lincoln 115 kV line for 230 kV double circuit construction.	$30.10	ME	ME (100.00%)	6/1/2027
b3800.11	Rebuild the Hunterstown-Lincoln 115 kV line for 230 kV double circuit construction.	$11.48	ME	ME (100.00%)	6/1/2027
b3800.12	Rebuild the Germantown-Carroll 138 kV line for 230 kV double circuit construction (MAIT).	$12.16	ME	ME (100.00%)	6/1/2027
b3800.19	Reconductor Lincoln-Orrtanna 115 kV line.	$10.98	ME	ME (100.00%)	6/1/2027
b3800.20	Fayetteville-Grand Point 138 kV – Replace line trap at Grand Point 138 kV.	$0.40	APS	APS (100.00%)	6/1/2027
b3800.21	Reid-Ringgold 138 kV – Replace line trap, substation conductor, breaker, relaying and CTs at Ringgold.	$3.80	APS	APS (100.00%)	6/1/2027
b3800.22	Install DTT relaying at Straban substation.	$0.67	ME	ME (100.00%)	6/1/2027
b3800.23	Revise Relay Settings at Lincoln substation.	$0.31	ME	ME (100.00%)	6/1/2027
b3800.24	Revise Relay Settings at Germantown substation.	$0.47	ME	ME (100.00%)	6/1/2027
b3800.25	Taneytown substation terminal upgrade.	$0.53	APS	APS (100.00%)	6/1/2027
b3800.26	Build High Ridge 500 kV substation - Three bay breaker and half configuration.	$0.00	BGE	N/A, upgrade ID is for tracking only, no cost	6/1/2027
b3800.109	Termination work for two 500/138 kV transformer at Woodside 500 kV substation	$1.35	NEET	APS (100.00%)	6/1/2027
b3800.110	Two 500/138 kV transformers at Woodside 500 kV substation.	$33.68	NEET	APS (100.00%)	6/1/2027
b3800.111	Construct the Woodside-Stonewall 138 kV No. 1 line.	$6.28	APS	APS (100.00%)	6/1/2027
b3800.112	Construct the Woodside-Stonewall 138 kV No. 2 line.	$6.31	APS	APS (100.00%)	6/1/2027
b3800.114	Stonewall 138 kV substation two 138kV breaker expansion.	$8.30	APS	APS (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.125	Rebuild the Doubs-Dickerson 230 kV line. This will be underbuilt on the new Doubs-Goose Creek 500 kV line. APS Portion	$13.04	APS	PEPCO (100.00%)	6/1/2027
b3800.126	Rebuild the Doubs-Aqueduct 230 kV line. This will be underbuilt on the new Doubs-Aspen 500 kV line. APS Portion	$11.35	APS	PEPCO (100.00%)	6/1/2027
b3800.127	Rebuild the Dickerson-Aqueduct 230 kV line. This will be underbuilt on the new Doubs-Aspen 500 kV line. APS Portion	$6.80	APS	PEPCO (100.00%)	6/1/2027
b3800.201	Install two 500-230 kV transformer banks at Golden substation.	$70.00	Dominion	Dominion (100.00%)	6/1/2027
b3800.203	Install a 2nd 500-230 kV 1440MVA transformer at Mars substation.	$42.19	Dominion	Dominion (100.00%)	6/1/2027
b3800.204	Reconductor 0.5 mile section of 230 kV line No. 2150 Golden-Paragon Park Circuit 1 to achieve a summer rating of 1573 MVA.	$1.44	Dominion	Dominion (100.00%)	6/1/2027
b3800.205	Reconductor 0.5 mile section of 230 kV line No. 2081 Golden-Paragon Park Circuit 2 to achieve a summer rating of 1573 MVA.	$1.44	Dominion	Dominion (100.00%)	6/1/2027
b3800.206	Upgrade Paragon Park substation line conductors to 4000A continuous current rating for 230 kV lines No. 2081 & line No. 2150.	$0.09	Dominion	Dominion (100.00%)	6/1/2027
b3800.207	Reconductor 230 kV line No. 2207 Paragon Park-Beco to achieve a summer rating of 1573 MVA.	$3.36	Dominion	Dominion (100.00%)	6/1/2027
b3800.208	Upgrade Paragon Park substation conductor and line leads to 4000A continuous current rating for 230 kV line No. 2207.	$0.10	Dominion	Dominion (100.00%)	6/1/2027
b3800.209	Upgrade BECO substation equipment to 4000A continuous current rating for 230 kV line No. 2207.	$1.86	Dominion	Dominion (100.00%)	6/1/2027
b3800.210	Build a new 230 kV line from Mars-Lockridge on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Mars and Lockridge.	$57.95	Dominion	Dominion (100.00%)	6/1/2027
b3800.211	Build a new 230 kV line from Lockridge-Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Lockridge.	$56.93	Dominion	Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.215	Cut 230 kV line No. 2150 Sterling Park-Paragon Park Circuit 1 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2150 to 4000A continuous current rating.	$57.62	Dominion	Dominion (100.00%)	6/1/2027
b3800.216	Cut 230 kV line No. 2081 Sterling Park-Paragon Park Circuit 2 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2081 to 4000A continuous current rating.	$57.62	Dominion	Dominion (100.00%)	6/1/2027
b3800.218	Build a new 230 kV line from Sycolin Creek-Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek.	$69.84	Dominion	Dominion (100.00%)	6/1/2027
b3800.219	Replace 7 overdutied 230 kV breakers at Beaumeade substation with 80 kA breakers.	$3.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.220	Replace 4 overdutied 230 kV breakers at BECO substation with 80 kA breakers.	$1.81	Dominion	Dominion (100.00%)	6/1/2027
b3800.221	Replace 4 overdutied 230 kV breakers at Belmont substation with 80 kA breakers.	$1.90	Dominion	Dominion (100.00%)	6/1/2027
b3800.222	Replace 1 overdutied 230 kV breaker at Discovery substation with 80 kA breaker.	$0.49	Dominion	Dominion (100.00%)	6/1/2027
b3800.223	Replace 1 overdutied 230 kV breaker at Pleasant View substation with 80 kA breaker.	$0.51	Dominion	Dominion (100.00%)	6/1/2027
b3800.224	Replace 2 overdutied 230 kV breakers at Shellhorn substation with 80 kA breakers.	$0.93	Dominion	Dominion (100.00%)	6/1/2027
b3800.226	Change 230 kV lines No. 2081 and 2150 at Paragon Park substation destination to Golden substation and upgrade line protection relays	$0.30	Dominion	Dominion (100.00%)	6/1/2027
b3800.227	Change 230 kV lines No. 2081 and 2150 at Sterling Park substation destination to Golden substation and upgrade line protection relays.	$0.30	Dominion	Dominion (100.00%)	6/1/2027
b3800.228	Reconductor 1.47 miles of 230 kV circuits 2081 and 2150 from Sterling Park to Golden substation. Upgrade terminal equipment at Sterling Park to 4000A continuous current.	$7.97	Dominion	Dominion (100.00%)	6/1/2027
b3800.229	Reconductor 0.67 miles of 230 kV circuits 2194 and 9231 from Davis Drive to Sterling Park substation. Terminal equipment at remote end substations will be installed or upgraded to 4000A continuous current rating to support new conductor ratings.	$5.53	Dominion	Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.230	Reset relays at Breezy Knoll for the revised current rating of 230 kV line No. 2098 Pleasant View-Hamilton.	$0.02	Dominion	Dominion (100.00%)	6/1/2027
b3800.231	Reset relays at Dry Mill for the revised current rating of 230 kV line No. 2098 Pleasant View-Hamilton.	$0.02	Dominion	Dominion (100.00%)	6/1/2027
b3800.232	Reset relays at Hamilton for the revised current rating of 230 kV line No. 2098 Pleasant View-Hamilton.	$0.01	Dominion	Dominion (100.00%)	6/1/2027
b3800.233	Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 .kV line No. 2098 wreck and rebuild. Replace circuit breakers 274T2098 & 2098T2180 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating.	$1.81	Dominion	Dominion (100.00%)	6/1/2027
b3800.234	Wreck and rebuild approximately one mile of 230 kV line No. 2098 between Pleasant View and structure 2098/9, where line No. 2098 turn towards Hamilton substation.	$3.44	Dominion	Dominion (100.00%)	6/1/2027
b3800.235	Replace 5 overdutied 230 kV breakers at Loudoun substation with 80 kA breakers.	$2.32	Dominion	Dominion (100.00%)	6/1/2027
b3800.236	Replace 2 overdutied 500 kV breakers at Ox substation with 63kA breakers.	$2.51	Dominion	Dominion (100.00%)	6/1/2027
b3800.237	Replace 1 overdutied 500 kV breaker at Pleasant View substation with a 63kA breaker.	$1.29	Dominion	Dominion (100.00%)	6/1/2027
b3800.300	Rebuild 230 kV line No. 2135 Hollymeade Junction-Cash's Corner using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project).	$32.45	Dominion	Dominion (100.00%)	6/1/2027
b3800.301	Rebuild 230 kV line No. 2135 Cash's Corner-Gordonsville using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project).	$21.51	Dominion	Dominion (100.00%)	6/1/2027
b3800.302	Upgrade Cash's Corner switches 213576 and 213579 and line leads to 4000A continuous current rating of 230 kV line No. 2135.	$0.51	Dominion	Dominion (100.00%)	6/1/2027
b3800.303	Upgrade Gordonsville substation line leads to 4000A continuous current rating of 230 kV line No. 2135.	$0.08	Dominion	Dominion (100.00%)	6/1/2027
b3800.304	Upgrade Hollymeade substation switch 213549 and line leads to 4000A continuous current rating of 230 kV line No. 2135.	$0.30	Dominion	Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.305	Install one (1) 300 MVAR Static synchronous Compensator (STATCOM) & associated equipment at Beaumeade substation.	$43.57	Dominion	Dominion (100.00%)	6/1/2027
b3800.308	Install one (1) 230 kV, 150MVAr Shunt Capacitor Bank & associated equipment at Mars substation.	$5.26	Dominion	Dominion (100.00%)	6/1/2027
b3800.309	Install one (1) 230 kV, 150MVAr Shunt Capacitor Bank & associated equipment at Wishing Star substation.	$6.09	Dominion	Dominion (100.00%)	6/1/2027
b3800.316	Rebuild approximately 6.17 miles of 230 kV line No. 2030 Gainesville-Mint Springs to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$13.98	Dominion	Dominion (100.00%)	6/1/2027
b3800.317	Rebuild approximately 1.58 miles of 230 kV line No. 2030 Mint Springs-Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$3.59	Dominion	Dominion (100.00%)	6/1/2027
b3800.318	Rebuild approximately 4.2 miles of 230 kV line No. 2045 Loudoun-North Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$14.52	Dominion	Dominion (100.00%)	6/1/2027
b3800.319	Rebuild approximately 0.88 miles of 230 kV line No. 2045 North Star-Brambleton to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$3.04	Dominion	Dominion (100.00%)	6/1/2027
b3800.320	Rebuild approximately 1.22 miles of 230 kV line No. 2227 Brambleton-Racefield to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$4.36	Dominion	Dominion (100.00%)	6/1/2027
b3800.321	Rebuild approximately 3.69 miles of 230 kV line No. 2094 Racefield-Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$13.20	Dominion	Dominion (100.00%)	6/1/2027
b3800.322	Rebuild approximately 9.16 miles of 230 kV line No. 2101 Bristers-Nokesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$12.99	Dominion	Dominion (100.00%)	6/1/2027
b3800.323	Rebuild approximately 2.89 miles of 230 kV line No. 2101 Nokesville-Vint Hill TP to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$4.10	Dominion	Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.324	Rebuild approximately 0.33 miles of 230 kV line No. 2101 Vint Hill TP-Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$0.47	Dominion	Dominion (100.00%)	6/1/2027
b3800.325	Rebuild approximately 3.32 miles of 230 kV line No. 2114 Rollins Ford-Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$4.35	Dominion	Dominion (100.00%)	6/1/2027
b3800.326	Rebuild approximately 10.09 miles of 230 kV line No. 2114 Vint Hill-Elk Run to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$13.21	Dominion	Dominion (100.00%)	6/1/2027
b3800.327	Rebuild approximately 4.43 miles of 230 kV line No. 2140 Heathcote-Catharpin to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$10.64	Dominion	Dominion (100.00%)	6/1/2027
b3800.328	Rebuild approximately 2.88 miles of 230 kV line No. 2140 Catharpin-Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$6.92	Dominion	Dominion (100.00%)	6/1/2027
b3800.329	Rebuild approximately 0.25 miles of 230 kV line No. 2151 Railroad DP-Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$4.39	Dominion	Dominion (100.00%)	6/1/2027
b3800.330	Rebuild approximately 4.14 miles of 230 kV line No. 2163 Vint Hill-Liberty to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$17.56	Dominion	Dominion (100.00%)	6/1/2027
b3800.331	Rebuild approximately 0.48 miles of line No. 2176 Heathcote-Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$8.78	Dominion	Dominion (100.00%)	6/1/2027
b3800.332	Rebuild approximately 1.11 miles of line No. 2222 Rollins Ford-Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$13.17	Dominion	Dominion (100.00%)	6/1/2027
b3800.333	Rebuild approximately 1.65 miles of line No. 183 Bristers-Ox to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.	$8.78	Dominion	Dominion (100.00%)	6/1/2027
b3800.334	Replace 4 overdutied 230 kV breakers at Loudoun substation with 80 kA breakers.	$1.72	Dominion	Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.335	Replace 1 overdutied 500 kV breaker at Ox substation with a 63kA breaker.	$1.29	Dominion	Dominion (100.00%)	6/1/2027
b3800.337	Upgrade and install equipment at Brambleton substation to support the new conductor termination. All terminal equipment for 230 kV lines No. 2045 & No. 2094 to be rated for 4000A continuous current rating.	$4.65	Dominion	Dominion (100.00%)	6/1/2027
b3800.338	Revise relay settings at Dawkins Branch.	$0.02	Dominion	Dominion (100.00%)	6/1/2027
b3800.339	Upgrade and install equipment at Gainesville substation to support the new conductor termination. All terminal equipment for 230 kV line No. 2030 to be rated for 4000A continuous current rating.	$3.71	Dominion	Dominion (100.00%)	6/1/2027
b3800.340	Revise relay settings at Heathcote.	$0.02	Dominion	Dominion (100.00%)	6/1/2027
b3800.341	Upgrade and install equipment at Loudoun substation for 230 kV line No. 2094 Loudoun-Racefield to be rated for 4000A continuous current rating.	$2.50	Dominion	Dominion (100.00%)	6/1/2027
b3800.343	Upgrade and install equipment at Loudoun substation for 230 kV line No. 2030 Loudoun-Mint Springs to be rated for 4000A continuous current rating.	$1.00	Dominion	Dominion (100.00%)	6/1/2027
b3800.342	Upgrade and install equipment at Loudoun substation for 230 kV line No. 2045 Loudoun-North Star to be rated for 4000A continuous current rating.	$2.50	Dominion	Dominion (100.00%)	6/1/2027
b3800.345	Revise relay settings at Mint Springs.	$0.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.347	Revise relay settings at North Star.	$0.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.348	Revise relay settings at Racefield.	$0.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.349	Revise relay settings at Railroad.	$0.02	Dominion	Dominion (100.00%)	6/1/2027
b3800.351	Update relay settings at Vint Hill for 230 kV line No. 2101 Vint Hill-Bristers.	$0.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.352	Update relay settings at Vint Hill for 230 kV line No. 2163 Vint Hill-Liberty.	$0.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.355	Revise relay settings at Youngs Branch.	$0.02	Dominion	Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.358	Replace single unit Locks 230/115 kV 168MVA transformer TX No. 7 with new single unit transformer with a rating of 224 MVA. Lead lines at the 115 kV level will be upgraded to 2000A.	$7.14	Dominion	Dominion (100.00%)	6/1/2027
b3800.359	Wreck and rebuild line No. 2090 Ladysmith CT-Summit D.P. segment as a double circuit 230 kV line to achieve a summer rating of 1573 MVA. Only one circuit will be wired at this stage. Upgrade circuit breaker leads, switches and line leads at Ladysmith CT to 4000A	$36.50	Dominion	Dominion (100.00%)	6/1/2027
b3800.360	Rebuild 230 kV line No. 2054 Charlottesville-Proffit DP using double-circuit capable 500/230 kV poles. (The 500 kV circuit will not be wired as part of this project).	$70.14	Dominion	Dominion (100.00%)	6/1/2027
b3800.361	Rebuild 230 kV line No. 233 Charlottesville-Hydraulic Rd-Barracks Road-Crozet-Dooms.	$54.54	Dominion	Dominion (100.00%)	6/1/2027
b3800.362	Rebuild 230 kV line No. 291 segment from Charlottesville-Barracks Road.	$22.50	Dominion	Dominion (100.00%)	6/1/2027
b3800.363	Rebuild 230 kV line No. 291 segment from Barracks Road-Crozet.	$20.81	Dominion	Dominion (100.00%)	6/1/2027
b3800.364	Rebuild 230 kV line No. 291 segment Crozet-Dooms.	$11.23	Dominion	Dominion (100.00%)	6/1/2027
b3800.365	Hollymeade substation Relay Revision for 230 kV line No. 2054 Charlottesville-Hollymeade.	$0.01	Dominion	Dominion (100.00%)	6/1/2027
b3800.366	Upgrade the terminal equipment at Charlottesville to 4000A for 230 kV line No. 2054 (Charlottesville-Hollymeade).	$0.97	Dominion	Dominion (100.00%)	6/1/2027
b3800.367	Proffit DP substation Relay Revision for 230 kV line No. 2054 Charlottesville-Hollymeade	$0.02	Dominion	Dominion (100.00%)	6/1/2027
b3800.368	Barracks Rd substation Relay Reset to accommodate the rebuilt line 230 kV lines No. 233 and No. 291.	$0.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.369	Crozet substation Relay Reset to accommodate the rebuilt line 230 kV lines No. 233 and No. 291.	$0.03	Dominion	Dominion (100.00%)	6/1/2027
b3800.370	Charlottesville substation Terminal Equipment Upgrade for 230 kV lines No. 233 & No. 291 Rebuild.	$1.50	Dominion	Dominion (100.00%)	6/1/2027
b3800.371	Upgrade Hydraulic Rd substation Equipment for 230 kV line No. 233 & No. 291 Rebuild.	$0.65	Dominion	Dominion (100.00%)	6/1/2027
b3800.372	Dooms substation Terminal Equipment Upgrade for 230 kV line No. 233 & No. 291 Rebuild.	$1.06	Dominion	Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.373	Wreck and rebuild approximately 7.14 miles of 230 kV line No. 256 from St. Johns to structure 256/108 to achieve a summer rating of 1573 MVA. line switch 25666 at St. Johns to be upgraded to 4000A.	$21.75	Dominion	Dominion (100.00%)	6/1/2028
b3800.374	Reconductor approximately 5.30 miles of 230 kV line No. 256 from Ladysmith CT to structure 256/107 to achieve a summer rating of 1573 MVA. Terminal equipment at remote end substations will be upgraded to 4000A.	$16.14	Dominion	Dominion (100.00%)	6/1/2028
b3800.401	Replace Ashburn 230 kV breaker SC432 with a breaker rated 63 kA.	$0.79	Dominion	Dominion (100.00%)	6/1/2027
b3800.402	Replace Beaumeade 230 kV breaker 227T2152 with a breaker rated 80 kA.	$2.31	Dominion	Dominion (100.00%)	6/1/2027
b3800.403	Replace BECO 230 kV breakers 215012 and H12T2150 with breakers rated 63kA.	$4.21	Dominion	Dominion (100.00%)	6/1/2027
b3800.404	Replace Belmont 230 kV breaker 227T2180 with a breaker rated 80 kA.	$2.24	Dominion	Dominion (100.00%)	6/1/2027
b3800.405	Replace Brambleton 230 kV breakers 20102, 20602, 204502, 209402, 201T2045, 206T2094 with breakers rated 80 kA.	$9.38	Dominion	Dominion (100.00%)	6/1/2027
b3800.406	Replace Gainesville 230 kV breaker 216192 with a breaker rated 80 kA.	$3.11	Dominion	Dominion (100.00%)	6/1/2027
b3800.407	Replace Loudoun 230 kV breakers 204552, 217352 with breakers rated 80 kA.	$5.57	Dominion	Dominion (100.00%)	6/1/2027
b3800.408	Replace Ox 230 kV breakers 22042, 24342, 24842, 220T2063, 243T2097, 248T2013, H342 with breakers rated 80 kA.	$9.02	Dominion	Dominion (100.00%)	6/1/2027
b3800.409	Replace Paragon Park 230 kV breakers 208132, 215032, 2081T2206, 2150T2207 with breakers rated 80 kA.	$4.96	Dominion	Dominion (100.00%)	6/1/2027
b3800.410	Replace Reston 230 kV breaker 264T2015 with a breaker rated 63 kA.	$0.79	Dominion	Dominion (100.00%)	6/1/2027
b3800.411	Replace Stonewater 230 kV breakers 20662-1, 20662-2, 217862-1, 217862-2 with breakers rated 80 kA.	$4.95	Dominion	Dominion (100.00%)	6/1/2027
b3800.412	Replace Waxpool 230 kV breakers 214922-5, 214922-6, 216622-5, 216622-6 with breakers rated 63 kA.	$2.93	Dominion	Dominion (100.00%)	6/1/2027
b3800.413	Replace Double Toll Gate 138 kV breaker MDT 138 OCB with a breaker rated 40 kA.	$3.00	APS	APS (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required IS Date
b3800.414	Replace Doubs 500 kV breaker DL-55 522LIN with a breaker rated 60 kA.	$10.01	APS	APS (100.00%)	6/1/2027

Attachment B – Reliability Project Multi-Zone Allocations

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.1	Build New Otter Creek 500 kV (Collinsville) - (switching station -Two bay three breaker configuration).	$32.76	PPL	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPCO (10.59%) / PPL (0.22%)	6/1/2027
b3800.2	Break the existing TMI-Peach Bottom 500 kV line and reterminate into adjacent Otter Creek 500 kV Switchyard.	$7.03	ME	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPCO (10.59%) / PPL (0.22%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.3	New Otter Creek (Collinsville) to Doubs 500 kV line (Otter Creek 500 kV - MD Border). Rebuild and expand existing ~12 miles of Otter Creek-Conastone 230 kV line to become a double-circuit 500 and 230 kV lines.	$83.30	PPL	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPCO (10.59%) / PPL (0.22%)	6/1/2027
b3800.4	New Otter Creek to Doubs 500 kV line (MD Border-PSEG Demarcation Point). Rebuild and expand existing ~1.6 miles of Otter Creek-Conastone 230 kV line to become a double-circuit 500 and 230 kV lines.	$11.11	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.5	Peach Bottom-TMI 500 kV - Replace terminal equipment at Peach Bottom.	$0.00	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEC (6.40%) / BGE (20.32%) / DPL (9.76%) / JCPL (17.57%) / Neptune (1.73%) / PECO (6.33%) / PEPCO (7.48%) / PSEG (29.15%) / RE (1.26%)	6/1/2027
b3800.6	Peach Bottom-TMI 500 kV - Replace terminal equipment at TMI.	$0.00	ME	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (7.41%) / BGE (15.50%) / Dominion (45.08%) / DPL (2.46%) / JCPL (0.80%) / ME (0.34%) / Neptune (0.09%) / PECO (10.72%) / PEPCO (15.72%) / PPL (0.43%) / PSEG (1.39%) / RE (0.06%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.7	Construct 38 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (BGE zone portion).	$213.20	PSEG	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)	6/1/2027
b3800.8	Reconfigure Doubs 500 kV station and upgrade terminal equipment to terminate new line.	$57.50	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)	6/1/2027
b3800.13	Rebuild the Germantown-Carroll 138 kV line to 230 kV double circuit construction (APS-PE Section).	$47.31	APS	APS (82.49%) / ME (17.51%)	6/1/2027
b3800.14	Construct New 230 kV Hunterstown-Carroll line (MAIT section).	$17.37	ME	APS (99.86%) / ME (0.14%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.15	Construct New 230 kV Hunterstown-Carroll line (APS-PE Section).	$6.71	APS	APS (99.86%) / ME (0.14%)	6/1/2027
b3800.16	Expand Carroll 230 kV substation to ring bus.	$7.62	APS	APS (99.86%) / ME (0.14%)	6/1/2027
b3800.17	Network upgrade at Caroll substation.	$0.43	APS	APS (99.86%) / ME (0.14%)	6/1/2027
b3800.18	Add a new 230 kV Breaker at the Hunterstown 230 kV substation for the new Hunterstown-Carroll 230 kV termination.	$2.31	ME	APS (99.86%) / ME (0.14%)	6/1/2027
b3800.27	High Ridge 500 kV substation (cut into Brighton-Waugh Chapel 500 kV line) - Waugh Chapel side.	$33.67	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (70.66%) / PEPCO (29.34%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.28	High Ridge 500 kV substation (cut into Brighton-Waugh Chapel 500 kV line) -Brighton side.	$33.67	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.68%) / BGE (97.41%) / Dominion (1.91%)	6/1/2027
b3800.29	High Ridge termination for the North Delta-High Ridge 500 kV line.	$33.67	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (2.58%) / Dominion (59.28%) / DPL (0.02%) / PEPCO (28.48%) / PSEG (9.24%) / RE (0.40%)	6/1/2027
b3800.30	High Ridge - Install two 500/230 kV transformers.	$22.11	BGE	BGE (62.75%) / PEPCO (37.25%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.31	Build new North Delta-High Ridge 500 kV line.	$13.36	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)	6/1/2027
b3800.32	Build new North Delta-High Ridge 500 kV line. (~59 miles).	$407.11	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (2.58%) / Dominion (59.28%) / DPL (0.02%) / PEPCO (28.48%) / PSEG (9.24%) / RE (0.40%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.33	Replace terminal equipment limitations at Brighton 500 kV - on the existing Brighton-Waugh Chapel 500 kV (5053) or new Brighton-High Ridge 500 kV.	$4.13	PEPCO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.68%) / BGE (86.77%) / Dominion (1.91%) / PEPCO (10.64%)	6/1/2027
b3800.34	Rebuild 5012 (existing Peach Bottom-Conastone) (new Graceton-Conastone) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Gracetone 500 kV stations.	$70.00	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (12.36%) / Dominion (24.57%) / DPL (25.17%) / JCPL (7.90%) / Neptune (0.88%) / PENELEC (1.60%) / PEPCO (12.32%) / PSEG (14.57%) / RE (0.63%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.35	Rebuild 5012 (existing Peach Bottom-Conastone) (new North Delta-Graceton PECO) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Gracetone 500 kV stations.	$29.86	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (49.42%) / Dominion (31.22%) / DPL (0.01%) / JCPL (0.01%) / PECO (3.75%) / PEPCO (15.57%) / PSEG (0.02%)	6/1/2027
b3800.36	Rebuild 5012 (existing Peach Bottom-Conastone) (new North Delta-Graceton BGE) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Gracetone 500 kV stations.	$10.44	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (51.35%) / Dominion (32.44%) / DPL (0.01%) / JCPL (0.01%) / PEPCO (16.17%) / PSEG (0.02%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.37	Replace terminal equipment limitations at Conastone 500 kV - on the (existing Peach Bottom-Conastone) or (new Graceton-Conastone) 500 kV line.	$4.93	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (12.36%) / Dominion (24.57%) / DPL (25.17%) / JCPL (7.90%) / Neptune (0.88%) / PENELEC (1.60%) / PEPCO (12.32%) / PSEG (14.57%) / RE (0.63%)	6/1/2027
b3800.38	Chalk Point-Cheltanham 500 kV (5073) - Replace relay at Chalk Point 500 kV.	$0.34	PEPCO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (39.75%) / Dominion (59.03%) / PEPCO (1.22%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.39	Red Lion-Hope Creek 500 kV - Replace terminal equipment at Red Lion.	$4.00	DPL	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEC (0.02%) / BGE (22.89%) / Dominion (48.61%) / DPL (9.46%) / JCPL (0.03%) / PEPCO (18.96%) / PSEG (0.03%)	6/1/2027
b3800.40	Conastone-Brighton 500 kV (5011 circuit) - Replace terminal equipment limitations at Brighton 500 kV.	$4.13	PEPCO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (9.65%) / Dominion (63.04%) / DPL (0.02%) / PEPCO (27.29%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.41	Conastone-Brighton 500 kV (5011 circuit) - Replace terminal equipment limitations at Conastone 500 kV.	$7.16	BGE	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (9.65%) / Dominion (63.04%) / DPL (0.02%) / PEPCO (27.29%)	6/1/2027
b3800.42	Peach Bottom North bus upgrade - Replace 11 – Instances of strain bus conductor used for breaker drops or CT drops, 7 – 500 kV disconnect switches, 7 – Free Standing CTs, 1 – 500 kV breaker, 2 – Breaker relays or meters.	$2.70	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: BGE (62.82%) / DPL (7.25%) / JCPL (0.09%) / Neptune (0.01%) / PECO (0.01%) / PEPCO (29.63%) / PSEG (0.18%) / RE (0.01%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.43	Construct 31.5 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (APS zone portion).	$176.80	PSEG	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)	6/1/2027
b3800.44	North Delta termination for the North Delta-High Ridge 500 line (PECO work).	$3.40	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.45	North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (PECO work).	$10.20	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEC (17.65%) / BGE (4.43%) / Dominion (9.87%) / DPL (22.25%) / JCPL (3.16%) / Neptune (0.36%) / PECO (2.98%) / PENELEC (0.44%) / PEPCO (3.80%) / PPL (5.99%) / PSEG (27.86%) / RE (1.21%)	6/1/2027
b3800.46	North Delta 500 kV termination for the new Peach Bottom-North Delta 500 kV line (PECO work).	$2.60	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.47	Build new Peach Bottom South-North Delta 500 kV line – cut in to Peach Bottom tie No. 1 and extending line to North Delta (~1.25 miles new ROW).	$5.50	PECO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)	6/1/2027
b3800.48	North Delta termination for the North Delta-High Ridge 500 line (Transource work).	$0.96	Transource	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.49	North Delta 500 kV termination for the Calpine generator (Calpine/Transource work).	$4.05	Transource	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: PECO (100.00%)	6/1/2027
b3800.50	North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (Transource work).	$0.49	Transource	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEC (17.65%) / BGE (4.43%) / Dominion (9.87%) / DPL (22.25%) / JCPL (3.16%) / Neptune (0.36%) / PECO (2.98%) / PENELEC (0.44%) / PEPCO (3.80%) / PPL (5.99%) / PSEG (27.86%) / RE (1.21%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.51	North Delta 500 kV termination for the new Peach Bottom-North Delta 500 kV line (Transource work).	$0.29	Transource	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)	6/1/2027
b3800.100	Establish a new 500 kV breaker position for the low-side of the existing 765/500 kV transformer at Cloverdale Station. The new position will be between two new 500 kV circuit breakers located in a new breaker string, electrically converting the 500 kV yard to "double-bus double-breaker" configuration.	$11.59	AEP	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEP (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.101	502 Junction substation two 500 kV circuit breaker expansion.	$30.60	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)	6/1/2027
b3800.102	New 500 kV line from existing 502 Junction substation to Woodside 500 KV substation (bypass Black Oak) NEET Portion.	$315.64	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.103	Rebuild ~16 miles of the Gore-Stonewall 138 kV line with 500 kV overbuild (502 Jct to Woodside 500 kV line section).	$151.72	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)	6/1/2027
b3800.104	Rebuild ~15 miles of the Stonewall-Millville 138 kV line with 500 kV overbuild (502 Jct to Woodside 500 kV line section).	$136.93	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.105	Rebuild ~6 miles of the Millville-Doubs 138 kV line with 500 kV overbuild (502 Jct to Woodside 500 kV line section).	$52.35	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)	6/1/2027
b3800.106	Woodside 500 kV substation (Except terminations, Transformer, Cap Banks and Statcom).	$43.96	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.107	Line Termination cost at Woodside 500 kV for 502 Jct to Woodside 500 kV line.	$0.51	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)	6/1/2027
b3800.108	Line Termination cost at Woodside 500 kV for Woodside to Aspen 500 kV line.	$0.51	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.113	Two 150 MVAR Cap banks and one +500/-300 MVAR STATCOM at Woodside 500 kV substation.	$44.22	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (100.00%)	6/1/2027
b3800.115	Line work for terminating Doubs to Bismark line for Doubs side for Woodside 500 kV substation. NEET Portion	$0.51	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (27.49%) / BGE (9.83%) / Dominion (53.78%) / PEPCO (8.90%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.116	Line work for terminating Doubs to Bismark line for Doubs side for Woodside 500 kV substation. FE Portion	$0.06	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (27.49%) / BGE (9.83%) / Dominion (53.78%) / PEPCO (8.90%)	6/1/2027
b3800.117	Line work for terminating Doubs to Bismark line for Bismark side for Woodside 500 kV substation. NEET Portion	$0.51	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (21.09%) / BGE (6.55%) / Dominion (64.94%) / PEPCO (7.42%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.118	Line work for terminating Doubs to Bismark line into Woodside 500 kV substation. DOM Portion	$5.10	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (21.09%) / BGE (6.55%) / Dominion (64.94%) / PEPCO (7.42%)	6/1/2027
b3800.119	New 500 kV transmission line from Woodside substation to Aspen substation (in DOM zone). NEET Portion	$71.72	NEET	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.120	Aspen substation work to terminate new NextEra 500 kV line. Include Aspen 500 kV subsation portion build.	$30.49	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)	6/1/2027
b3800.121	Kammer to 502 Junction 500 kV line: Conduct LIDAR Sag Study to assess SE rating and needed upgrades.	$0.10	AEP	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: AEP (21.66%) / APS (0.01%) / BGE (7.14%) / DEOK (0.01%) / Dominion (62.25%) / PEPCO (8.93%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.122	Rebuild 500 kV line No. 514 from Doubs-Goose Creek 500 kV line. The Doubs-Goose Creek 500 kV line will be rebuilt and the Doubs-Dickerson 230 kV will be relocated and underbuilt on the same structure. APS Portion	$103.27	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)	6/1/2027
b3800.123	Doubs substation work - Re-terminate the rebuilt Doubs-Goose Creek 500 kV line in its existing bay, Terminate the new Doubs-Aspen 500 kV line in the open bay at Doubs, Replace three 500 kV breakers, Replace 500 kV terminal equipment including disconnect switches, CTs and substation conductor & Replace relaying. APS Portion	$31.70	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.124	New Doubs to Aspen 500 kV line - Aspen substation is not yet constructed but is a component in Dominion's proposal 2022-W3-692. The Doubs-Aqueduct and Aqueduct-Dickerson 230 kV lines will be rebuilt and attached on the same structures. APS Portion	$68.80	APS	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.09%) / Dominion (99.89%) / PEPCO (0.02%)	6/1/2027
b3800.200	Build a new 500 kV line from Aspen-Golden on 500/230 kV double circuit structures with substation upgrades at Aspen and Golden. New conductor to have a minimum summer normal rating of 4357MVA.	$176.02	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (100.00%)	6/1/2027
b3800.202	Install (1) 500-230 kV transformer bank at Aspen substation.	$42.00	Dominion	Dominion (86.28%) / PEPCO (13.72%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.212	Build a new 500 kV line from Mars-Golden on 500/230 kV double circuit structures with substation upgrades at Golden and Mars. New conductor to have a monimum summer normal rating of 4357 MVA.	$228.04	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (99.96%) / Dominion (0.04%)	6/1/2027
b3800.213	Cut 500 kV line No. 558 Brambleton-Goose Creek into Aspen substation. Upgrade 500 kV terminal equipment at Aspen and Goose Creek to 5000A continuous rating current. At Goose Creek, replace circuit breakers 59582 and 55882, and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating.	$50.12	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (99.39%) / Dominion (0.61%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.214	Build a new 500 kV line from Aspen-Goose Creek to achieve a summer rating of 4357 MVA. Install new 500 kV terminal equipment at Aspen.	$38.53	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (99.39%) / Dominion (0.61%)	6/1/2027
b3800.217	Build a new 230 kV line from Aspen-Sycolin Creek on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek.	$60.42	Dominion	Dominion (86.28%) / PEPCO (13.72%)	6/1/2027
b3800.225	Change 500 kV line No. 558 destination at Brambleton to Aspen substation and upgrade line protection relays.	$0.23	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (5.20%) / DL (0.46%) / Dominion (91.40%) / ME (0.59%) / PEPCO (2.35%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.238	Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 kV line No. 203 rebuild. Replace circuit breakers 203T274 & L3T203 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating.	$1.81	Dominion	APS (8.09%) / BGE (8.25%) / Dominion (64.87%) / PEPCO (18.79%)	6/1/2027
b3800.239	Wreck and rebuild 230 kV line No. 203 between Pleasant View and structure 203/15 using double circuit 500/230 kV structures. The 500 kV line is from Aspen-Doubs.	$6.87	Dominion	APS (8.09%) / BGE (8.25%) / Dominion (64.87%) / PEPCO (18.79%)	6/1/2027
b3800.240	Build a new 500 kV line from Aspen-Doubs using double circuit 500/230 kV structures. The 230 kV line is from Pleasant View-structure 203/15. Install terminal equipment at Aspen for a 5000A line to Doubs (First Energy). This includes GIS breakers, GIS-to-AIS transition equipment, and metering CCVTs and CTs for the tie line.	$41.68	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.09%) / Dominion (99.89%) / PEPCO (0.02%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.241	Rebuild 500 kV line No. 514 from Goose Creek-Doubs using 500/230 kV double circiut structures. The new double circuit towers will accommodate 230 kV line No. 2098 between Pleasant View substation and structure 2098/9. Upgrade equipment at Goose Creek to 5000A continuous current rating in support of line No. 514 wreck and rebuild. Replace circuit breakers 514T595 & 51482 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating.	$16.11	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)	6/1/2027
b3800.242	Upgrading switches 20366M and 20369M and line leads to 4000A continuous current rating of 230 kV line No. 203 at Edwards Ferry substation	$0.51	Dominion	APS (11.45%) / BGE (14.14%) / Dominion (42.82%) / PEPCO (31.59%)	6/1/2027
b3800.243	Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen. (the 500 kV portion of the work)	$37.20	PEPCO	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (0.09%) / Dominion (99.89%) / PEPCO (0.02%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.244	Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen. (The 230 kV portion of the project)	$18.60	PEPCO	APS (9.78%) / BGE (12.07%) / Dominion (51.18%) / PEPCO (26.97%)	6/1/2027
b3800.245	Reconfigure Dickerson H 230 kV substation and upgrade terminal equipment.	$10.58	PEPCO	APS (9.78%) / BGE (12.07%) / Dominion (51.18%) / PEPCO (26.97%)	6/1/2027
b3800.306	Install one (1) 500 kV, 150 MVAr Shunt Capacitor Bank & associated equipment at Morrisville substation. This addition will require a control house expansion to accommodate for two new panels.	$3.63	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (100.00%)	6/1/2027
b3800.307	Install one (1) 500 kV, 300 MVAR Static synchronous Compensator (STATCOM) & associated equipment at Mars substation.	$41.27	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (100.00%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.310	Install one 500 kV, 293.8MVAr Shunt Capacitor Bank & associated equipment at Wishing Star substation.	$3.97	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (100.00%)	6/1/2027
b3800.311	Rebuild 500 kV line No. 545 Bristers-Morrisville as a single circuit monopole line to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA.	$65.86	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (91.07%) / PEPCO (8.93%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.312	Rebuild 500 kV line No. 569 Loudoun-Morrisville to accommodate the new 500 kV line in the existing right-of-way. New conductor to have a summer rating of 4357 MVA.	$175.62	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (11.72%) / Dominion (88.28%)	6/1/2027
b3800.313	Rebuild approximately 10.29 miles line segment of line No. 535 (Meadow Brook to Loudoun) to accommodate the new 500 kV line in the existing ROW.	$65.86	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.93%) / BGE (6.86%) / Dominion (70.92%) / PEPCO (8.29%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.314	Rebuild approximately 4.83 miles of 500 kV line No. 546 Mosby-Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV lines No. 546.	$49.79	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (41.98%) / Dominion (34.03%) / PEPCO (23.99%)	6/1/2027
b3800.315	Rebuild approximately 4.59 miles of 500 kV line No. 590 Mosby-Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV lines No. 590.	$49.79	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (41.98%) / Dominion (34.03%) / PEPCO (23.99%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.336	Upgrade and install equipment at Bristers substation to support the new conductor 5000A rating for 500 kV line No. 545.	$5.72	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: Dominion (91.07%) / PEPCO (8.93%)	6/1/2027
b3800.344	Upgrade and install equipment at Loudoun substation to support the new conductor 5000A rating for 500 kV line No. 569 Loudoun-Morrisville.	$10.70	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (11.72%) / Dominion (88.28%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.346	Upgrade and install equipment at Morrisville substation to support the new 500 kV conductor termination. All terminal equipment to be rated for 5000 A for 500 kV line No. 545 & No. 569. Upgrade 500 kV bus 2 to 5000 A.	$17.54	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (11.72%) / Dominion (88.28%)	6/1/2027
b3800.350	Install terminal equipment at Vint Hill substation to support a 5000A line to Morrisville. Update relay settings for 230 kV lines No. 2101, No. 2163, and 500 kV line No. 535.	$23.64	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (9.79%) / Dominion (90.21%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.353	Update relay settings at Vint Hill for 500 kV line No. 535 Vint Hill-Loudoun.	$0.03	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (13.93%) / BGE (6.86%) / Dominion (70.92%) / PEPCO (8.29%)	6/1/2027
b3800.354	Install terminal equipment at Wishing Star substation to support a 5000A line to Vint Hill. Update relay settings for 500 kV lines No. 546 and No. 590.	$12.30	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (21.45%) / Dominion (78.55%)	6/1/2027

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3800.356	Build a new 500 kV line from Vint Hill to Wishing Star. The line will be supported on single circuit monopoles. New conductor to have a summer rating of 4357 MVA. Line length is approximately 16.59 miles.	$87.81	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (21.45%) / Dominion (78.55%)	6/1/2027
b3800.357	Build a new 500 kV line from Morrisville to Vint Hill. New conductor to have a summer rating of 4357 MVA. Line length is approximately 19.71 miles.	$101.89	Dominion	Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: APS (9.79%) / Dominion (90.21%)	6/1/2027

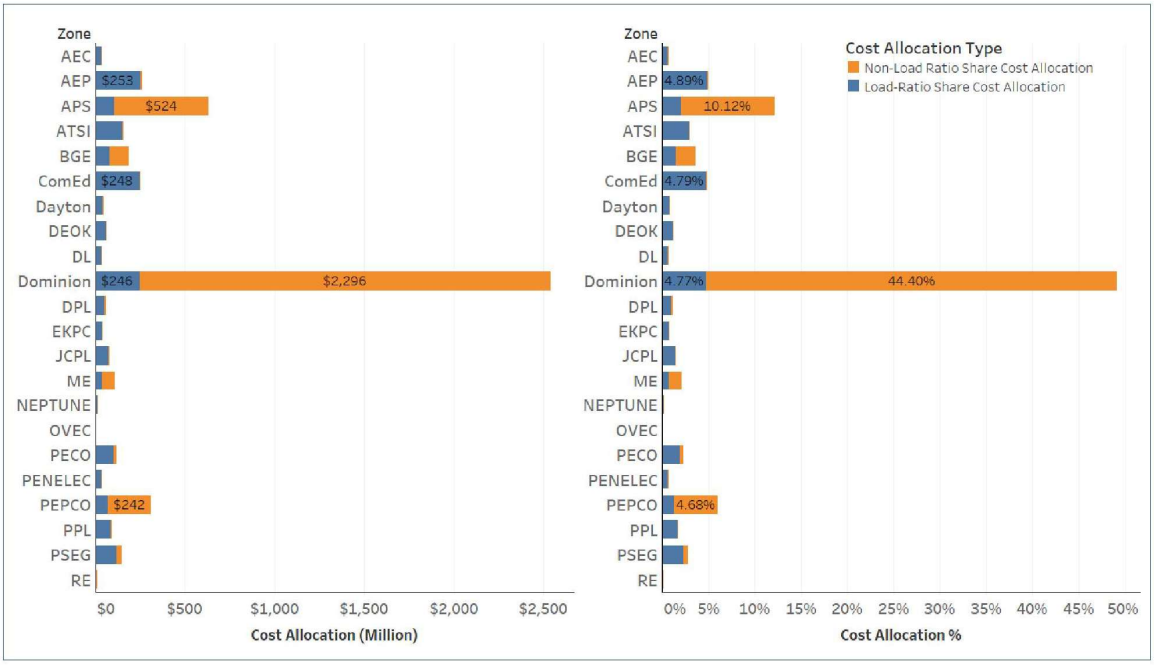
Attachment C – Reliability Project Multi-Driver Cost Allocations

Upgrade ID	Description	Cost Estimate ($M)	TO	Cost Responsibility	Required In-Service Date
b3737.47	Build New North Delta 500 kV substation (four bay breaker and half configuration) - the substation will include 12 - 500 kV breakers and one 500/230 kV transformer, will allow the termination of six - 500 kV lines.	104.1	Transource	Public Policy Driver: (73.27%) AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%) Reliability Driver: (26.73%) Load-Ratio Share Allocation: AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%) DFAX Allocation: PECO (100.00%)	6/1/2029

Figure 1. Project Cost by Cluster

Figure 2. Project Cost by Designated Entity

Figure 3. Cost Allocation by Zone



Attachment D – Interconnection Queue Projects With System Impact Study Reports Issued

Generation Interconnection Requests

Queue Position	Transmission Owner	Fuel Type	MW Energy	MW Capacity
AD1-013	ComEd	Solar	40	15.4
AD1-031	ComEd	Solar	70	26.6
AD1-039	ComEd	Natural Gas	102.7	93
AD1-056	Dominion	Solar	60	38.9
AD1-057	Dominion	Solar	33	21.7
AD1-074	Dominion	Solar	300	198.8
AD1-075	Dominion	Solar	75	49.7
AD1-076	Dominion	Solar	109	72.2
AD1-098	ComEd	Solar	100	57.8
AD1-100	ComEd	Wind	850	150
AD1-102	AEP	Wind	180.01	23.4
AD2-008	Dominion	Solar	52.1	16.4
AD2-033	Dominion	Solar	130	78
AD2-038	ComEd	Wind	150	26.4
AD2-046	Dominion	Solar	80	54.8
AD2-047	ComEd	Wind	200	34
AD2-063	Dominion	Solar	149.5	89.7
AD2-066	ComEd	Solar	116	69.6
AD2-077	PPL	Storage	150	100
AD2-100	ComEd	Solar	210	126
AD2-131	ComEd	Solar	50	8.3
AD2-134	ComEd	Wind	105.9	21.2
AD2-162	AEP	Solar	110	73.81
AD2-178	AEP	Solar	120	72
AD2-179	AEP	Solar	100	60
AD2-194	ComEd	Natural Gas	60	120
AD2-214	ComEd	Solar	68	40.8
AE1-001	BGE	Nuclear	28.1	7.1
AE1-068	Dominion	Solar	500	322.1
AE1-069	Dominion	Solar	400	254.5
AE1-093	AEP	Storage	42	42
AE1-107	DPL	Solar	53.1	31
AE1-113	ComEd	Wind	300	66
AE1-149	Dominion	Solar	100	60
AE1-163	ComEd	Wind	350	49
AE1-170	AEP	Solar	150	63

Queue Position	Transmission Owner	Fuel Type	MW Energy	MW Capacity
AE1-207	AEP	Solar	160	67.2
AE1-208	AEP	Solar	130	55
AE1-209	AEP	Wind	100	13
AE1-210	AEP	Wind	100	13
AE1-227	AEP	Solar	49.5	30.69
AE1-240	AEC	Solar	49.7	29
AE1-245	AEP	Wind	150	19.5
AE1-250	AEP	Solar	150	90
AE2-020	AEC	Offshore Wind	604.8	106.44
AE2-021	AEC	Offshore Wind	604.8	106.44
AE2-022	AEC	Offshore Wind	300	52.8
AE2-024	JCPL	Offshore Wind	882	155.23
AE2-025	JCPL	Offshore Wind	445.2	78.36
AE2-034	Dominion	Solar	60	42
AE2-047	AEP	Solar	50	32.4
AE2-072	AEP	Solar	150	90
AE2-089	AEP	Solar	155	93
AE2-113	PENELEC	Solar	120	61.9
AE2-137	APS	Natural Gas	84	87
AE2-160	AEP	Hydro	51	30
AE2-166	AEP	Solar	90	54
AE2-169	AEP	Solar	33	33
AE2-172	AEP	Storage	40	40
AE2-194	ATSI	Solar	145	84
AE2-195	AEP	Solar	19.7	9
AE2-214	AEP	Solar	200	120
AE2-219	AEP	Solar	100	42
AE2-236	AEP	Solar	55	38.5
AE2-255	ComEd	Wind	100	25
AE2-262	APS	Solar	83.6	50
AE2-263	APS	Solar	78.38	47
AE2-264	PENELEC	Solar	80	48
AE2-267	DEOK	Solar	49	28.6
AE2-281	ComEd	Wind	50	7
AE2-298	AEP	Solar	49.9	29.9
AE2-299	PENELEC	Storage	160	32
AE2-302	AEP	Solar	49.9	29.94
AE2-308	EKPC	Solar; Storage	150	110
AE2-316	APS	Solar	90	41.2
AE2-322	AEP	Solar	60	40.3
AE2-323	AEP	Solar	100	67.1

Queue Position	Transmission Owner	Fuel Type	MW Energy	MW Capacity
AF1-017	Dominion	Solar	20	7.6
AF1-019	JCPL	Storage	20	0
AF1-029	AEP	Solar	25	15
AF1-064	ATSI	Solar	50	33.4
AF1-078	Dayton	Solar	45	18.9
AF1-086	PENELEC	Wind	109.9	20.54
AF1-092	AEP	Solar; Storage	150	115
AF1-094	PENELEC	Solar	20	12
AF1-098	PENELEC	Solar	80	48
AF1-104	PENELEC	Solar; Storage	20	20
AF1-120	ATSI	Solar	40	26.6
AF1-122	ATSI	Solar	64	26.88
AF1-130	AEP	Solar	190	133.9
AF1-134	PENELEC	Solar	20	12
AF1-143	PENELEC	Solar	100	60
AF1-153	APS	Solar	20	12
AF1-158	AEP	Solar; Storage	150	90
AF1-164	AEP	Solar	300	195
AF1-167	APS	Solar	13.515	8.109
AF1-202	AEP	Wind	200	34
AF1-204	AEP	Wind	255	63.75
AF1-205	AMPT	Solar	40	24
AF1-207	AEP	Solar	180	34
AF1-215	AEP	Solar	300	180
AF1-216	PPL	Solar	143.11	85.87
AF1-223	AEP	Solar	150	90
AF1-225	APS	Solar	20	8.4
AF1-227	AEP	Solar	325	195
AF1-228	AEP	Solar	155	93
AF1-229	AEP	Solar	120	72
AF1-254	APS	Solar	20	12
AF1-272	PENELEC	Solar	110	66
AF1-279	ATSI	Solar; Storage	150	90
AF1-286	PENELEC	Solar	13.6	5
AF1-325	JCPL	Storage	20	0
AF2-001	PENELEC	Solar	20	12
AF2-002	PENELEC	Solar	10	6
AF2-021	AEC	Storage	20	8
AF2-024	AEC	Storage	24	9.6
AF2-039	PENELEC	Solar	13.5	8.1

Queue Position	Transmission Owner	Fuel Type	MW Energy	MW Capacity
AF2-055	ODEC	Storage; Solar	45	27
AF2-061	DPL	Storage	40	40
AF2-078	AEP	Solar; Storage	200	120
AF2-088	PENELEC	Solar	6.5	3.9
AF2-092	PENELEC	Solar	12	7.2
AF2-102	ME	Solar	3	1.8
AF2-119	Dominion	Solar	80	48
AF2-121	PENELEC	Solar	20	12
AF2-122	AEP	Solar	107.7	64.62
AF2-123	ATSI	Solar	49	20.58
AF2-129	ATSI	Solar	20	12
AF2-134	AEP	Solar	100	60
AF2-145	PPL	Solar	51	30.6
AF2-150	ATSI	Solar	88	36.96
AF2-165	PENELEC	Solar	20	12
AF2-166	PENELEC	Solar	20	12
AF2-175	ME	Solar	3	1.8
AF2-221	PENELEC	Solar	15	6.3
AF2-254	JCPL	Solar	10	4.2
AF2-313	DPL	Solar	19.9	12.7
AF2-322	ATSI	Solar	199.67	119.802
AF2-325	DPL	Solar; Storage	10	4.2
AF2-356	APS	Solar	175	105
AF2-416	PSEG	Storage	10	10
AG1-041	PENELEC	Solar	12	7.2
AG1-191	JCPL	Solar	15.4	6.5
AG1-193	PENELEC	Solar	20	12
AG1-252	ATSI	Solar	3.875	2.3
AG1-259	PPL	Solar	15.9	6.7
AG1-260	PPL	Solar	15.9	6.7
AG1-262	PPL	Storage	85	40
AG1-293	APS	Solar	7.5	4.9
AG1-301	PENELEC	Solar	20	12
AG1-478	ComEd	Solar; Storage	19.9	15.9

Attachment E – Interconnection Network Upgrades

Upgrade ID	Description	Cost Estimate ($M)	Required In-Service Date
n4106	Replace two Switches at the Clifty Creek 345 kV station.	$0.41	10/31/2023
n4106.3	Jefferson-Clifty 345 kV line sag study remediation is one location of grading to remediate clearance location of concern in span 1 to 2. Latest Facility Study: Extend one Tower on the Jefferson-Clifty Creek (IKEC) 345 kV Circuit.	$0.41	12/31/2022
n5769.5	Replace four Dumont switches on the Stillwell-Dumont 345 kV line.	$2.40	6/1/2020
n5769.6	Adjust Dumont relay trip limit settings on the Stillwell-Dumont 345 kV line.	$0.60	6/1/2020
n5783	Reconductor the AC1-078 Tap-London 138 kV line.	$3.91	6/1/2020
n5806	Relay Modification Work to Accommodate AD1-037.	$0.03	5/1/2019
n5833	Mitigate the sag on the 17ST John-St John 345 kV line.	$3.80	6/1/2021
n5834	Mitigate the sag on the St John-Green Acre 345 kV line.	$3.80	6/1/2021
n5867	Cut the East-Springfield-Tangy 138 kV line and terminate the line inside the proposed AD2-163 ring bus in an in-out configuration at East Springfield-Tangy 138 kV line.	$0.37	12/1/2021
n5868	Adjust remote, relaying and metering settings and replace 138 kV wave trap, line tuner and coax at Tangy 138 kV substation.	$0.12	12/1/2021
n5869	Adjust remote, relaying and metering settings and replace 138 kV wave trap, line tuner and coax. Also replace line and carrier relaying at East Springfield 138 kV substation.	$0.27	12/1/2021
n5879	Rebuild the 6705 Sharptown-AD2-088 TAP 69 kV line.	$5.93	6/1/2020
n5880	Rebuild the 6705 AD2-088 TAP-Laurel 69 kV line	$5.09	6/1/2020
n5886	Install one span of Attachment Facility line from the Point of Interconnection (POI) to the tap point at or near MAIT structure No. 838-175 of the Lyons-Moselem 69 kV line.	$0.21	4/1/2020
n5887	Install two switches at the tap point at or near MAIT structure No. 838-175 of the Lyons-Moselem 69 kV line.	$0.42	4/1/2020
n5888	Estimated installation of 700 MHz radio system (70% penetration of FE territory) at AD2-115 to support the SCADA switch installations. Assumed SCADA work is included in this cost.	$0.05	4/1/2020
n6078	Substation – Design, install and test/commission Multiprotocol Label Switching (MPLS) Equipment for SCADA transport. Install fiber from AD2-158 to backbone for communication transport. SCADA work at Millville and Double Toll Gate substations to support wave trap & relay installations. Estimated one in-sub fiber run from AD2-158 substation control house to Interconnection Customer built fiber run to support communications and control to generator site.	$0.67	9/1/2020
n6079	Project Management, Environmental, Forestry, Real Estate and Right of Way at AD2-158 interconnection substation.	$1.34	9/1/2020
n6080	Double Toll Gate-Millville 138 kV Line – Cut the Double Toll Gate 138 kV line and install line loop to the new AD2-158 Wheatland 138 kV Interconnection substation.	$0.75	9/1/2020

Upgrade ID	Description	Cost Estimate ($M)	Required In-Service Date
n6081	Double Toll Gate 138 kV substation – Upgrade carrier and line relaying and wave trap.	$0.55	9/1/2020
n6082	Millville 138 kV substation – Upgrade carrier relaying and wave trap.	$0.36	9/1/2020
n6134	Build a new three breaker 230 kV ring bus cutting the Clover-Sedge Hill 230 kV line.	$6.12	9/2/2019
n6135	Install new structures to cut and loop the line into AD1-087 switching station.	$1.28	9/2/2019
n6136	Protection and communication work to support interconnection of new AD1- 087 generator.	$0.16	9/2/2019
n6197.1	Uprate CT associated with Barren Co-Horsecave Jct 69 kV line.	$0.00	6/1/2022
n6197.2	Upgrade jumpers at Barren Co associated with Barren Co-Horsecave Jct 69 kV line.	$0.01	6/1/2022
n6198.2	Uprate high side and two lowside CTs associated with Barren Co 161/69 kV Auto to a minimum of 230 MVA summer LTE.	$0.00	6/1/2022
n6220	Install a second, back-to-back breaker between existing line positions No. 254 and No. 2141 at the Lakeview substation.	$1.96	12/31/2017
n6232	Upgrade the existing 500 MCM Cu bus jumpers to 750 MCM Cu. New rating after the upgrade will be 148 MVA.	$0.25	12/31/2023
n6235	Build a three-breaker ring bus at the new AC1-043 substation.	$5.47	10/2/2019
n6237	Modify protection and communication work to support interconnection of new AC1-105 generator.	$0.18	10/2/2019
n6239	Install metering and overhead conductors from the POI to the interconnection switching substation AC2-088/AD1-136.	$0.42	6/30/2020
n6274	Install an Attachment facility line from the AC1-074 interconnection substation to the first structure located outside of the switchyard. Also, install revenue metering.	$0.35	6/1/2019
n6275	Install a new loop-in tap line will be constructed from EKPC's existing Jacksonville to Renaker 138 kV transmission line to the new switching station.	$0.52	6/1/2019
n6279.2	Perform a sag study on the Desoto-Jay 138 kV line.	$0.05	12/31/2022
n6285	Modify breaker failure scheme to incorporate "A-Contact" logic to 138 kV blue bus to reduce total clearing times at TSS111 Electric Junction to 9 cycles for fault on 345/138 kV transformer 81.	$0.14	8/28/2023
n6331	Modify protection and communication work to support interconnection of new AC1-222 generator.	$0.18	1/31/2019
n6332	Build new structures to cut and loop the line No. 1016 into AC1-222 115 kV substation.	$0.68	1/31/2019
n6333	Build a three breaker 115 kV substation at the AC1-222 facility.	$5.10	1/31/2019
n6355	Modify protection and communication work to support interconnection of new AC1-221 generator.	$0.07	9/30/2018
n6356	Build new structures to cut and loop the line No. 1016 into AC1-221 230 kV substation.	$0.61	9/30/2018
n6357	Build a three breaker 230 kV substation at the AC1-221 facility.	$5.80	9/30/2018

Upgrade ID	Description	Cost Estimate ($M)	Required In-Service Date
n6383	A Sag Study will be required on the 20 miles section of ACSR ~ 477 ~ 26/7 ~ HAWK conductor section 2 line to mitigate the overload. New Ratings after the sag study S/N: 185MVA S/E: 257MVA. Depending on the sag study results, cost for this upgrade is expected to be between $80,000 (no remediation required just sag study) and $30 million (complete line reconductor/rebuild required).	$0.08	10/1/2024
n6457.1	The sag study was completed under AE1-130 project and determined that no violations occur on this line when operating at Maximum Operating Temperature. No work required on the circuit at this time.	$0.00	9/1/2024
n6463.2	Upgrade bus and jumpers associated with Boone 138 kV bus using 2- 500 MCM 37 CU conductor or equivalent on the Boone Co-Longbranch 138 kV line.	$0.17	6/1/2022
n6463.5	Boone Co-Longbranch 138 kV line: Replace the 750 MCM copper substation bus and jumpers at the Longbranch substation with bundled 500 MCM copper or equivalent equipment.	$0.19	1/31/2022
n6476	Perform a sag study on the 11.7-mile single circuit line between Fostoria Central and South Berwick.	$0.07	6/1/2022
n6494	Increase the maximum operating temperature of the 266 MCM ACSR conductor in the Edmonton/JB Galloway Jct-Knob Lick 69 kV line section to 176 degrees F (5.7 miles).	$0.31	12/31/2023
n6494.1	Increase MOT (maximum operating temperature) of 266 MCM ACSR conductor to 212 degrees on the EDM-JBGAL J-Knob Lick 69 kV line.	$0.29	12/31/2022
n6526.2	Sag Study will be required on ACSR ~ 954 ~ 45/7, 18.3 miles line between South Berwick and Galion. The cost is expected to be 73,200. New Ratings after sag study: S/N: 1409 MVA S/E: 1887 MVA. Rebuild/Reconductor cost: $ 36.6 million.	$0.73	9/25/2024
n6538.1	Replace five substation conductor 2156 ACSR 84/19 Std at E Lima.	$0.50	6/1/2023
n6538.2	Sag study is required on four-mile single circuit line between Fremont Center and Fremont with 1033 ACSR. The cost is expected to be around $20,000.The Rating after the sag study S/N: 1409MVA S/E: 1887MVA. Rebuild/Reconductor cost : $8 million.	$0.02	6/1/2023
n6538.3	Replace substation conductor 2870 MCM ACSR at E Lima.	$0.10	12/1/2022
n6632	New 138 kV substation with a three-position ring bus for AB2-036 interconnection.	$5.44	8/31/2024
n6634.10	Telecom upgrades at Highland 138 kV	$0.01	2/16/2017
n6634.11	Warren 138 kV station: Replace the wave trap on the feeder to Clinton County 138 kV station and make necessary relay settings changes.	$0.12	2/16/2017
n6634.12	Clinton County 138 kV station: Replace the wave trap on the high side of TB1.	$0.10	2/16/2017
n6634.6	Install 138 kV Revenue Meter, generator lead transmission line span from the new Spickard 138 kV station to the Point of Interconnection, and extend dual fiber-optic from the Point of Interconnection to the new Spickard 138 kV station control house.	$0.57	2/16/2017