

Dominion Supplemental Projects

Transmission Expansion Advisory
Committee
December 5, 2023

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

Dominion Transmission Zone: Supplemental

Need Number: DOM-2023-0053 Hunters Ridge

Process Stage: Need Meeting 12/05/2023

Project Driver: Customer Service

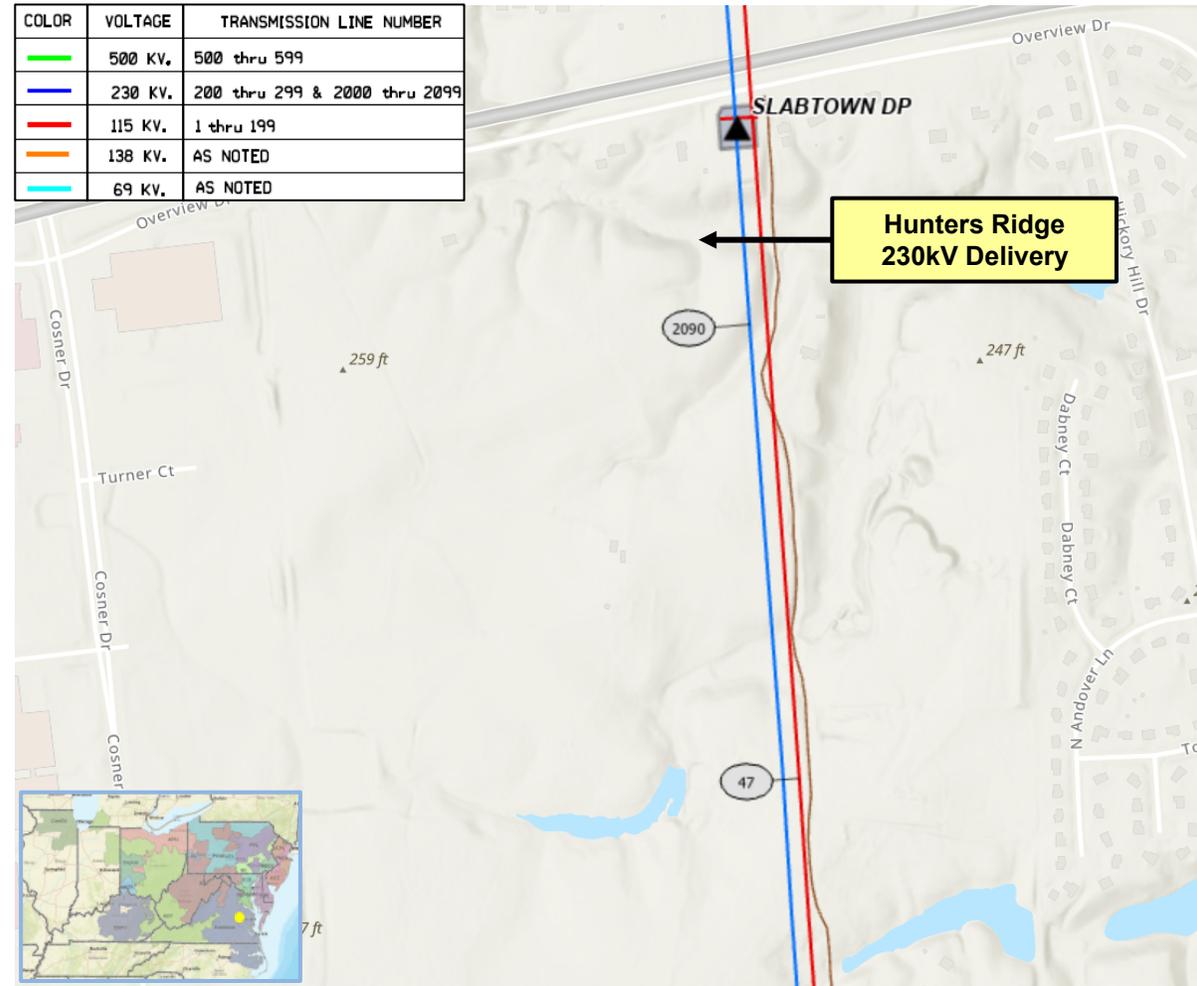
Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria.

Problem Statement:

ODEC has submitted a DP request for a new 230 kV delivery point (Hunters Ridge Sub) to serve a data center customer in Spotsylvania County with a total load in excess of 100 MW. Requested in-service date is 10/01/2025.

Initial In-Service Load	Projected 2028 Load
Summer: 0 MW Winter: 55 MW	Summer: 300 MW Winter: 300 MW



Dominion Transmission Zone: Supplemental

Need Number: DOM-2023-0055 Carmel Church

Process Stage: Need Meeting 12/05/2023

Project Driver: Customer Service

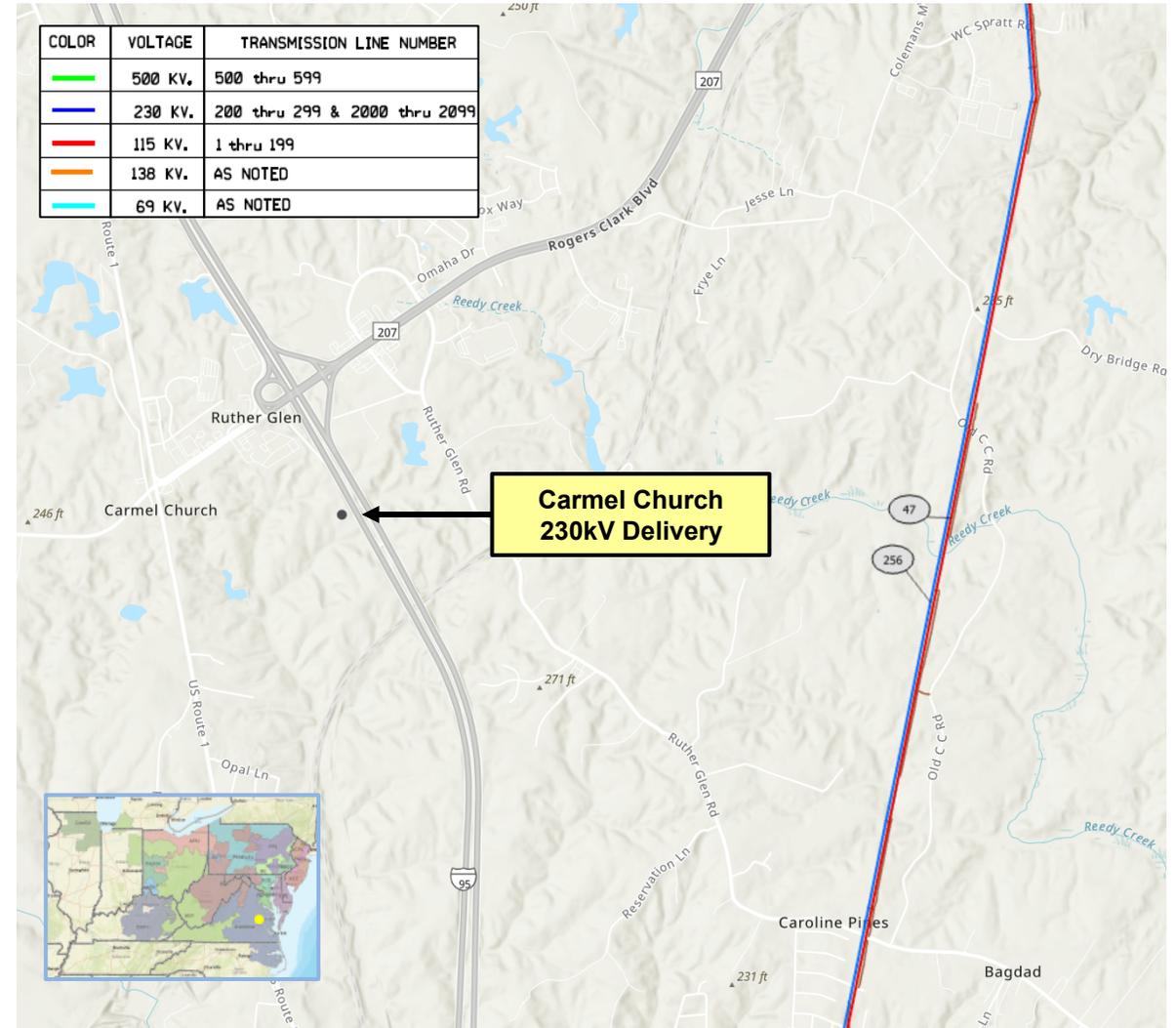
Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria.

Problem Statement:

ODEC has submitted a DP request for a new 230 kV delivery point (Carmel Church Sub) to serve a data center customer in Caroline County with a total load in excess of 100 MW. Requested in-service date is 12/31/2026.

Initial In-Service Load	Projected 2028 Load
Summer: 0 MW Winter: 18 MW	Summer: 125 MW Winter: 125 MW



Dominion Transmission Zone: Supplemental

Need Number: DOM-2023-0056 Alto
Process Stage: Need Meeting 12/05/2023
Project Driver: Customer Service

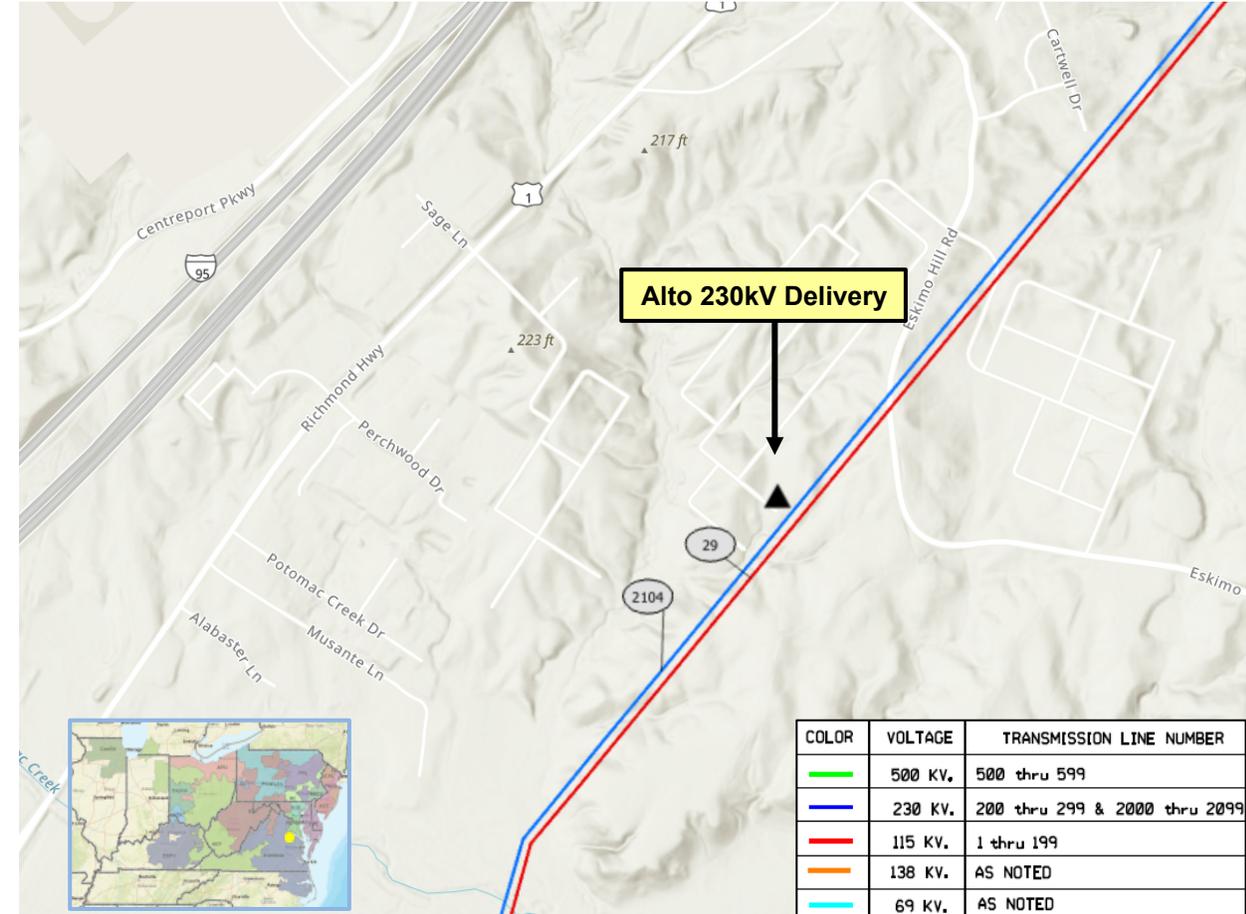
Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria.

Problem Statement:

DEV has submitted a DP request for a new 230 kV delivery point (Alto Sub) to serve a data center customer in Stafford County with a total load in excess of 100 MW. Requested in-service date is 7/01/2027.

Initial In-Service Load	Projected 2028 Load
Summer: 32 MW Winter: 55 MW	Summer: 112 MW Winter: 66 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2023-0057

Process Stage: Need Meeting 12/05/2023

Project Driver: Customer Service

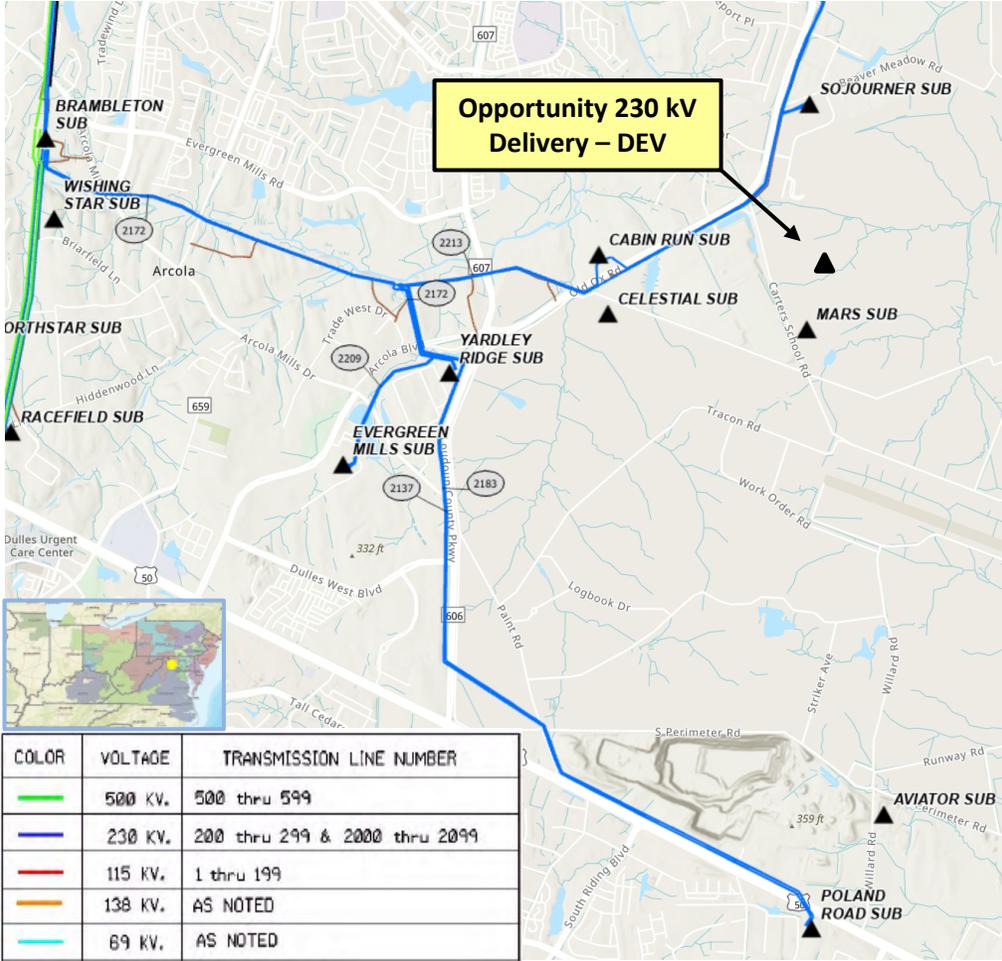
Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria.

Problem Statement:

NOVEC has submitted a DP request for a new substation (Opportunity) to serve a data center complex in Loudoun County with a total load in excess of 100 MW. Requested in-service date is 07/01/2027.

Initial In-Service Load	Projected 2028 Load
Summer: 3 MW Winter: 0 MW	Summer: 40 MW Winter: 12 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2023-0058

Process Stage: Need Meeting 12/05/2023

Project Driver: Customer Service

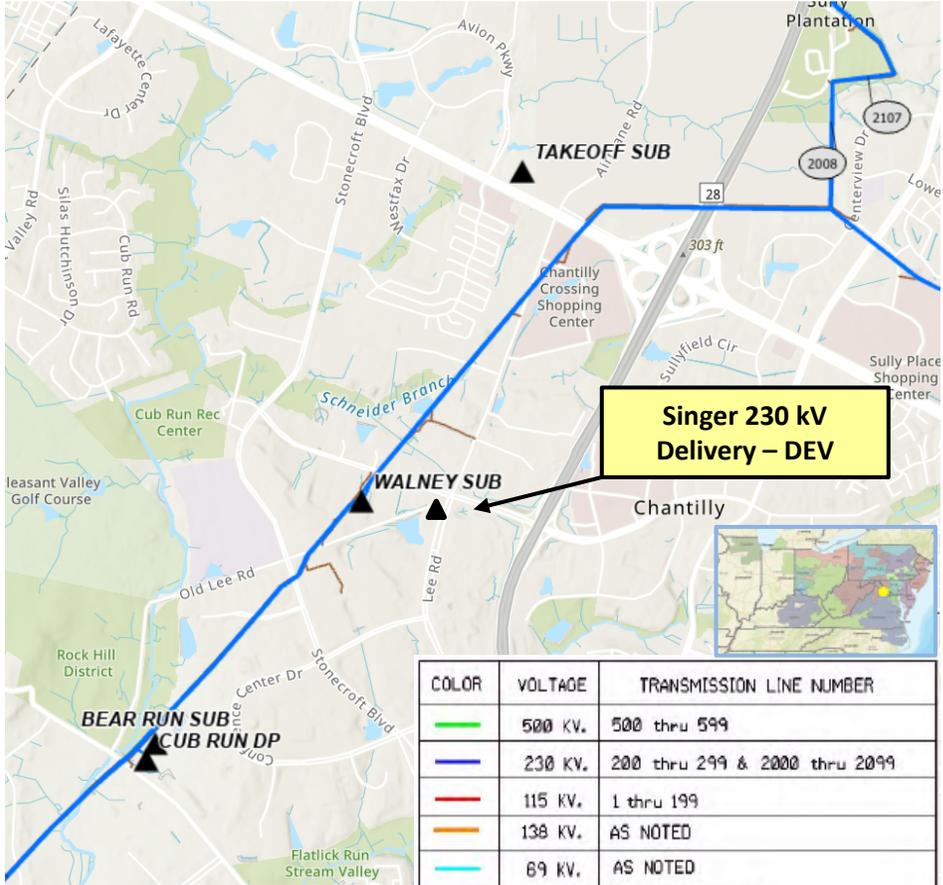
Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria.

Problem Statement:

DEV Distribution has submitted a DP request for a new substation (Singer) to serve a data center complex in Fairfax County with a total load in excess of 100 MW. Requested in-service date is 12/01/2027.

Initial In-Service Load	Projected 2028 Load
Summer: 86 MW Winter: 86 MW	Summer: 119 MW Winter: 119 MW



Dominion Transmission Zone: Supplemental Operational Flexibility and Efficiency

Need Number: DOM-2023-0059

Process Stage: Need Meeting 12/05/2023

Project Driver: Operational Flexibility and Efficiency

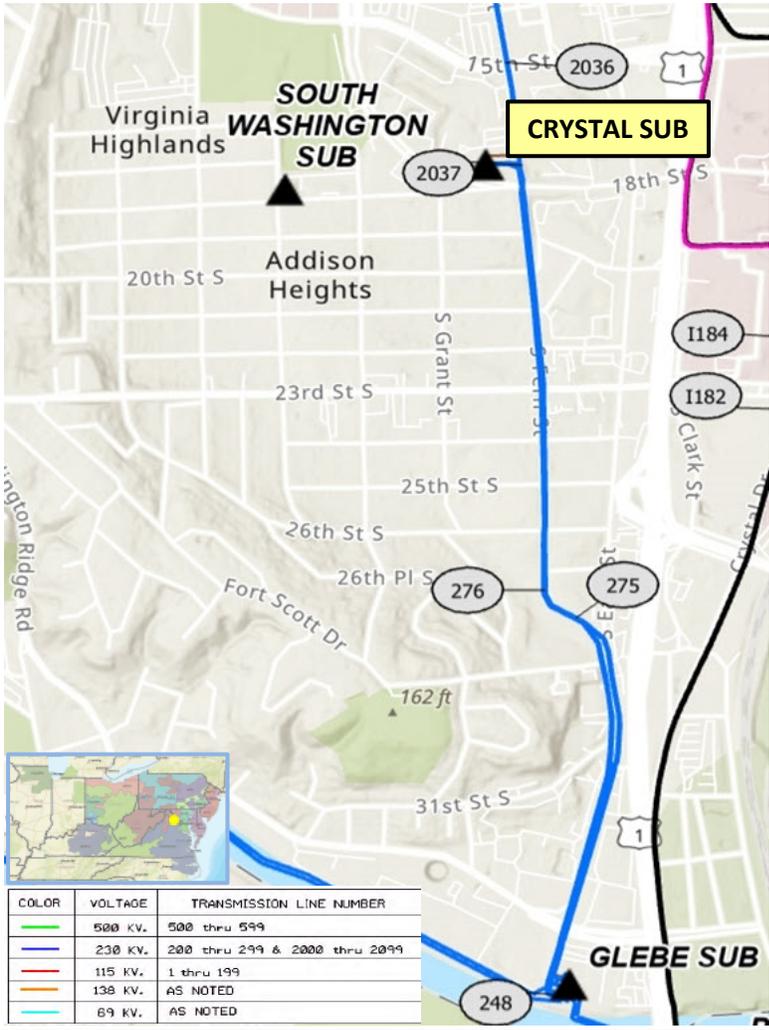
Specific Assumption References:

See details on Operational Flexibility and Efficiency in Dominion’s Planning Assumptions presented in December 2022.

Problem Statement:

At Crystal substation, two radial underground transmission lines source four distribution transformers. The 230kV 275 Line (Glebe – Crystal) sources TX1 and TX3. The 230kV 276 Line (Glebe – Crystal) sources TX2 and TX4. Each distribution transformer is equipped with relaying that protects the transformer for internal faults and provides backup tripping for downstream distribution circuits. Since there are no interruption devices between the high side of the distribution transformers and their respective lines, transfer trip must be sent to Glebe to isolate for faults.

The operation described here leads to the undesired consequence of tripping and locking out the radial 275/276 Lines for events that should be contained to the distribution level. A transmission solution is needed to correct this issue and improve customer reliability.



Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

Dominion Transmission Zone: Supplemental Equipment Material Condition, Performance and Risk

Need Number: DOM-2023-0044

Process Stage: Solution Meeting 12/05/2023

Previously Presented: Need Meeting 08/08/2023

Project Driver: Equipment Material Condition, Performance Risk

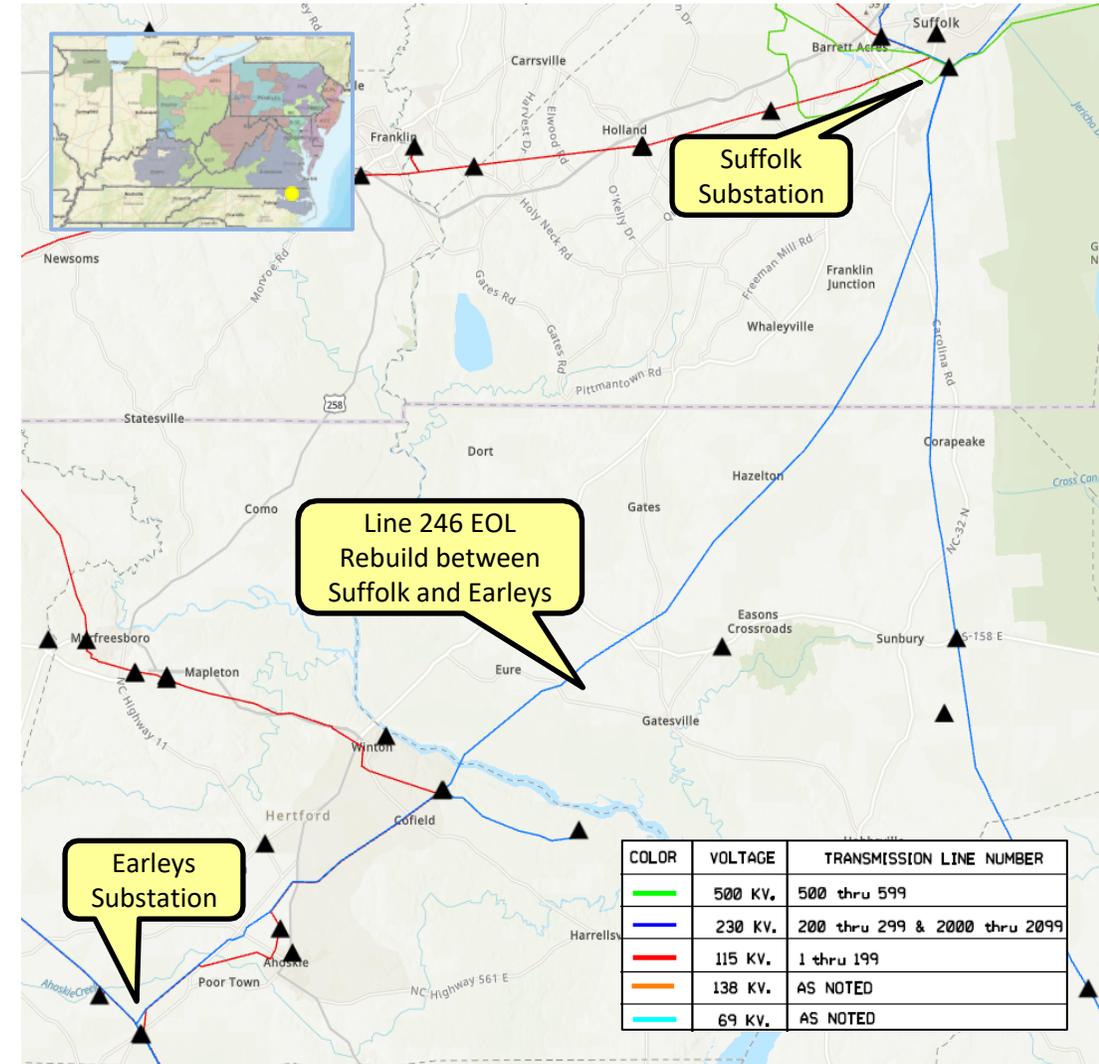
Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2022.

Problem Statement:

Dominion Energy has identified a need to replace approximately 44.3 miles of 230kV Line #246 (Suffolk to Earleys) to new 230kV standards based on the Company’s End of Life criteria.

- Line #246 was constructed on primarily wood H-frame structures in 1971, with many in need of replacement due to deterioration.
- Industry guidelines indicate equipment life for steel structures is 40-60 years, wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years.
- Line #246 provides service to Nucor substation with approximately 36.7MW of load.



Dominion Transmission Zone: Supplemental 230kV Line 246 – EOL Rebuild

Need Number: DOM-2023-0044

Process Stage: Solution Meeting 12/05/2023

Proposed Solution: Rebuild approximately 44.3 miles of Line 246 between Earleys and Suffolk to current 230kV standards. The normal rating of the line conductor will be 1573 MVA.

Estimated Project Cost: \$150M

Alternatives Considered:

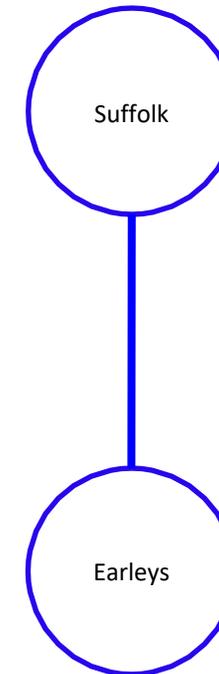
No feasible alternatives, End-of-Life

Line 246 is the only transmission supply to Nucor Steel. Permanent load loss for removal of this line is estimated at 36.7MW.

Project In-service Date: 12/31/2028

Project Status: Conceptual

Model: 2027 RTEP



Appendix

High level M-3 Meeting Schedule

Assumptions	Activity	Timing
	Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
	Stakeholder comments	10 days after Assumptions Meeting
Needs	Activity	Timing
	TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
	Stakeholder comments	10 days after Needs Meeting
Solutions	Activity	Timing
	TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
	Stakeholder comments	10 days after Solutions Meeting
Submission of Supplemental Projects & Local Plan	Activity	Timing
	Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
	Post selected solution(s)	Following completion of DNH analysis
	Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
	Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

11/22/2023 – V1 – Original version posted to pjm.com

12/5/2023 – V2 – Removed 1 need slide per Dominion Request