



Dominion Supplemental Projects

Transmission Expansion Advisory
Committee

April 11, 2019

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 Customer Load Request

Need Number: DOM-2019-0017

Meeting Date: 4/11/2019

Process Stage: NEED

Supplemental Project Driver: Customer Service

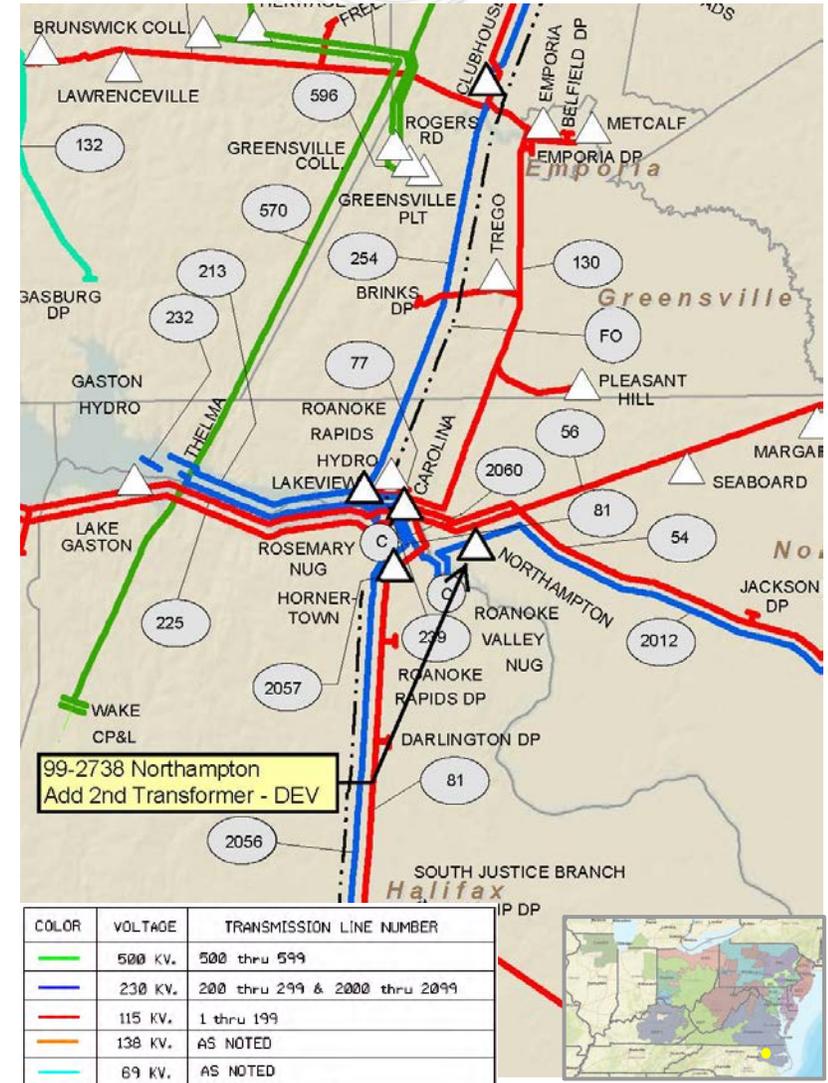
Problem Statement:

DEV Distribution has submitted a DP request to add a second distribution transformer at Northampton Substation in Northampton County, NC. This transformer will support commercial load growth and contingency loading for the loss of the existing transformer. Requested in-service date is 09/01/2020.

Initial In-Service Load	Projected 2024 Load
Summer: 26.2 MW	Summer: 27.8 MW

Specific Assumption References:

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



Need Number: DOM-2019-0019

Meeting Date: 04/11/2019

Process Stage: NEED

Supplemental Project Driver: Customer Service

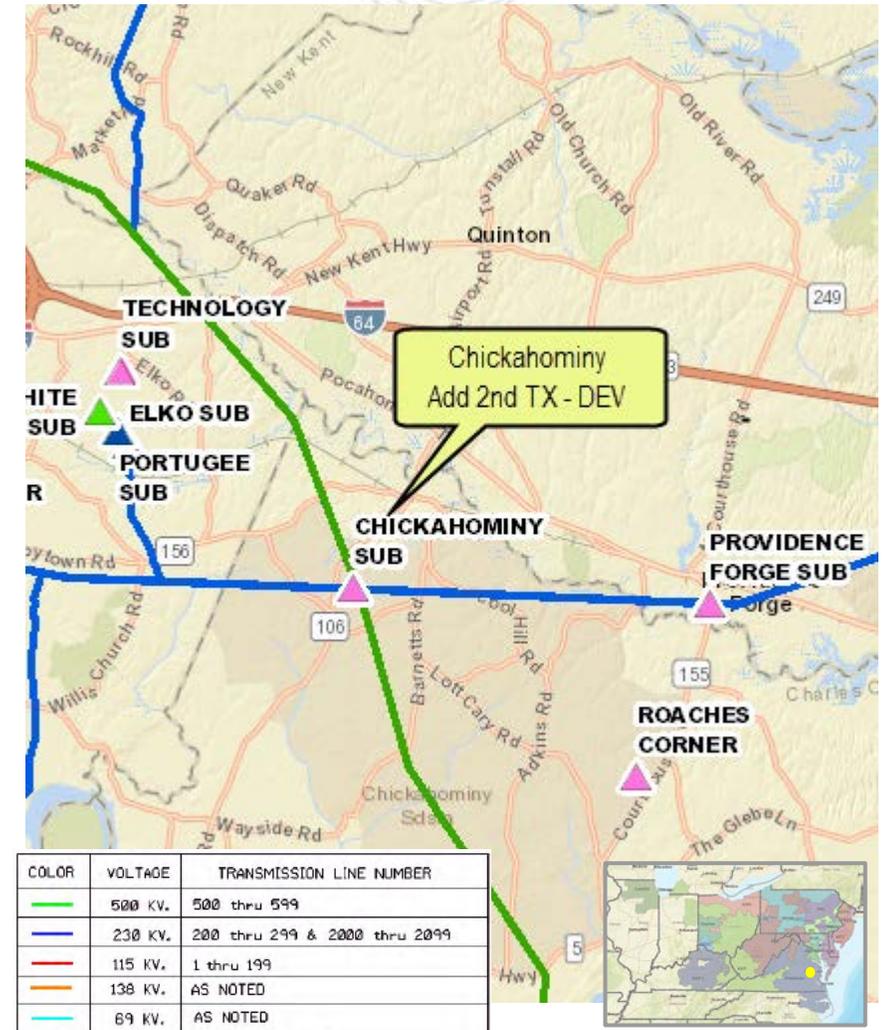
Problem Statement:

DEV Distribution has submitted a DP Request to add a 56 MVA distribution transformer at Chickahominy Substation in Charles City County. The new transformer is being requested for contingency support of Providence Forge substation. Requested in-service date is 5/31/2021.

Initial In-Service Load	Projected 2024 Load
Summer: 10 MW	Summer: 21 MW

Specific Assumption References:

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



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 Customer Load Request

Need Number: DOM-2018-0020

Meeting Date: 04/11/2019

Process Stage: SOLUTION

Need Presented: 12/13/2018

Supplemental Project Driver: Customer Service

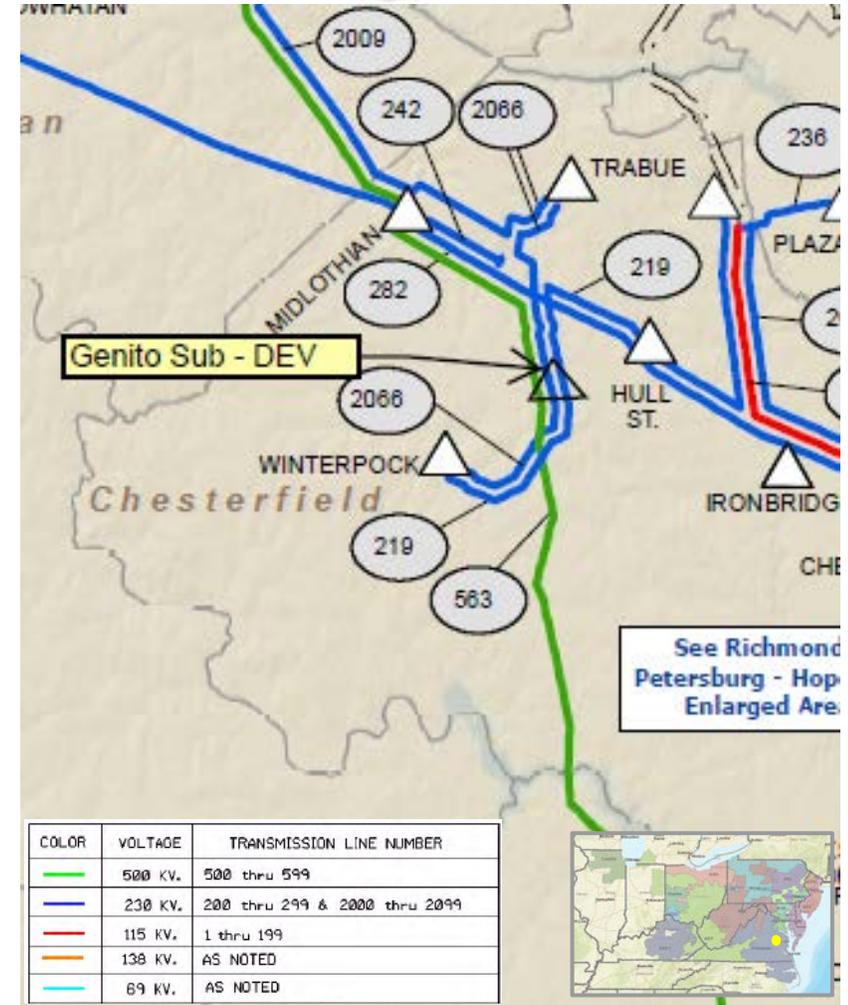
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Genito). DEV has received load requests in Chesterfield County with a total load of 36MVA. One development request is in the area of Genito Place, west of Hwy 288 and north of Genito Road, another request is also in close proximity. All existing substations are remote from the new developments and do not have adequate capacity. Requested in-service date is 05/15/2020.

Initial In-Service Year Load	Projected 2023 Load
Summer: 41.7 MW	Summer: 58.3 MW

Specific Assumption References:

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





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0020

Proposed Solution:

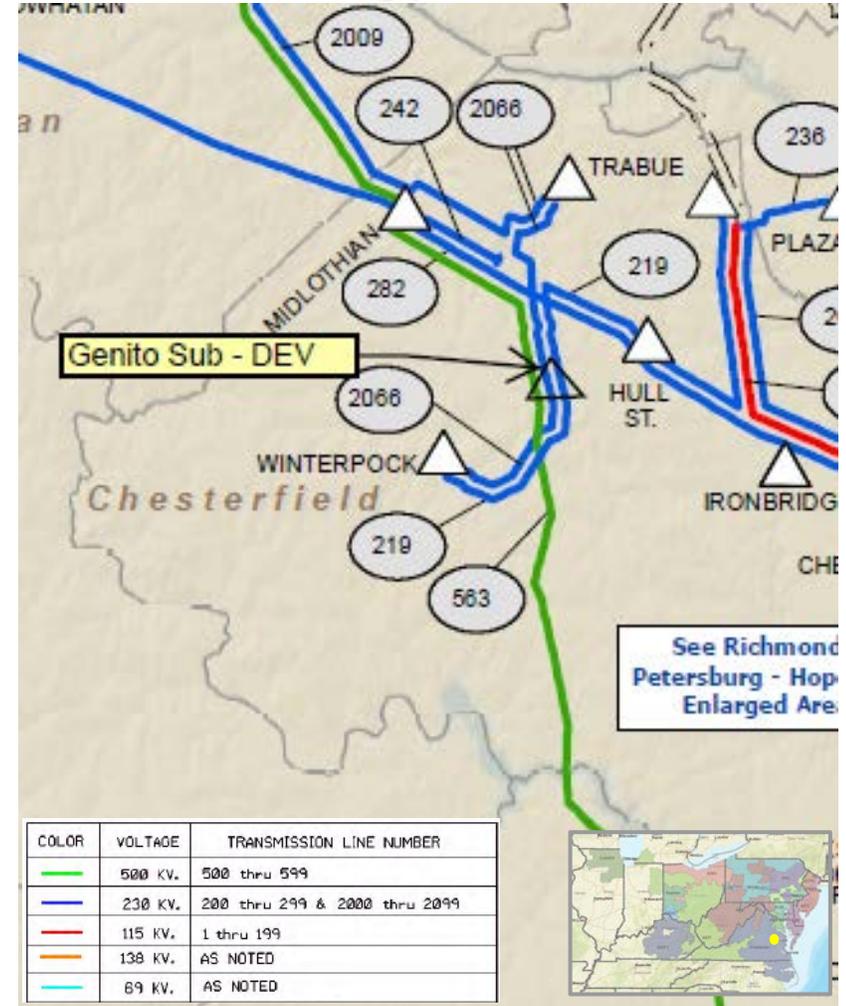
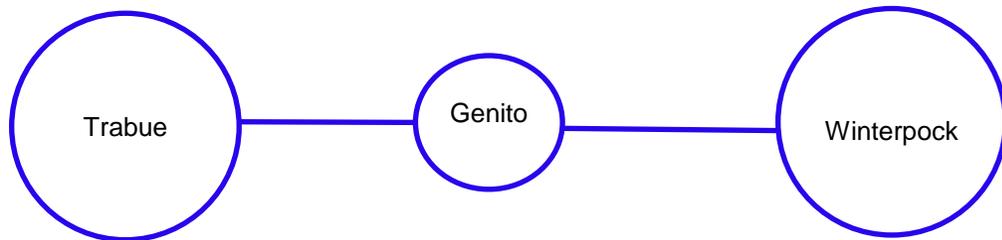
Cut into line #2066 and install three line switches. Install a 230kV circuit switcher on the high side of the new transformer. Perform any necessary associated transmission level work to support this new substation.

TO Alternatives Considered: No feasible alternatives

Estimated Project Cost: \$2.5 M

Project IS Date: 05/15/2020

Project Status: Conceptual





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2019-0002

Meeting Date: 04/11/2019

Process Stage: SOLUTION

Need Presented: 02/07/2019

Supplemental Project Driver: Customer Service

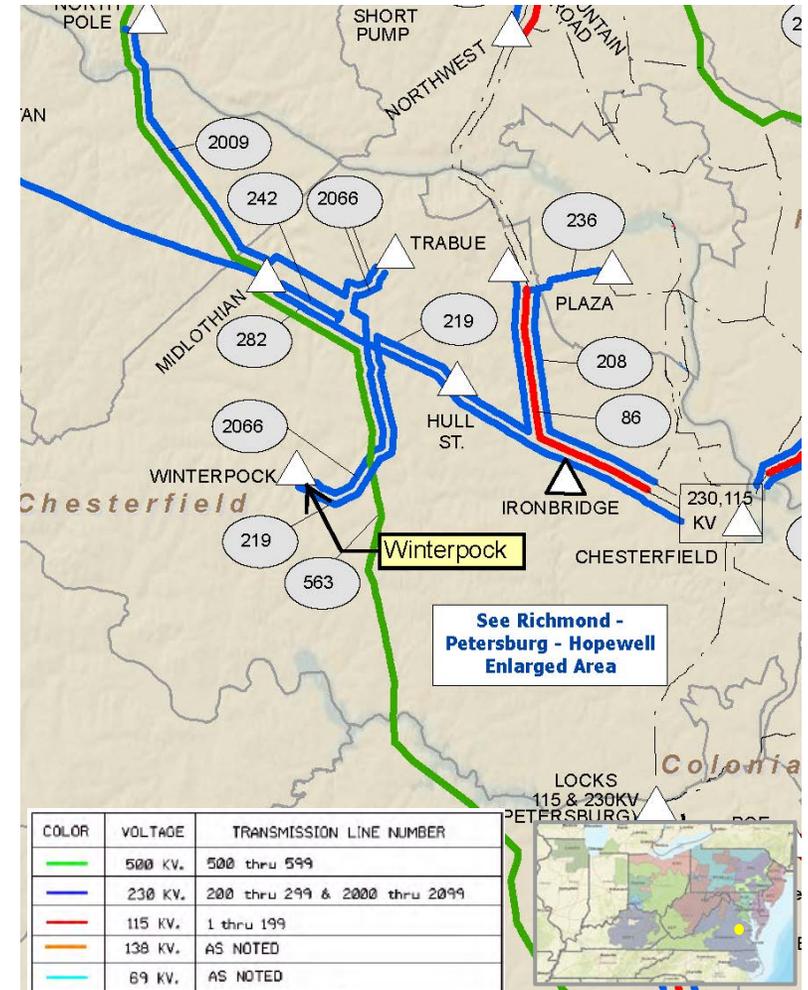
Problem Statement:

DEV Distribution has submitted a DP request to add a 3rd distribution transformer at Winterpock Substation. The station load growth has caused a transformer contingency to exceed the capacity of field switching plus a mobile transformer. Requested in-service date is 09/15/2020.

Initial In-Service Year Load	Projected 2024 Load
Winter: 179 MW	Winter: 206 MW

Specific Assumption References:

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





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2019-0002

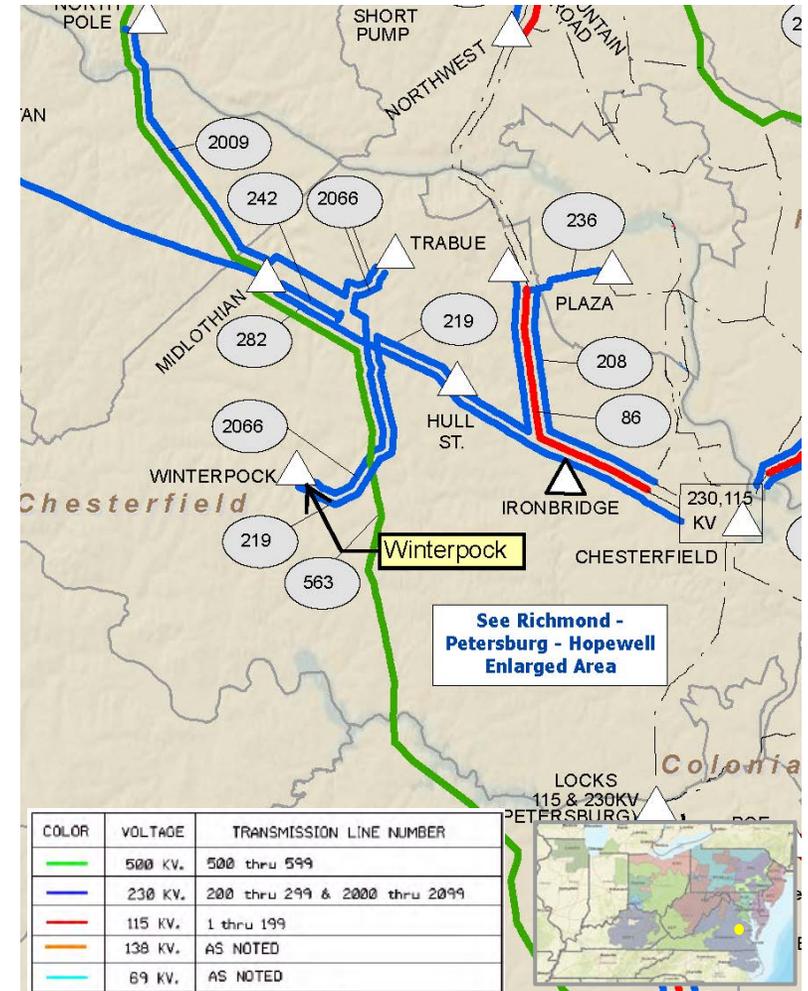
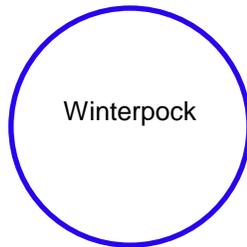
Proposed Solution :

A 4-breaker ring is required based on Dominion’s Facility Interconnection Requirements for load higher than 100MW. Install a 230kV 4-breaker ring, a circuit switcher on the high side of the transformer and perform any other necessary transmission work.

TO Alternatives Considered: No feasible alternatives

Estimated cost: \$ 8.5 M

Projected In-service Date: 9/15/2020





Need Number: DOM-2019-0003

Meeting Date: 4/11/2019

Process Stage: SOLUTION

Need Presented: 02/07/2019

Supplemental Project Driver: Customer Service

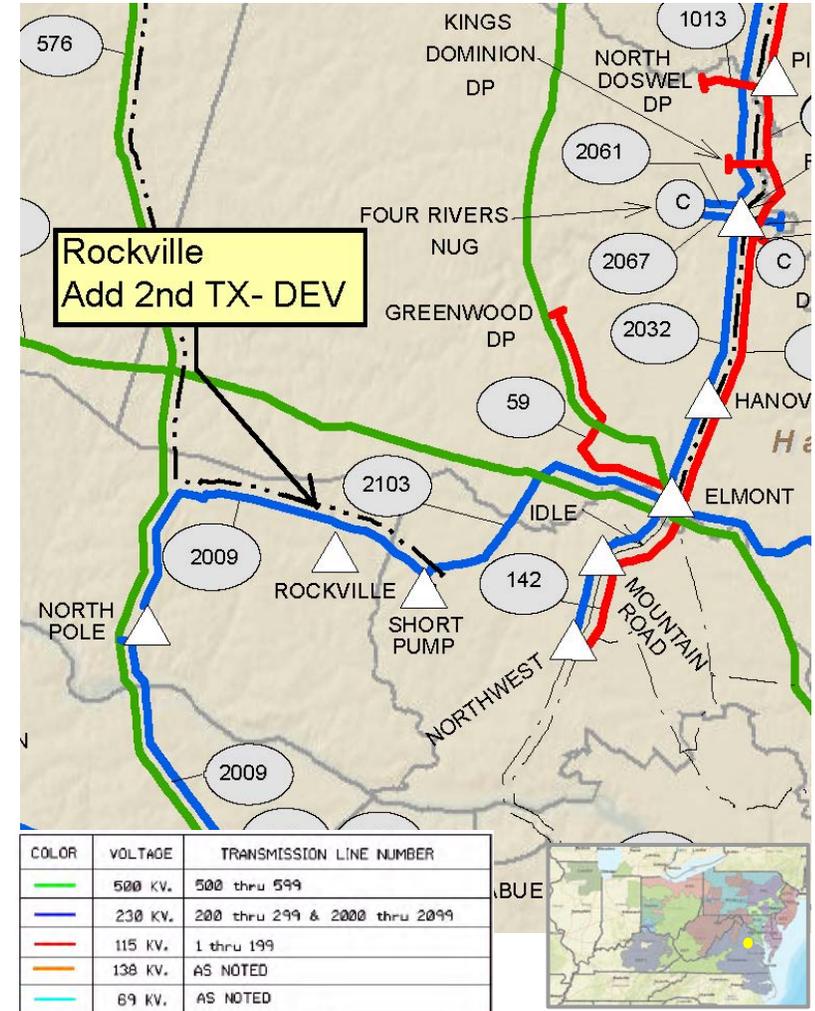
Problem Statement:

DEV Distribution has submitted a DP request to add a second distribution transformer at Rockville Substation in Goochland County. This transformer will support residential and commercial load growth in the area. Requested in-service date is 06/15/2020.

Initial In-Service Year (2020) Load	Projected 2024 Load
Summer: 47.6 MW	Summer: 54.9 MW

Specific Assumption References:

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





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2019-0003

Proposed Solution:

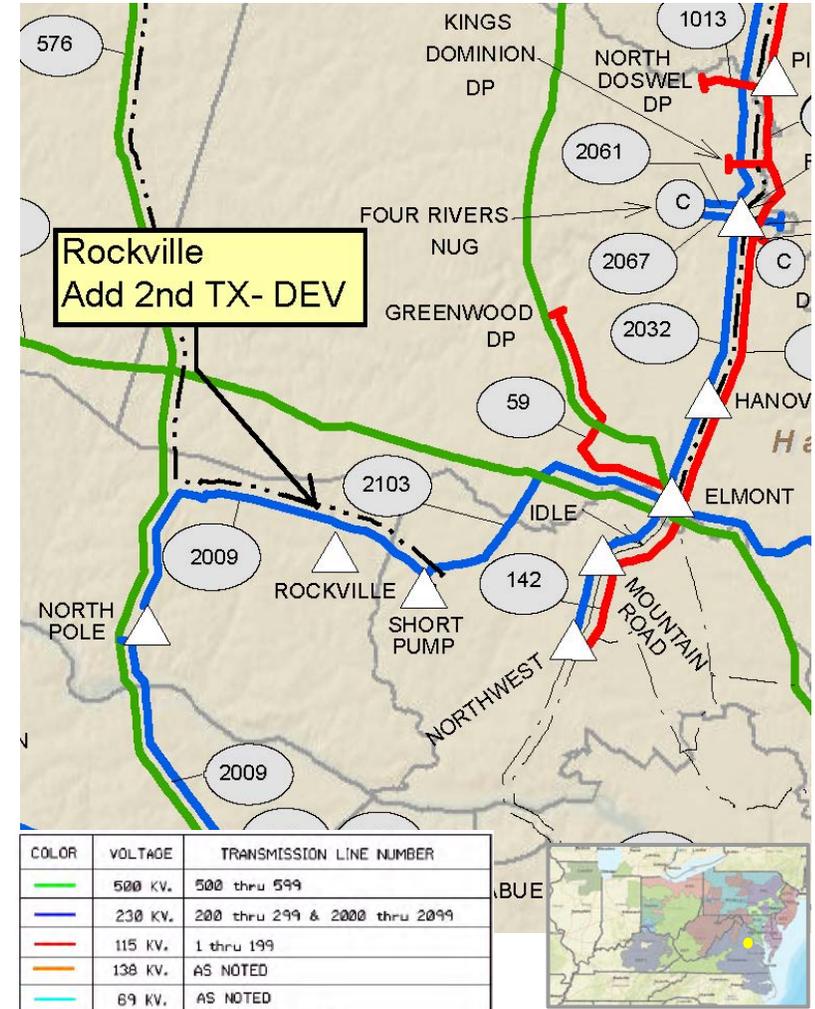
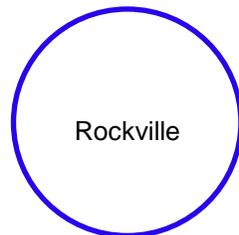
Install a 230kV circuit switcher, high side switch and perform necessary transmission work for the new transformer.

TO Alternatives Considered: No feasible alternatives.

Estimated Project Cost: \$750k

Project IS Date: 6/15/2020

Project Status: Conceptual





Dominion Transmission Zone: Supplemental Equipment Condition

Need Number: DOM-2019-0014

Proposed Solution:

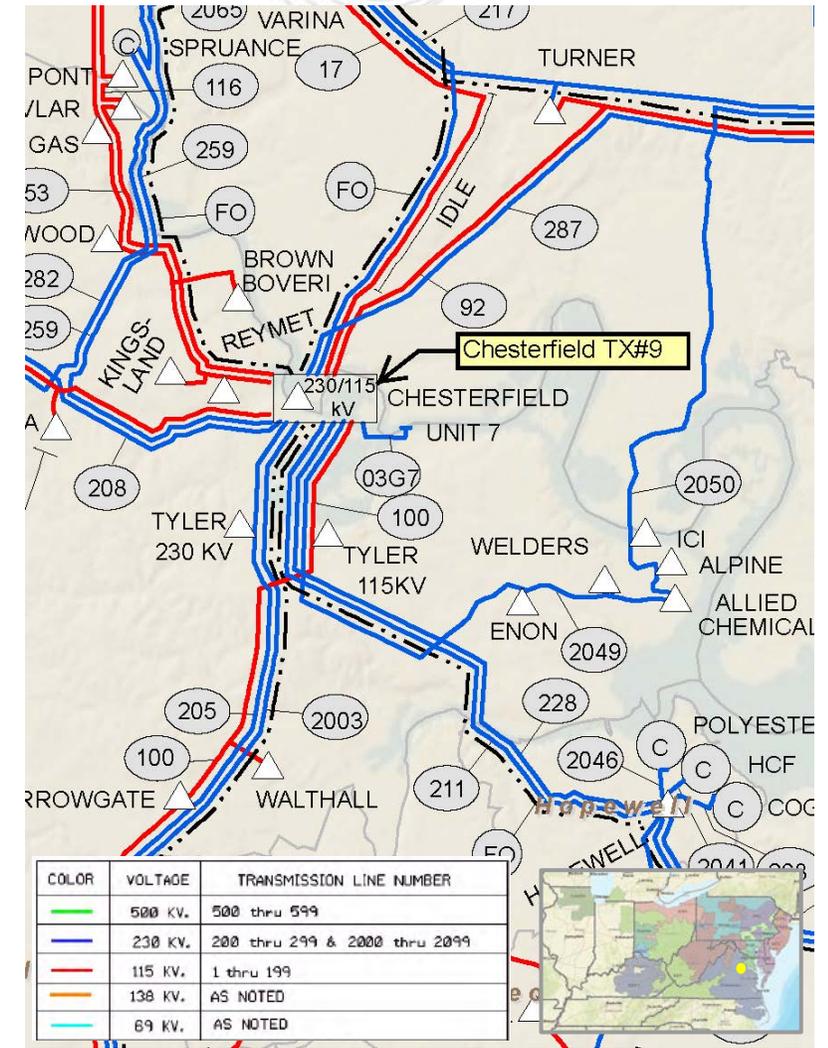
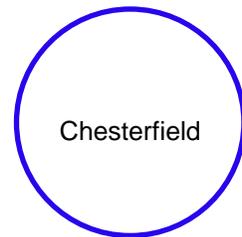
Replace the identified 224MVA 230/115kV transformer with a 224MVA 230/115kV transformer. Perform any associated transmission work.

TO Alternatives Considered: No feasible alternatives.

Estimated Project Cost: \$4.5 M

Project IS Date: 11/01/2019

Project Status: Conceptual





Dominion Transmission Zone: Supplemental Equipment Condition and Operational Flexibility

Need Number: DOM-2019-0016

Meeting Date: 04/11/2019

Process Stage: SOLUTION

Need Presented: 03/07/2019

Supplemental Project Driver: Equipment Condition and Operational Flexibility

Problem Statement

Equipment Condition:

- Peninsula Tx#4 is a 224MVA 230/115kV transformer. This transformer is being identified for replacement based on the results of Dominion's transformer health assessment (THA) process. Detailed drivers are:
 - Age
 - Reduced BIL ratings (1 level)
 - THA score less than 80

Operational Flexibility:

- Peninsula 230/115kV network Tx, a distribution 230/34.5kV Tx, 230kV Line #288 (Peninsula to Yorktown), and Line #2004 (Peninsula to Shellbank) all share a single 230kV tie breaker. Fault on Line #288 trip both transformers, and fault on either transformer trip Line #288 and interrupt network flow. Breaker Failure contingency result in loss of all the 230kV at Peninsula and the two 230kV lines.

Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk, and Operational Flexibility and Efficiency in Dominion's Planning Assumptions presented in December 2018





Dominion Transmission Zone: Supplemental Equipment Condition and Operational Flexibility

Need Number: DOM-2019-0016

Proposed Solution:

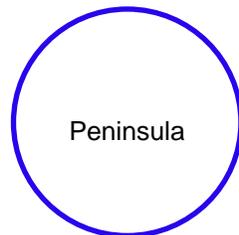
Replace the identified 224MVA 230/115kV transformer with a new 224MVA 230/115kV transformer. Build a 230kV 3-breaker ring bus to connect line #288, line #2044 and the 230/115kV transformer.

TO Alternatives Considered: No feasible alternatives.

Estimated Project Cost: \$16.1 M

Project IS Date: 04/30/2021

Project Status: Conceptual



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



V1 – 04/01/2019 – Original Slides Posted