



Reliability Analysis Update

Transmission Expansion Advisory
Committee
May 16, 2019

- The following definitions explain the basis for excluding flowgates and/or projects from the competitive planning process and designating projects to the incumbent Transmission Owner.
- Flowgates/projects excluded from competition will include the underlined language on the corresponding slide.
 - Immediate Need Exclusion: Due to the immediate need of the violation (3 years or less), the timing required for an RTEP proposal window is infeasible. As a result, the local Transmission Owner will be the Designated Entity. - Operating Agreement, Schedule 6 § 1.5.8(m)
 - Below 200kV Exclusion: Due to the lower voltage level of the identified violation(s), the driver(s) for this project are excluded from the competitive proposal window process. As a result, the local Transmission Owner will be the Designated Entity - Operating Agreement, Schedule 6 § 1.5.8(n)
 - FERC 715 (TO Criteria) Exclusion: Due to the violation need of this project resulting solely from FERC 715 TO Reliability Criteria, the driver(s) for this project are excluded from the competitive proposal window process. As a result, the local Transmission Owner will be the Designated Entity - Operating Agreement, Schedule 6 § 1.5.8(o)
 - Substation Equipment Exclusion: Due to identification of the limiting element(s) as substation equipment, the driver(s) for this project are excluded from the competitive proposal window process. As a result, the local Transmission Owner will be the Designated Entity - Operating Agreement, Schedule 6 § 1.5.8(p)



2019 RTEP Analysis Update

- Continue to work on cleaning up case
- Delays in initial analysis expected to continue – anticipate posting late May
- Targeting to have window open by July 1

Dominion End of Life Criteria



Dominion Transmission Zone: Baseline Bull Run 230kV Breaker “200T244” and “200T295” Replacements

Baseline Reliability: TO Criteria Violation (FERC 715 (TO Criteria) Exclusion)

*This project inherits the exclusion of its parent project.

Problem Statement: Short Circuit

- The Bull Run 230kV breakers “200T244” and “200T295” are overdutied.

Significant Driver:

- b3110:** Rebuild Line #2008 between Loudoun to Dulles Junction. Retire Line #156 from Loudoun to Bull Run. Cut and loop Line #265 (Clifton – Sully) into Bull Run Substation. Add three (3) 230kV breakers at Bull Run to accommodate the new line and upgrade the substation. (Dominion “End of Life Criteria”)

Recommended Solution:

- Replace the Bull Run 230kV breakers “200T244” and “200T295” with 63kA breakers (**b3110.2**)

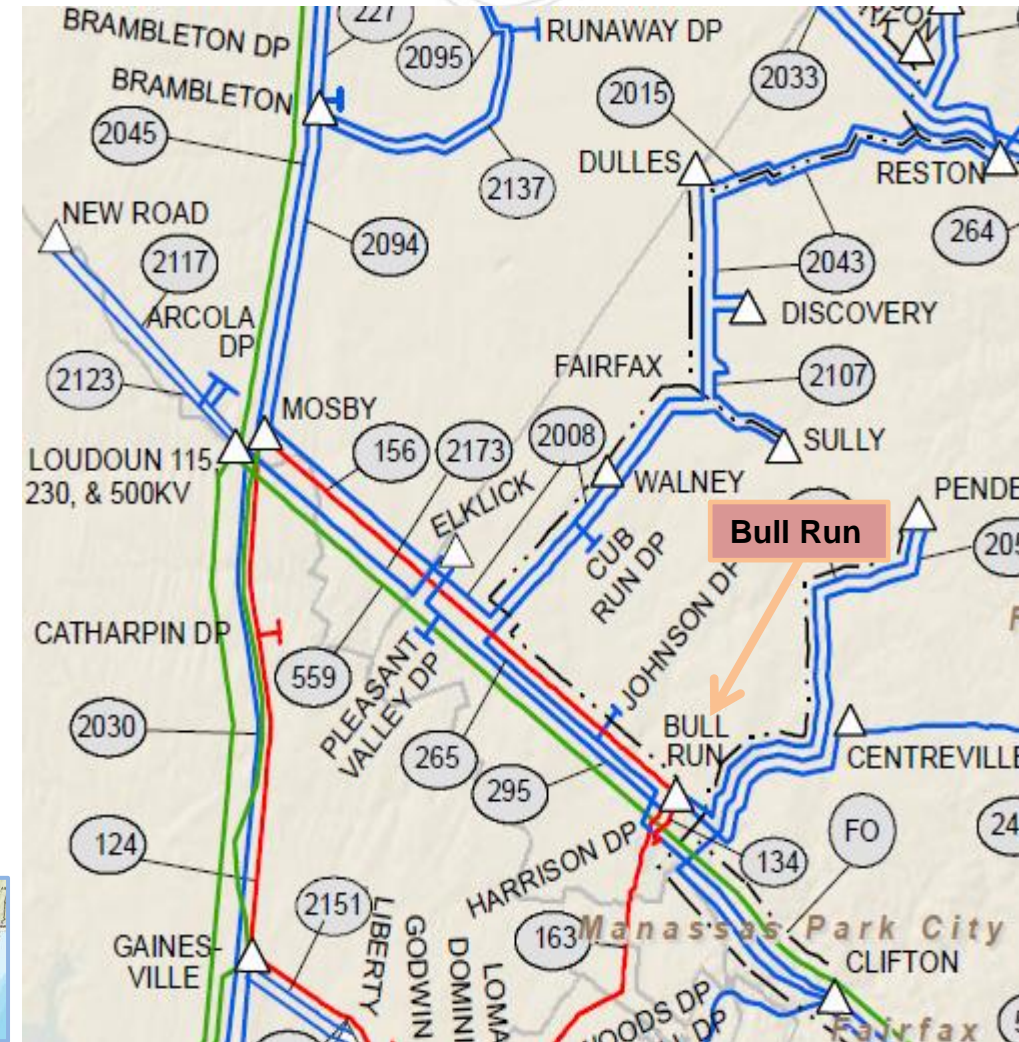
Estimated Project Cost: \$0.54 M

Required In-service Date: Immediate Need

Projected In-service Date: 12/31/2023

Project Status: Conceptual

COLOR	VOLTAGE	TRANSMISSION LINE NUMBER
Green	500 KV.	500 thru 599
Blue	230 KV.	200 thru 299 & 2000 thru 2099
Red	115 KV.	1 thru 199
Orange	138 KV.	AS NOTED
Cyan	69 KV.	AS NOTED



B2970 Project Update

B2970 Project Update:

PJM identified the B2970 to resolve violations identified in the 2017 RTEP study year and was presented at the 11/2/2017 TEAC.

Immediate Need Exclusion

Recommended Solution :

- Install two new 230 kV positions at Ringgold for 230/138 kV transformers. **(B2970.1)**
- Install new 230 kV position for Ringgold – Catoctin 230 kV line. **(B2970.2)**
- Install one new 230 kV breaker at Catoctin substation. **(B2970.3)**
- Install new 230 / 138 kV transformer at Catoctin substation.
- Convert Ringgold-Catoctin 138 kV Line to 230 kV operation. **(B2970.4)**

Estimated Project Cost: \$ 13.33 M

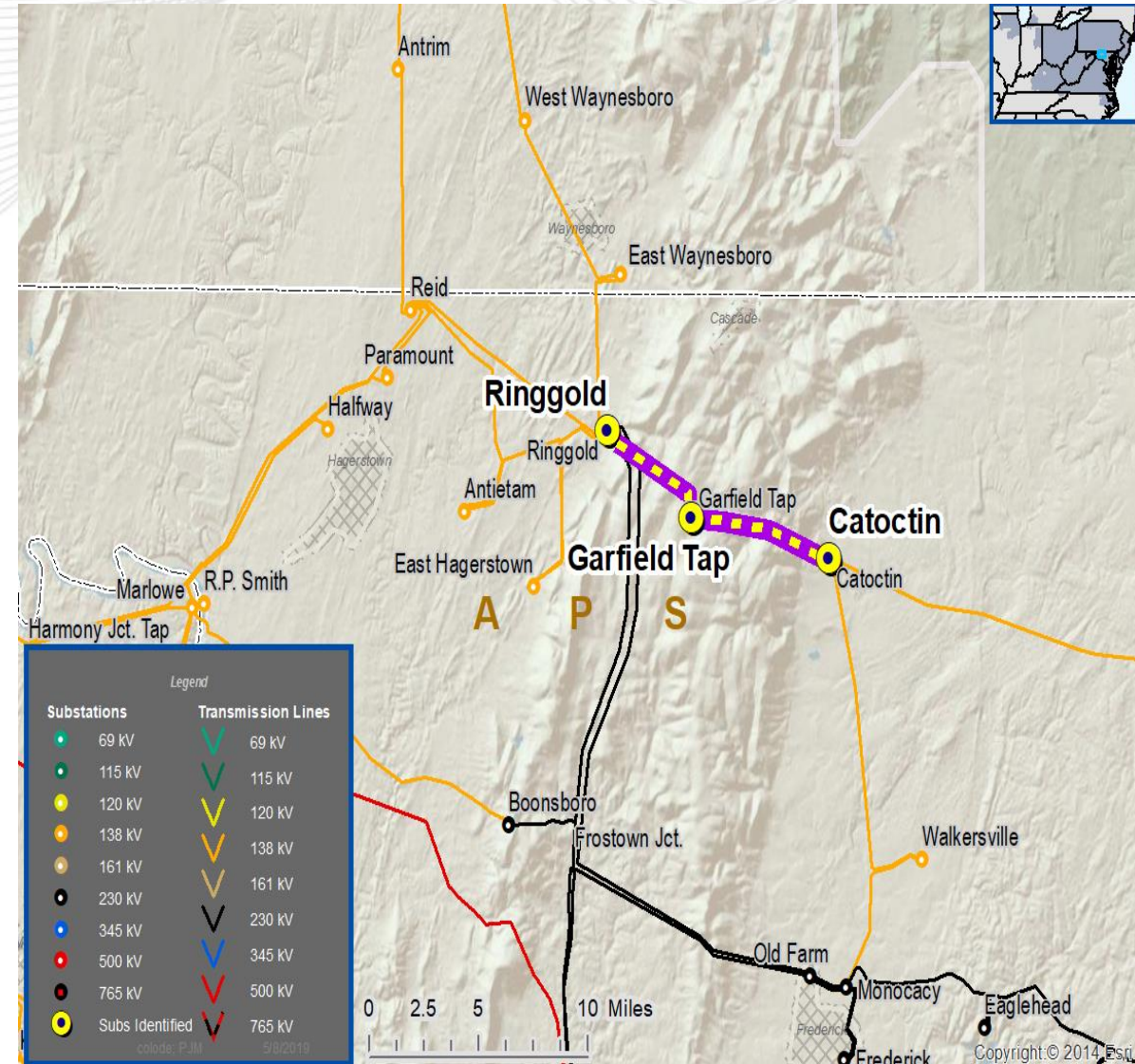
Required IS date: 6/1/2020

• There is a 138/12.5 kV station (Garfield) tapped on the Ring Gold – Catoctin 138 kV circuit that should be converted to 230 kV as part of the B2970 project, but was missed from the original scope and cost estimate. Update the scope of the B2970 to reflect the additional work needed to convert the Garfield 138/12.5 kV to 230/12.5 kV.

• **B2970.5** → Convert Garfield 138/12.5 kV substation to 230/12.5 kV.

Estimated Project Cost: \$ 2.2 M

Total Estimated Project Cost: \$15.53 M



Short Circuit

Baseline Reliability: Immediate Need Exclusion

Problem Statement: Short Circuit

- The Remington CT 230kV breaker "2114T2155" is overdutied.

Significant Driver:

- b2686.1:** Build a 230 kV line from Remington Substation to Gordonsville Substation utilizing existing ROW

Recommended Solution:

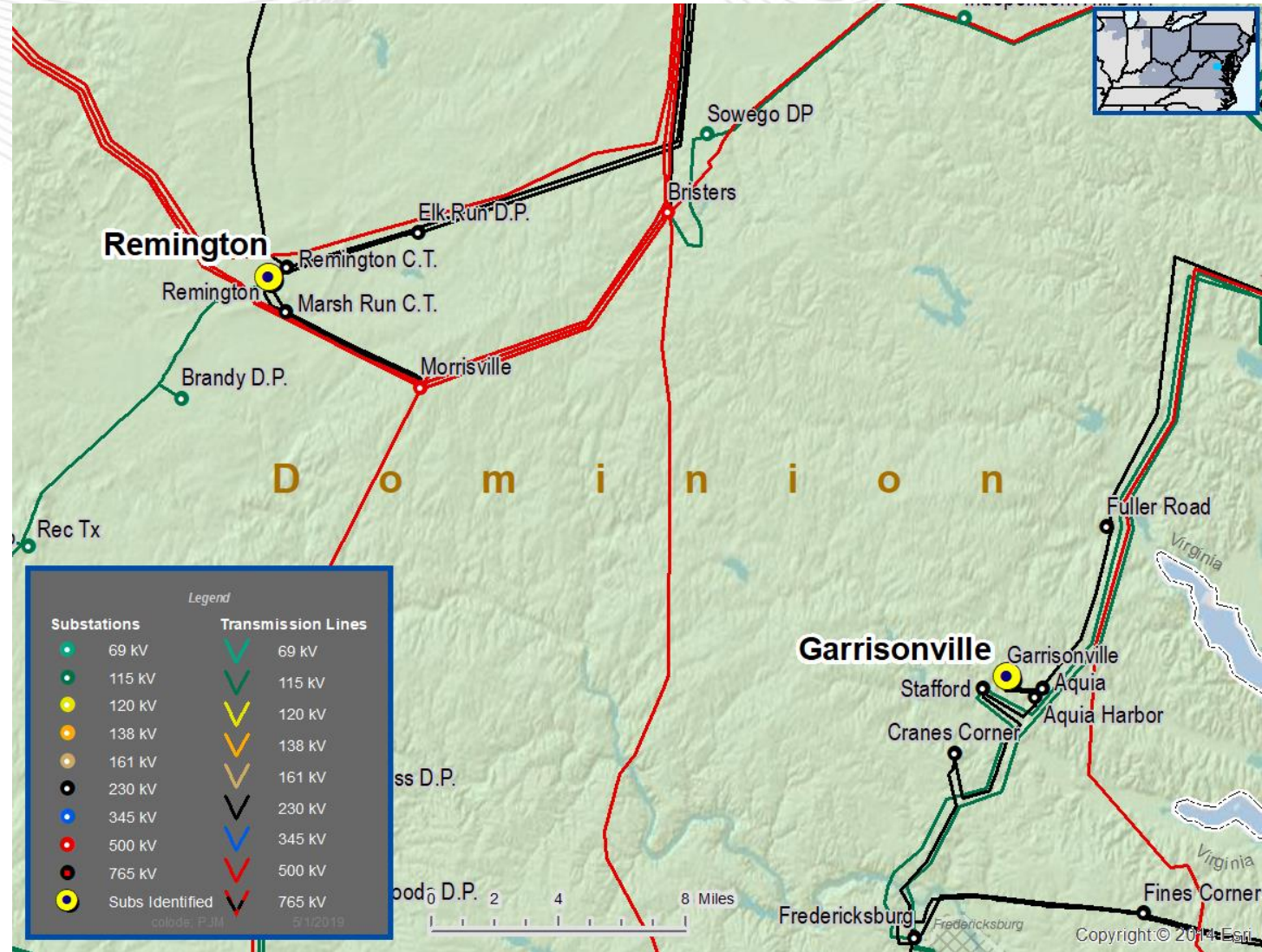
- Replace the Remington CT 230kV breaker "2114T2155" with a 63kA breaker (**b2686.4**)

Estimated Project Cost: \$0.30 M

Required In-service Date: 6/1/2019

Projected In-service Date: 6/1/2020

Project Status: Conceptual





Dominion Transmission Zone: Baseline NIVO 230kV Breaker "2116T2130" Replacement

Existing b2962.2 Date Change
Date Project Last Presented: 06/07/2018

Problem Statement: Short Circuit
• The NIVO 230kV breaker "2116T2130" is overdutied.

Significant Driver:
• **b2962:** Split Line #227 (Brambleton – Beaumeade 230 kV) and terminate into existing Belmont substation

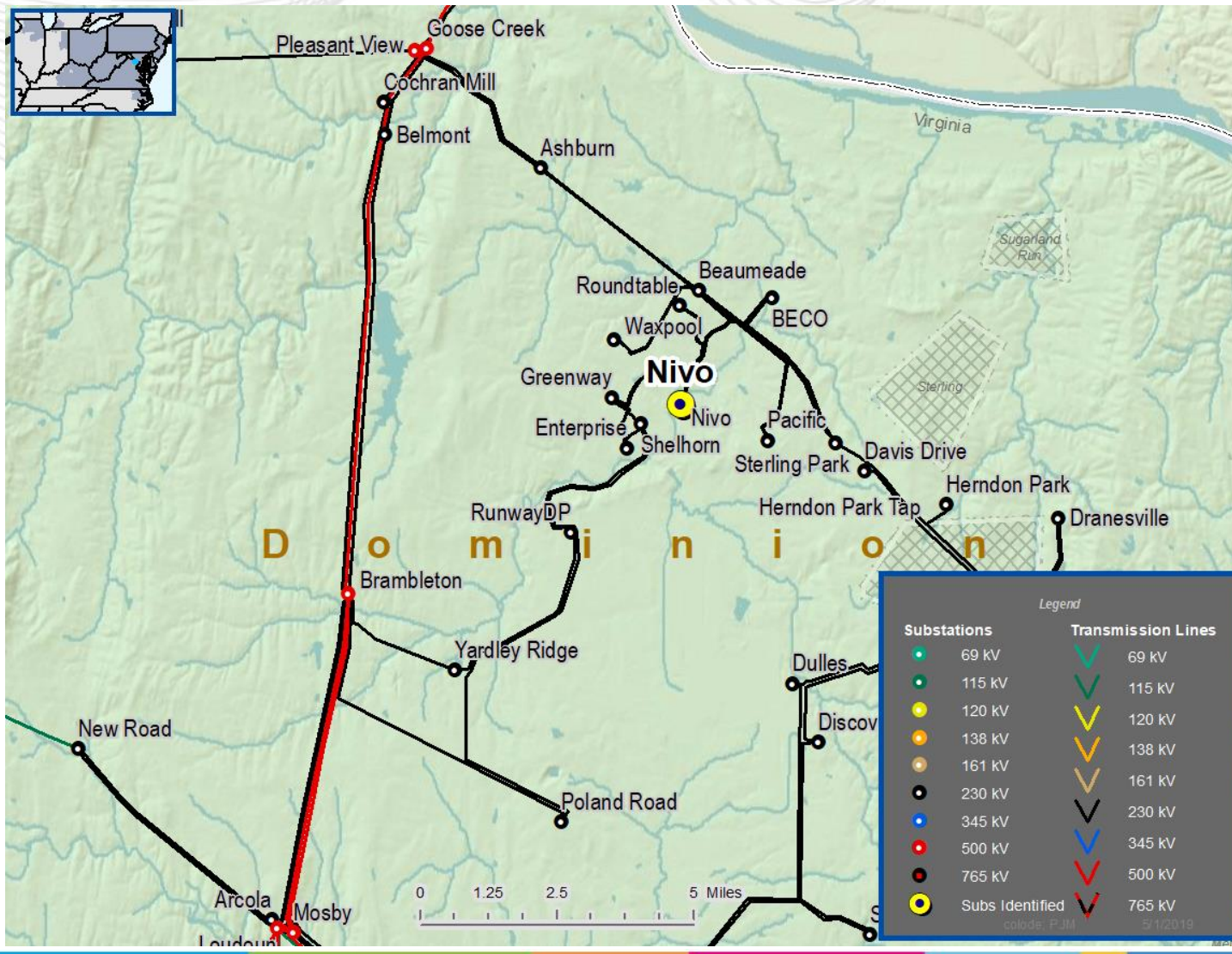
Recommended Solution:
• Replace the NIVO 230kV breaker "2116T2130" with 63kA breaker (**b2962.2**)

Estimated Project Cost: \$0.30 M

Previous Required In-service Date: 6/1/2022
Revised In-service Date: 6/1/2021

Projected In-service Date: 6/14/2019

Project Status: Under Construction



Questions?



2019

- TEAC meetings are the following Thursdays in 2019
- **1/10, 2/7, 3/7, 4/11, 5/16, 6/13, 7/11, 8/8, 9/12, 10/17, 11/14, 12/12.**

- V1 – 05/09/2019 – Original slides posted