

Line #557 Elmont – Chickahominy 500 kV Line Rebuild

General Information

Proposing entity name	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Company proposal ID	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
PJM Proposal ID	124
Project title	Line #557 Elmont – Chickahominy 500 kV Line Rebuild
Project description	Rebuild approximately 27.7-miles of 500 kV transmission line from Elmont to Chickahominy with current 500 kV standards construction practices. The line was constructed in 1971 with ACAR conductor and 5-series Corten towers that need to be rebuilt to current standards based on the Company's End of Life Criteria.
Email	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Project in-service date	06/2026
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Project Components

1. Elmont Substation
2. Line 557 (Elmont - Chickahominy)

Substation Upgrade Component

Component title	Elmont Substation
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Elmont
Substation zone	366
Substation upgrade scope	Purchase and Install Substation Material at Elmont Substation: 1- One (1) 500 kV, 5000 Amps, 50 kA Dead Tank Circuit Breaker 2- Three (3) 500 kV, 5000 Amps, Double End Break Switches 3- The new 6 IN, Schedule 80 bus work to support the new ratings 4-Three (3), 396 kV MO, 318 kV MCOV, Station Class Arresters 5-Line 557 riser conductors, spacers, and connectors on both ends of the risers 6- Install any conductor, connectors, conduits, control cables, foundations, structures, and grounding material as per Dominion Substation Engineering Standards 7- Remove- Existing Circuit Breaker, Switches, CCVT's, Wave Traps, Bus work and accessories Purchase and Install Relay Material at Elmont Substation: 1-One (1), 4510 - SEL-2411 Breaker Annunciator 2-One (1), 1510 – 28" Dual SEL-351 Transmission Breaker w/ Reclosing Panel 3-One (1), Breaker Condition Monitor 4-Two (2), 4526_D – C.B. w/ BCM Fiber Optic M.U. Box 5-One (1), Panel Retirement

Transformer Information

None	
New equipment description	1- One (1) 500 kV, 5000 Amps, 50 kA Dead Tank Circuit Breaker 2- Three (3) 500 kV, 5000 Amps, Double End Break Switches 3- 6 IN, Schedule 80 bus work to support the new ratings 4- Three (3), 396 kV MO, 318 kV MCOV, Station Class Arresters
Substation assumptions	The Chickahominy terminal end will be upgraded to 5000A under b3213.
Real-estate description	The substation will not be expanded for this project.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Component Cost Details - In Current Year \$

Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	\$2,647,165.50
Component cost (in-service year)	\$2,835,114.00

Transmission Line Upgrade Component

Component title	Line 557 (Elmont - Chickahominy)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line#557 from Elmont to Chickahominy
Point A	Elmont
Point B	Chickahominy
Point C	N/A

Terrain description

Starting at Elmont Substation located south of the Town of Ashland, the terrain of the existing right-of-way (ROW) is relatively flat and traverses forested/open space (agricultural). The ROW aerially crosses the Chickahominy River twice, which also serves as the boundary of Hanover and Henrico Counties. The ROW parallels a heavy commercialized area, and aerially crosses Interstate 95. Once the ROW turns south, the terrain generally begins to decrease in slope, becomes very wet and is characterized by swamp/marshland. As the ROW nears the Atlee area, it aerially crosses Interstate 295 and continues to decrease in slope throughout the swamp/marshland. The adjacent areas to the ROW remain forested/vegetated in nature. As the ROW approaches the Chickahominy area, the terrain begins to dry up and goes through some acres of agricultural land. As the ROW continues southeast, the terrain continues to decrease and traverse many acres of swamp/marshland and aerially crosses Route 360 south of Mechanicsville Substation. The ROW aerially crosses the Chickahominy River once again and traverses a large wetland tract of Richmond National Battlefield Park. Residential and agricultural properties begin to comprise the ROW and another aerial crossing of Interstate 95 occurs. As the ROW extends further east to more rural areas, the terrain dries and levels out and is mostly comprised of open space. There is yet another aerial crossing of the Chickahominy River and a continuous decrease in slope. Heading southeast, there is an aerial crossing of Interstate 64, as well as Route 60. The terrain remains consistent, traversing through vast swamp/marshland areas and heavily forested/vegetated areas. Some gently rolling terrain and subtle slopes characterize the southern section of this line as it approaches Chickahominy Substation. Civil: Interstate 95, Interstate 295, Route 360, Richmond National Battlefield Park, Interstate 64, Route 60 Waterbody: Chickahominy River (3)

Existing Line Physical Characteristics

Operating voltage

500 KV

Conductor size and type

2-2500 ACAR

Hardware plan description

This project will include the wreck and rebuild of approximately 27.72 miles of a single circuit 500kV transmission line for End of Line Rebuild. Existing hardware will not be reused.

Tower line characteristics

The existing line consists of 5-series weathering steel towers built in the 1970's that need to be rebuilt to current standards based on the Company's End of Life Criteria.. The existing line will be rebuilt using 93J series galvanized steel towers. The line is located between Chickahominy Substation in Charles City, VA and Elmont Substation in Glen Allen, VA.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings

Summer (MVA)	4330.000000	4330.000000
Winter (MVA)	4980.000000	5023.000000
Conductor size and type	3-1351.5 ACSR 45/7 110 degrees C MOT	
Shield wire size and type	AFL AC-105/619 (48 fibers)	
Rebuild line length	27.72	
Rebuild portion description	<p>INSTALLATION 1. Install one hundred and seventeen (117) Tangent 500kV 93JSST towers with foundations. 2. Install six (6) Light Angle 500kV 93JLA towers with foundations. 3. Install two (2) Medium Angle 500kV 93JMA towers with foundations. 4. Install eight (8) Heavy Angle 500kV 93JHA dead-end towers with foundations. 5. Install three (3) conductor dead end assemblies and two (2) fiber dead end assemblies, on the existing backbone (Str 557/226A) located within Chickahominy Substation. 6. Install three (3) conductor dead end assemblies and two (2) fiber dead end assemblies, on the existing backbone (Str 557/360) located within Elmont Substation. 7. Install approximately 27.72 miles of single circuit 3-phase triple bundle 1351 ACSR "Dipper" conductor between existing Chickahominy Backbone (Str 557/226A) and existing Elmont Backbone (Str 557/360). 8. Install approximately 27.72 miles of dual 10100 DNO fiber optic shield wire between existing Chickahominy Backbone (Str 557/226A) and existing Elmont Backbone (Str 557/360). Estimate includes the cost for 8 isolated splice points and 10 grounded splice points. REMOVALS: 1. Remove eighty-six (86) 5LT towers. Demolish foundations 18" below grade. 2. Remove thirty-three (33) 5HT towers. Demolish foundations 18" below grade. 3. Remove three (3) 5LA towers. Demolish foundations 18" below grade. 4. Remove five (5) 5MA towers. Demolish foundations 18" below grade. 5. Remove five (5) 5HA towers. Demolish foundations 18" below grade. 6. Remove two (2) 5DE towers. Demolish foundations 18" below grade.</p>	
Right of way	Work will be done within existing right of way. We will not expand nor add to the right of way.	
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
Component Cost Details - In Current Year \$		
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	

Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	\$55,508,010.00
Component cost (in-service year)	\$59,449,080.00

Congestion Drivers

None

Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
DOM-O2	314903	8CHCKAHM	314908	8ELMONT	0	500	345	End of Life	Included

New Flowgates

The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Financial Information

Capital spend start date	01/2022
Construction start date	01/2025
Project Duration (In Months)	53

Additional Comments

Contact info: for Technical: ETAreaPlanning@dominionenergy.com; for Fees/Financial: Dane.Jonas@dominionenergy.com