

Relieve 300 MW Load Drop on Line#219 and Line#2066 (winter N-1-1, Tower, and FB)

General Information

Proposing entity name	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	860
Project title	Relieve 300 MW Load Drop on Line#219 and Line#2066 (winter N-1-1, Tower, and FB)
Project description	1) cut Line #2066 at Trabue junction; 2) reconductor idle Line #242 (radial from Midlothian to Trabue junction) to allow a minimum summer rating of 1047 MVA and connect to the section of Line #2066 between Trabue junction and Winterpock; re-number Line #242 structures to #2066; 3) use the section of idle Line #153, between Midlothian and Trabue junction to connect to the section of (former) Line #2066 between Trabue junction and Trabue to create new Midlothian-Trabue lines with new line numbers #2218 and #2219; 4) create new line terminations at Midlothian for the new Midlothian-Trabue lines. The reconductor project will cross several small streams and 8 roads including Virginia State Route 288. The project will require the installation of a 230kV backbone inside Midlothian substation and a 230kV double circuit steel pole at Trabue Junction. See the Additional Comments of the Transmission Line Upgrade Component section for overall ratings.
Project in-service date	05/2025
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. Midlothian Substation 230kV Line Termination and Related Work
2. Trabue Substation Switch Installation and Source Reconfiguration
3. Winterpock Substation Relay Resets

4. Reconfigure Lines #2066, #242(idle), #153(idle); Create new Lines #2218 ...

Substation Upgrade Component

Component title	Midlothian Substation 230kV Line Termination and Related Work
Substation name	Midlothian Substation
Substation zone	Dominion
Substation upgrade scope	1. Re-name/re-number existing Lines #2066 and #242 to Lines #2218 and #2066. 2. Install all associated equipment to support new Line #2219. 3. Remove wave trap on Line #2218 (existing Line #2066). 4. Install new wave trap on relocated Line #2066 (existing Line #242). 5. Install two (2) 230kV, 3000A, 50kA, SF6 Breakers; four (4) 230kV, 3000A center break horizontal mounted switches; three (3) 230kV, relay accuracy CCVTs; three (3) 180 kV, 144 kV MCOV lightning arresters. 6. Install steel structures, tubular bus, conductor, connectors, conduit, control cable, foundations, and grounding material as per engineering standards. 7. Install new Relay material and apply relay settings. 8. Install new 230kV backbone structure.

Transformer Information

None	
New equipment description	1. Two (2) 230kV, 3000A, 50kA, SF6 Breakers. 2. Four (4) 230kV 3000A center break horizontal mounted switches. 3. Three (3) 230kV, relay accuracy CCVTs. 4. Three (3) 180 kV, 144 kV MCOV lightning arresters. 5. One (1) 230 kV, 3000 A wave trap for new line 2066. 6. Install steel structures, tubular bus, conductor, connectors, conduit, control cable, foundations and grounding material as per engineering standards 7. Relay Material
Substation assumptions	Construction will be within existing fence line. All substation standards and air-insulated clearances are applicable. No special accommodations will be needed.
Real-estate description	The substation will not be expanded.
Construction responsibility	The redacted information is proprietary to the Company, therefore it is privileged and confidential.
Additional 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	\$2,270,820.00
Component cost (in-service year)	\$2,432,048.00

Substation Upgrade Component

Component title	Trabue Substation Switch Installation and Source Reconfiguration
Substation name	Trabue Substation
Substation zone	Dominion
Substation upgrade scope	1. Re-name/re-number Line #2066 to Lines #2218 and #2219. 2. Purchase and install one (1) 3000 Amp end break switch with light duty bottles. 3. Install conductor, connectors, conduit, control cable, foundations, and grounding material as per engineering standards.

Transformer Information

None	
New equipment description	1. One (1) 3000A end break switch with light duty bottles. 2. Conductor, connectors, conduit, control cable, foundations and grounding material as per engineering standards.
Substation assumptions	Construction will be within existing fence line. All substation standards and air-insulated clearances are applicable. No special accommodations will be needed.
Real-estate description	N/A
Construction responsibility	The redacted information is proprietary to the Company, therefore it is privileged and confidential.
Additional 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	\$195,639.00
Component cost (in-service year)	\$209,529.00

Substation Upgrade Component

Component title	Winterpock Substation Relay Resets
Substation name	Winterpock Substation
Substation zone	Dominion
Substation upgrade scope	Perform relay resets.

Transformer Information

None	
New equipment description	No new equipment needed.
Substation assumptions	N/A
Real-estate description	N/A
Construction responsibility	The redacted information is proprietary to the Company, therefore it is privileged and confidential.

Additional 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	\$14,346.00
Component cost (in-service year)	\$15,364.00

Transmission Line Upgrade Component

Component title	Reconfigure Lines #2066, #242(idle), #153(idle); Create new Lines #2218 and #2219
Impacted transmission line	Line #2066; Line #242(idle); Line #153(idle)
Point A	Midlothian Substation (all lines)
Point B	Winterpock Sub (Line #2066); Trabue Sub (Line #2218); Trabue Sub (Line #2219)
Point C	
Terrain description	The terrain is predominately forested/vegetated existing right-of-way consisting of moderate slopes. The reconductor project will cross several small streams and 8 roads including Virginia State Route 288.

Existing Line Physical Characteristics

Operating voltage	230 kV
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Conductor size and type	Line #2066 (2-636 ACSR, 2-721 ACAR); Line #242 (2-721 ACAR); Line #153 (2-636 ACSR, 1-636 ACSR, 1-4/0 Copper, 1-4/0 ACSR)
Hardware plan description	The 2-721 ACAR sections that will be reconducted for Line #2066 and Line #242 will have new insulator hardware assemblies installed. Existing 2-636 ACSR sections of Lines #2066 and #153 will reuse the insulator hardware assemblies which were installed in 1991 and are in good working condition. No OPGW will be installed.
Tower line characteristics	Structures for Line #2066 and Line #153, located between Midlothian to Trabue Junction and Trabue Junction to Trabue, were installed in 1991 and are in good working condition. The structures for Line #242 and Line #2066, located between Midlothian and Winterpock Junction, were installed in 1978 and are in good working condition. No structures will need to be replaced as part of this project.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	797.000000	797.000000
Winter (MVA)	916.000000	924.000000
Conductor size and type	2-636 ACSR (Lines #2066, 2218, and 2219)	
Shield wire size and type	N/A	
Rebuild line length	Reconductor Length - Line #2066 approx. 4.3 miles, New Conductor Length -Line #2218 approx. 0.18 miles and Line #2219 approx. 0.08 miles	
Rebuild portion description	Due to a limitation on the number of characters allowed in this field of the Competitive Planner Tool, please see the attached document named "Proposal F - Transmission Line Work - Scope.pdf" in the "Proposal F - Project Analysis Attachments.zip" file in the General Information section for a detailed description of the Reconductor and Reconfiguration scope.	

Right of way
 Dominion Electric Transmission Rights-of-Way staff reviewed the Company's land rights along the existing Midlothian to Winterpock corridor and from Trabue to Winterpock. It was determined that no additional rights from the Company are needed to accommodate the rebuild and modification of Line #2066 and Line #242. In addition, the Company's existing land rights do not impose restrictions that will prevent the line from being rebuilt according to the proposed design.

Construction responsibility
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Additional comments
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Component Cost Details - In Current Year \$

Engineering & design
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Permitting / routing / siting
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ROW / land acquisition
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Materials & equipment
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Construction & commissioning
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Construction management
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Overheads & miscellaneous costs
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Contingency
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Total component cost \$3,737,860.00

Component cost (in-service year) \$4,003,249.00

Congestion Drivers

None

Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
N2-WLD5	313740	6GENITO	314343	6TRABUE	1	230	345	N-1-1 Load Drop (winter)

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
N1-WLD-1	314306	6HULL219	314338	6SOUWEST	1	230	345	N-1-1 Load Drop (winter)
N1-WLD-2	314306	6HULL220	314338	6SOUWEST	1	230	345	N-1-1 Load Drop (winter)

New Flowgates

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

Financial Information

Capital spend start date 01/2024

Construction start date 01/2025

Project Duration (In Months) 16

Additional comments

None.