Build a new 230 kV substation at Hollymeade Tap, rebuild 8.72 miles of line #2054 and 7.1 miles of line #2135

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	327
Project title	Build a new 230 kV substation at Hollymeade Tap, rebuild 8.72 miles of line #2054 and 7.1 miles of line #2135
Project description	Build a new 230kV substation at Hollymeade Tap with a 4-breaker ring bus. Split lines 2054 and 2135 and terminate all 4 lines into the new ring bus. Rebuild 8.72-mile line #2054 section from Charlottesville to New Station, from 2-477 ACSR 90°C to 2-636 ASCR 24/7 MOT – 150°C (rating 1046 MVA). Rebuild 7.1-mile (2.83+4.27=7.1 miles) line #2135 section from New Station to Gordonsville, from 2-477 ACSR 90°C to 2-636 ASCR 24/7 MOT – 150°C (1046 MVA).
Project in-service date	04/2025
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. Line 2054 Charlottesville to Hollymeade Tap Rebuild
2. Line 2135 Gordonsville to Hollymeade Tap Rebuild
3. Cash’s Corner Substation Terminal Equipment
4. Charlottesville Substation Terminal Equipment
5. Gordonsville Substation Terminal Equipment

6. Hollymeade Substation - Relay Resets and Documentation

7. New 230kV Switching Station

Transmission Line Upgrade Component

Component title	Line 2054 Charlottesville to Hollymeade Tap Rebuild
Impacted transmission line	2054
Point A	Charlottesville Substation
Point B	Hollymeade Tap, Line # 2054 structure # 340A
Point C	
Terrain description	Starting at Charlottesville Substation located on the eastern edge of the City of Charlottesville, the terrain of this existing right-of-way slopes down to the Rivanna River and rises back up as it crosses thru Darden-Towe Memorial Park. The terrain of the right-of-way then has some moderate slopes as it passes by a few established neighborhoods with trees buffering many of the homes. After leaving the suburban areas just outside of Charlottesville, the terrain starts out as predominately forested/vegetated areas outside of the existing right-of-way consisting of moderate to steep slopes. As the right-of-way extends further east to more rural areas, the terrain faces a mix of some steep hills along with some flatter lands traversing through many acres of open space (residential and agricultural) and a few wooded areas approaching the Hollymead Tap.

Existing Line Physical Characteristics

Operating voltage	230kV
Conductor size and type	2-477 ACSR MOT - 90°C
Hardware plan description	Existing line hardware will not be reused.
Tower line characteristics	The existing line contains seventy-seven (77) direct embed wood and weathering steel poles. These structures will not be reused as they cannot accommodate the necessary ground clearance due to the conductor’s higher ampacity.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000

	Normal ratings	Emergency ratings
Summer (MVA)	1046.000000	1046.000000
Winter (MVA)	1160.000000	1160.000000
Conductor size and type	2-636 ASCR 24/7 MOT – 150 degrees Celsius	
Shield wire size and type	DNO-11410 Optical Ground Wire (OPGW)	
Rebuild line length	8.72 miles	
Rebuild portion description	Proposal 5A rebuilds the first half of Line # 2054 that goes from Charlottesville substation to Hollymeade substation, the second half of the 2135 Line from Hollymeade substation to Gordonsville substation, and constructs a new switching station at the Hollymeade tap where these lines join. By installing 8.72 miles of 2-636 ACSR on the 2054 Line and 7.1 miles 2-636 ACSR on the 2135 Line, both with the maximum operating temperature of 150° C, both 230 KV lines will have a rating of 1046 MVA. The new station will split both 230KV lines and create two new line numbers.	
Right of way	No new or additional right of way is required to complete this project.	
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	$13,563,917.00
Component cost (in-service year)	$14,526,954.00

Transmission Line Upgrade Component

Component title	Line 2135 Gordonsville to Hollymeade Tap Rebuild
Impacted transmission line	2135
Point A	Gordonsville Substation
Point B	Line # 2135, structure 340A
Point C	N/A
Terrain description	From the Hollymeade Tap to Gordonsville Substation, the terrain is very similar to the areas west of the Tap point; however, this stretch is characterized by an increased number of open farms, with more gently rolling terrain, with some scattered wooded areas. While there are some moderate hills here, the land appears to be generally flatter with fewer obstructions for access.

Existing Line Physical Characteristics

Operating voltage	230kV
Conductor size and type	2-477 ACSR MOT - 90° C
Hardware plan description	Existing line hardware will not be reused.
Tower line characteristics	The existing line contains fifty-eight (58) direct embed wood and weathering steel poles. These structures will not be reused as they cannot accommodate the necessary ground clearance due to the conductor’s higher ampacity.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	1046.000000	1046.000000

Winter (MVA)	1160.000000	1160.000000
Conductor size and type	2-636 ASCR 24/7 MOT – 150° C	
Shield wire size and type	DNO-11410 Optical Ground Wire (OPGW)	
Rebuild line length	7.1 miles	
Rebuild portion description	Proposal 5A rebuilds the first half of Line # 2054 that goes from Charlottesville substation to Hollymeade substation, the second half of the 2135 Line from Hollymeade substation to Gordonsville substation, and constructs a new switching station at the Hollymeade tap where these lines join. By installing 8.72 miles of 2-636 ACSR on the 2054 Line and 7.1 miles 2-636 ACSR on the 2135 Line, both with the maximum operating temperature of 150° C, both 230 KV lines will have a rating of 1046 MVA. The new station will split both 230KV lines and create two new line numbers. This project is located primarily in Albemarle County, Virginia with the last three spans of the 2054 Line in the City of Charlottesville, Virginia.	
Right of way	No new or additional right of way is required to complete this project.	
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	$12,735,978.00

Component cost (in-service year)	$13,640,232.00

Substation Upgrade Component

Component title	Cash’s Corner Substation Terminal Equipment
Substation name	Cash’s Corner
Substation zone	193
Substation upgrade scope	Relocate existing TL switches 213576 and 213579 outside of the substation on self-supporting structure and install riser conductors to match the new line rating. This project also provides for the drawing work, relay resets, and field support necessary to change the Line 2135 destination at Cash’s Corner Substation.

Transformer Information

None

New equipment description	Purchase and install: 1. Install riser conductors. 2. Connectors on both ends of the risers along with spacers. 3. Miscellaneous conductors, connectors, insulators, and grounding materials as per engineering standards.
Substation assumptions	No additional relay material is needed at this site.
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.
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	$133,990.00
Component cost (in-service year)	$143,503.00

Substation Upgrade Component

Component title	Charlottesville Substation Terminal Equipment
Substation name	Charlottesville
Substation zone	193
Substation upgrade scope	This project replaces one 2000 amp switch with a 3000 amp switch and installs riser conductors to match the new line rating. This project also provides for the drawing work, relay resets, and field support necessary to change the Line 2054 destination at Charlottesville Substation.

Transformer Information

None

New equipment description	Purchase and install: 1. Install riser conductors. 2. One (1) 230 kV, 3000 A center break switch. 3. Connectors on both ends of the risers along with spacers. 4. Miscellaneous conductors, connectors, insulators, and grounding materials as per engineering standards.
Substation assumptions	No additional relay material is needed at this site.
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.
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	$141,853.00
Component cost (in-service year)	$151,925.00

Substation Upgrade Component

Component title	Gordonsville Substation Terminal Equipment
Substation name	Gordonsville
Substation zone	193
Substation upgrade scope	Replace terminal elements at Gordonsville that may limit the planned transfer capability of the new conductor. This project also provides for the drawing work, relay resets, and field support necessary to change the Line 2135 destination at Gordonsville Substation.

Transformer Information

None

New equipment description	Purchase and install: 1. Install riser conductors. 2. Connectors on both ends of the risers along with spacers. 3. Miscellaneous conductors, connectors, insulators, and grounding materials as per engineering standards.
Substation assumptions	No additional relay material is needed at this site.
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.
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	$78,483.00
Component cost (in-service year)	$84,055.00

Substation Upgrade Component

Component title	Hollymeade Substation - Relay Resets and Documentation
Substation name	Hollymeade
Substation zone	193
Substation upgrade scope	Update oneline to reflect new switching station. Provides for the drawing work, relay resets, and field support necessary to change the Line 2054 destination at Hollymeade Substation.

Transformer Information

None

New equipment description	N/A
Substation assumptions	No additional relay material is needed.
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.
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	$21,613.00
Component cost (in-service year)	$23,148.00

Greenfield Substation Component

Component title	New 230kV Switching Station
Substation name	To be determined
Substation description	New 230kV four-breaker ring bus switching station terminating four transmission lines. Location: lat: 38.067073, lon: -78.327256 Size: approximately 325’ x 256’
Nominal voltage	AC
Nominal voltage	230Kv

Transformer Information

None

Major equipment description	1.) Four (4) 230 kV, 3000A, 50 kA SF6 Circuit Breakers 2.) Eight (8) 230 kV, 3000A, 3-phase Center Break Gang Operated Switches 3.) Four (4), 230 kV, 3000 Amps Wave Trap and Line Tuner 4.) One (1) 24’ X 40’ Control Enclosure 5.) Two (2) 230 kV, 3000A, Single-phase Center Break Gang Operated Switches 6.) two (2) 38’ 230 KV SC Backbones for Substation with associated conductor and fiber strain hardware 7.) one (1) DC DDE 2 Pole Str. New # 2054/337, 2135/342 outside the Substation with associated conductor and fiber strain hardware.	
	Normal ratings	**Emergency ratings**
Summer (MVA)	1046.000000	1046.000000
Winter (MVA)	1160.000000	1160.000000
Environmental assessment	Please review section A.4 Assessment of Potential Environmental Impacts in the attached Proposal 5A - Permitting and Real Estate Summary document attached in the supporting documents.	
Outreach plan	Please review section A.6 Discussion of Potential Public Opposition in the attached Proposal 5A - Permitting and Real Estate Summary document attached in the supporting documents.	
Land acquisition plan	Please review section A.2 Land Acquisition by Segment in the attached Proposal 5A - Permitting and Real Estate Summary document attached in the supporting documents.	
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	$6,876,018.00
Component cost (in-service year)	$7,364,215.00

Congestion Drivers

CD #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
ME-5	314749	6CHARLVL	314772	6PROFFIT	1	230	345	Market Efficiency
ME-7	207950	CUMB TR2	208004	JUNI BU1	1	230	229	Market Efficiency
ME-3	235479	01JUNCTN	235467	01FRNCHM	1	138	201	Market Efficiency

Existing Flowgates

None

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	02/2024
Project Duration (In Months)	39

Additional comments

None