New 765kV line from Joshua Falls to Durandal

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	321
Project title	New 765kV line from Joshua Falls to Durandal
Project description	Construct a new 765/500kV Switching Station, Durandal switching station, near Clover station & Install One 765/500kV transformer. Construct a new 765kV line from Durandal to Joshua Falls & install shunt reactors for the new 765kV transmission line at both ends of the new 765kV line. Construction Responsibility for two components of this project will be assigned to Valley Link Transmission LLC. Please see attached Executive Abstract for additional detail.
Email	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Project in-service date	06/2032
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Project Components

1. Joshua Falls - Durandal 765kV Line
2. Durandal 500kV Cut-in Lines
3. Joshua Falls Station upgrade

Greenfield Transmission Line Component

Component title	Joshua Falls - Durandal 765kV Line
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Point A	Joshua Falls Station
Point B	Durandal Station
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	5523.000000	5523.000000
Winter (MVA)	6845.000000	6845.000000

Conductor size and type	6-bundle 795 kcmil ACSR Tern
Nominal voltage	AC
Nominal voltage	765
Line construction type	Overhead
General route description	The Proposing Entity assessed environmental and land use constraints and opportunities within an area that included the existing Joshua Falls substation and the greenfield Durandal substation as the two endpoints. The evaluation resulted in the Bid Route of approximately 55.6-miles of greenfield line through four counties (Campbell, Appomattox, Prince Edward, and Charlotte) in Virginia. The 765kV line exits the existing Joshua Falls Substation from the south, then travels in a predominantly southeast direction until it reaches the greenfield Durandal substation from the west, paralleling 40.0 miles of existing transmission line. No habitable structures are present within the proposed ROW. Overall, the Route selected is the most direct route between the two existing substations and has the least overall impact on land use and environmental resources based on the Proposing Entity’s qualitative review. The Route significantly reduces the number of new access roads, enhancing overall constructability impacts.

Terrain description	The topography along the Joshua Falls–Durandal 765kV line is relatively hilly. Land use in the area encompasses mostly agricultural and residential parcels in rural Virginia. The line crosses low density developed areas, a significant amount of highly vegetated (wooded) rural land, state/county highways, railroads, streams, and existing utilities.
Right-of-way width by segment	The Joshua Falls–Durandal 765kV greenfield route ROW will be 200 feet in width and will parallel/cross existing rights-of-way to include interstates, roads, railroads, existing transmission lines/utilities, existing pipelines and best minimizes potential impacts to the natural and human environments.
Electrical transmission infrastructure crossings	36.995, -78.5721, 37.2316, -78.7487, 37.3816, -78.9648
Civil infrastructure/major waterway facility crossing plan	The greenfield Joshua Falls-Durandal 765kV line greenfield route crosses & runs parallel with multiple railroads, numerous water facilities, and large underground pipelines. The route does not cross any notable waterways; however, the southern terminus is located approximately 0.6-mile east of the Roanoke River, and the northern terminus is located approximately 0.4-mile southeast of the James River. The four Norfolk Southern railroad crossings are located at latitude/longitude 37.1187, -78.6238; 37.2031, -78.6612; 37.228, -78.6864; and 37.3579, -78.8991. The transmission line runs parallel with one pipeline for a short distance in Charlotte County and crosses over several pipelines.
Environmental impacts	Land use along the Bid Route corridor is a predominantly rural agricultural landscape with pockets of residential development. The route intersects FEMA-mapped floodplains and/or floodways, and NWI-mapped wetlands primarily adjacent to streams and low-lying areas. The route also crosses named and unnamed streams in various locations. Based on existing aerial photography, the proposed route likely has unmapped wetland or drainage features. The timing of construction will be executed in accordance with state and federal agency criteria as needed. Desktop studies and record reviews for the station parcel and line route will be conducted for wetlands and streams, hazardous materials, and cultural resources. Following field studies, data will be digitized and provided to engineering so that pole locations and the station is sited to maximize avoidance of sensitive resources. For example, poles will be placed outside of or span wetlands, streams, and floodplains to the greatest extent possible. Existing access and roads will be utilized to access pole locations. If necessary, temporary access roads to pole locations will be identified and field surveyed for environmental and cultural resources and will be adjusted to avoid or minimize impacts.
Tower characteristics	This 765kV line utilizes a combination of self-supporting and guyed-V lattice towers. All 765kV construction will be horizontally configured. Guyed-V suspension towers will be supported by a center grillage and four bridge-strand anchors. Self-supporting suspension towers, running-corner suspension towers, and tension structures will utilize concrete drilled piers to support foundation loads. Self-supporting suspension structures will be used to the extent possible as an effort to keep electrical infrastructure compatible with agricultural use, whereas guyed-V suspension towers will be utilized in steeper terrain where access for concrete trucks is difficult, or impractical.

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	$297,690,509.00
Component cost (in-service year)	$335,053,289.00

Greenfield Transmission Line Component

Component title	Durandal 500kV Cut-in Lines
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Point A	Clover
Point B	Rawlings
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	4357.000000	4357.000000

Winter (MVA)	5155.000000	5155.000000
Conductor size and type	The new cut-ins will be constructed using a conductor bundle to meet/exceed the SN/SE/WN/WE ratings stated above.	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	The 500 kV extension will be approximately 0.35 miles in length between the proposed Durandal Substation in Charlotte County, Virginia to Dominion's existing Clover - Rawlings 500kV line.	
Terrain description	The topography for the 500 kV extension is rolling hills through rural forested land in Charlotte County, Virginia.	
Right-of-way width by segment	The ROW for the 500kV cut-ins will be 175 feet in width.	
Electrical transmission infrastructure crossings	NA	
Civil infrastructure/major waterway facility crossing plan	The transmission line will not cross or impact civil infrastructure/major waterway crossings.	
Environmental impacts	The tie-ins lines have undergone a robust siting analysis and the proposed cost includes costs for Environmental studies and permits.	
Tower characteristics	The new 500kV cut-in lines for Durandal will be constructed using a mixture of galvanized steel 3-pole deadend structures and galvanized tubular steel H-Frame structures. All structures will be supported by concrete pier foundations.	
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	$4,300,000.00
Component cost (in-service year)	$4,839,688.00

Substation Upgrade Component

Component title	Joshua Falls Station upgrade
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Joshua Falls
Substation zone	AEP
Substation upgrade scope	Create a new 765kV line position at AEP Joshua Falls Substation. The new line position will include 3-50MVar single-phase 765kV reactors to interconnect the new Joshua Falls - Durandal 765kV line. 3-765kV circuit breakers will be added to the existing 765kV ring bus at Joshua Falls.

Transformer Information

None

New equipment description	Create a new 765kV line position by adding 3-765kV, 5000A, 63kA line circuit breakers; 1-765kV, 3000A, 50kA reactor circuit breaker; 6-765kV, 5000A single-phase disc. switches; 6-765kV, 4000A single-phase disc. switches; 1-set of 3-765kV CCVTs; 4-sets of 3-765kV arresters; 3-765kV, 50MVar single-phase line reactors with arresters; and associated bus jumpers, bus tubing & dampening cables, strain bus, insulators, steel structures, foundations, yard lighting, control cables, conduits, cable trench, and equipment grounding. Install associated relay equipment in the existing control house.

Substation assumptions	It is assumed that all necessary outages will be available, the existing AC, DC, & telecom. systems will accommodate the new equipment, the existing control house has space for the new relay equipment, ground grid resistivity test data are available, ground grid upgrades will not be needed, the existing cable trench has space for the new control cables, soil boring logs and geotechnical report are available, additional station stone will not be needed, and space will be available to install the equipment outlined in this description.
Real-estate description	All necessary land rights are acquired.
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	$25,254,255.00
Component cost (in-service year)	$28,423,886.00

Greenfield Substation Component

Component title	New Substation - Durandal
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Durandal Substation

Substation description	Purchase & Install Substation Material: 1. Three (3), 765/500kV, 750 MVA Single Phase Transformers 2. Two (2), 765kV, 50kAIC, 4000A, SF6 Circuit Breakers 3. Three (3), 765kV, 4000A Motor Operated Vertical Break Switches 4. Three (3), 765kV Coupling Capacitor Voltage Transformers, Relay Accuracy 5. Six (6), 476kV MCOV Station Class Surge Arresters 6. One (1), 765 kV, 150 MVAR Shunt Reactor 7. Six (6), 500kV, 63kAIC, 5000A, SF6 Circuit Breakers 8. Twelve (12), 500kV, 5000A Double End Break Switches 9. Twelve (12), 500kV Coupling Capacitor Voltage Transformers, Relay Accuracy 10. Six (6), 396kV, 318kV Station Class Surge Arresters 11. Approximately 7100 FT. of 6 in AL Bus and connectors 12. Two (2) 24’ X 50’ Control Enclosures including all relay and infrastructure panels 13. One (1) 14’ X 25’ Security Enclosure with security and communications panels 14. Station Batteries and Battery Chargers as required 15. AC Station Service System with one source connected to Transformers tertiary and second bank fed from local distribution source. 16. Approximately 5000 FT. of Level One Security Fence with Security Integrators and associated infrastructure 17. The equipment foundations and steel structures as required 18. Approximately 2,600 FT. of Cable Trench, conduits and control cables as required 19. Oil Containment System for 765/500 kV Transformer Bank and 765 Reactor Bank 20. Ground grid for the entire substation as per Dominion Energy Standards 21. Site preparation, grading and stormwater management system for the Substation 22. Conductor, connectors, insulators and grounding as per Dominion Energy Standards
Nominal voltage	AC
Nominal voltage	765/500

Transformer Information

	Name	Capacity (MVA)
Transformer	Transformer 1	2987

	High Side	Low Side	Tertiary
Voltage (kV)	765	500	

Major equipment description	1. Three (3), 765/500kV, 750 MVA Single Phase Transformers 2. Two (2), 765kV, 50kAIC, 4000A, SF6 Circuit Breakers 3. Three (3), 765kV, 4000A Motor Operated Vertical Break Switches 4. Three (3), 765kV Coupling Capacitor Voltage Transformers, Relay Accuracy 5. Six (6), 476kV MCOV Station Class Surge Arresters 6. One (1), 765 kV, 150 MVAR Shunt Reactor 7. Six (6), 500kV, 63kAIC, 5000A, SF6 Circuit Breakers 8. Twelve (12), 500kV, 5000A Double End Break Switches 9. Twelve (12), 500kV Coupling Capacitor Voltage Transformers, Relay Accuracy 10. Six (6), 396kV, 318kV Station Class Surge Arresters 11. Approximately 7100 FT. of 6 in AL Bus and connectors 12. Two (2) 24’ X 50’ Control Enclosures including all relay and infrastructure panels 13. One (1) 14’ X 25’ Security Enclosure with security and communications panels 14. Station Batteries and Battery Chargers as required 15. AC Station Service System with one source connected to Transformers tertiary and second bank fed from local distribution source.	
	Normal ratings	Emergency ratings
Summer (MVA)	2987.000000	3792.000000
Winter (MVA)	3604.000000	4140.000000
Environmental assessment	Refer to Real Estate and Permitting Plans.	
Outreach plan	Refer to Real Estate and Permitting Plans.	
Land acquisition plan	Refer to Real Estate and Permitting Plans.	
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	$217,759,440.01
Component cost (in-service year)	$233,220,360.00

Congestion Drivers

None

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	01/2026
Construction start date	06/2029
Project Duration (In Months)	77

Cost Containment Commitment

Cost cap (in current year)	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Cost cap (in-service year)	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Components covered by cost containment

1. Joshua Falls - Durandal 765kV Line - Dominion
2. Durandal 500kV Cut-in Lines - Dominion
3. Joshua Falls Station upgrade - AEP

4. New Substation - Durandal - Dominion

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	No
ROW / land acquisition	No
Materials & equipment	No
Construction & commissioning	No
Construction management	No
Overheads & miscellaneous costs	No
Taxes	No
AFUDC	No
Escalation	No
Additional Information	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	Yes
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	No
Is the proposer offering a Debt to Equity Ratio cap?	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Additional Comments

None