Joshua Falls - Yeat 765kV Greenfield Line and Substation Re-submittal

General Information

Proposing entity name	Company confidential and proprietary information.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Company confidential and proprietary information.
Company proposal ID	Company confidential and proprietary information.
PJM Proposal ID	905
Project title	Joshua Falls - Yeat 765kV Greenfield Line and Substation Re-submittal
Project description	Add (2) 765kV breakers at Joshua Falls to create a 2-breaker ring with the transformer still connected off the bus. Remove CT and RTL limits to bring both 765kV lines up to the 3000A wavetrap rating. Construct new Yeat 765/500/230kV station near existing Bristers 500/230kV substation. This substation will have (10) 500kV breakers, (2) 765/500kV transformers, (2) 500/230kV transformers, (2) 230kV CB's and (1) 765kV CB. Construct 135-mile single circuit 765kV greenfield line connecting Joshua Falls 765kV and new Greenfield Yeat 765kV stations. Cut in Bristers–Ox 500kV and Meadowbrook–Vint Hill 500kV lines into Yeat's 500kV yard. AEP installs a new 12-mile dbl ckt BOLD (Breakthrough Overhead Line Design) 230kV line from Yeat–CloverHIll. Dominion installs a new 7.5-mile dbl ckt BOLD (Breakthrough Overhead Line Design) 230kV line from Warrenton–Wheeler. Dominion installs new 0.1% reactor at Vinthill on Vinthill–Morrisville. Dominion Install new 0.1% reactor at Vinthill on Vinthill–Loudoun 1. Dominion Rebuilds 1.7 miles 230kV line from Marsh Run–RemingtonCt as double circuit. Dominion replaces remote end equipment to bring rating up on 230kV line from Wheeler–Linton Tap–Atlantic. Dominion rebuilds the 0.23-mile line between Bristers 500kV and Yeat 500kV. Dominion installs (2) 230kV breakers at Wheeler substation.
Email	Company confidential and proprietary information.
Project in-service date	10/2029
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes

Additional benefits	Company confidential and proprietary information.

Project Components

1. Joshua Falls-Yeat 765kV Greenfield Transmission Line
2. Yeat Greenfield Station
3. Bristers–Ox 500kV, and Meadowbrook–Vint Hill 500kV Tie-in Lines
4. Yeat–Clover Hill 230kV Greenfield Transmission Line
5. Warrenton-Wheeler 230kV Greenfield Transmission Line
6. Vint Hill-Morrisville Series Reactor
7. Vint Hill-Loudon 1 Series Reactor
8. Marsh Run–Remington Ct 230kV Line Upgrade
9. Wheeler-Linton Tap-Atlantic 230kV Line Upgrade
10. Bristers–Yeat 500kV Line Upgrade
11. Wheeler Station 230kV Breaker Upgrade
12. Opossum Creek Series Reactor
13. New London Station Series Reactor
14. Broadford Station Upgrade
15. Skimmer Station Upgrade
16. Coco-Capitol Hill 500kV Line Upgrade
17. Joshua Falls Station Upgrade
18. Jacksons Ferry–Cloverdale 765kV Breakers
19. Kyger Creek-Sporn 345kV segment #25 & Terminal Equipment
20. Broadford-Jacksons Ferry 765kV Reactor - 3000A Breaker

Greenfield Transmission Line Component

Component title	Joshua Falls-Yeat 765kV Greenfield Transmission Line
Project description	Company confidential and proprietary information.
Point A	Joshua Falls Station

Point B	Yeat Station	
Point C		
	Normal ratings	**Emergency ratings**
Summer (MVA)	4047.000000	4571.000000
Winter (MVA)	4484.000000	4961.000000
Conductor size and type	6 – 795 kcmil 45/7 Strand “Tern” ACSR (Bundled)	
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 and new Yeat substations as the two endpoints. The evaluation resulted in the Bid Route that extends approximately 135-miles through 11 counties (Albemarle, Amherst, Buckingham, Campbell, Culpeper, Fauquier, Fluvanna, Louisa, Nelson, Orange, and Spotsylvania) in Virginia. The 765kV line exits Joshua Falls Substation from the northwest, turns north, then travels in a predominantly northeast direction until it reaches the new Yeat Substation from the south. The 765kV line crosses multiple named waterbodies including three crossings of the James River. Other stream crossings include Nunn Creek and the Rappahannock River and smaller headwater streams and their associated unnamed tributaries. The proposed 765kV line crosses multiple high voltage transmission lines. The Proposed Entity identified several opportunities to parallel existing transmission lines for nearly half of its proposed alignment. No habitable structures are present within the proposed ROW. Overall, the Route selected is the most direct route between the two substations and has the least overall impact to land use and environmental resources based on the Proposing Entity’s qualitative review. The Route significantly reduces the number of new access roads, reducing overall constructability impacts.	
Terrain description	The topography for the Joshua Falls–Yeat 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, water crossings, and existing utilities.	
Right-of-way width by segment	The Joshua Falls–Yeat 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	-Lat: 37°26'41.44"N/Lon: 79° 2'50.73"W, -Lat: 37°27'25.83"N/Lon: 79° 2'39.03"W, -Lat: 37°33'33.14"N/Lon: 79° 0'28.29"W, -Lat: 37°35'42.33"N/Lon: 78°57'29.14"W, -Lat: 37°37'25.32"N/Lon: 78°55'3.83"W, -Lat: 37°38'16.16"N/Lon: 78°53'33.12"W, -Lat: 37°41'48.98"N/Lon: 78°48'5.43"W, -Lat: 37°42'25.10"N/Lon: 78°47'19.35"W, -Lat: 37°45'11.93"N/Lon: 78°43'32.57"W, -Lat: 37°45'2.57"N/Lon: 78°44'20.25"W, -Lat: 37°45'22.33"N/Lon: 78°42'40.32"W, -Lat: 37°45'27.10"N/Lon: 78°42'15.44"W, -Lat: 37°45'35.87"N/Lon: 78°41'25.94"W, -Lat: 37°45'47.59"N/Lon: 78°40'30.64"W, -Lat: 37°46'35.33"N/Lon: 78°36'28.08"W, -Lat: 37°47'31.57"N/Lon: 78°30'58.28"W, -Lat: 37°47'37.12"N/Lon: 78°31'12.84"W, -Lat: 37°47'8.39"N/Lon: 78°29'29.21"W, -Lat: 37°50'19.41"N/Lon: 78°25'3.88"W, -Lat: 37°50'56.46"N/Lon: 78°15'21.55"W, -Lat: 37°51'45.10"N/Lon: 78°20'52.84"W, -Lat: 37°54'1.44"N/Lon: 78° 5'49.25"W, -Lat: 38° 0'26.29"N/Lon: 78° 1'53.65"W, -Lat: 38° 0'39.25"N/Lon: 78° 1'45.67"W, -Lat: 38° 1'53.30"N/Lon: 78° 0'55.54"W, -Lat: 38°12'38.09"N/Lon: 77°54'19.42"W, -Lat: 38°13'39.66"N/Lon: 77°51'22.30"W, -Lat: 38°14'13.78"N/Lon: 77°50'43.56"W, -Lat: 38°14'27.69"N/Lon: 77°50'32.54"W, -Lat: 38°15'16.46"N/Lon: 77°48'41.26"W, -Lat: 38°29'17.30"N/Lon: 77°43'1.80"W, -Lat: 38°29'25.81"N/Lon: 77°42'9.40"W, -Lat: 38°33'32.17"N/Lon: 77°35'41.90"W, -Lat: 38°33'55.02"N/Lon: 77°35'30.82"W
Civil infrastructure/major waterway facility crossing plan	The Joshua Falls–Yeat 765kV line crosses and runs parallel with multiple railroads, numerous water facilities, and large underground pipelines. The most notable water crossings are the James River, the Buffalo River, the Tye River, the Rockfish River, the Hardware River, the Rivanna River, the South Anna River, the Rapidan River, and the Rappahannock River. The railroads are located at Lat: 37°26'0.77"N/Lon: 79° 2'40.14"W, Lat: 37°47'15.81"N/Lon: 78°30'5.95"W, Lat: 37°47'5.55"N/Lon: 78°28'46.49"W, and Lat: 38° 1'43.36"N/Lon: 78° 1'0.78"W. Three of these railroads parallel the James River with the other paralleling a major roadway. A large underground pipeline is first encountered at Lat: 37°47'2.36"N/Lon: 78°27'59.03"W. The transmission line runs parallel with and crosses over the pipeline frequently.
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. Named and unnamed streams also bisect the route in various locations. Based on existing aerial photography, the proposed route likely has unmapped wetland or drainage features. The James River is the most significant body of water the Joshua Falls–Yeat 765kV line crosses. Due to this waterway's size, additional permitting may be required. Timing of construction will be executed in accordance with state and federal agencies 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 tower construction that is horizontally configured. The predominant structure type will be (396) guyed-V suspension towers supported by a center grillage and four bridge-strand anchors. Self-supporting suspension towers (124), running-corner suspension towers (26), and tension structures (86) 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.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$696,050,947.00
Component cost (in-service year)	$831,121,232.00

Greenfield Substation Component

Component title	Yeat Greenfield Station
Project description	Company confidential and proprietary information.
Substation name	Yeat Substation

Substation description	Yeat Station (Phase 1) Description: Construct a 500/230KV station having three (3) 500kV breaker and a half strings; (7) 500kV, 5000A circuit breakers; (2) 500kV, 4000A transformer high side circuit breakers; (4) 500kV lines with space for one (1) future 500kV line; (3) 500kV transformer connection points one (1) in a future string position and one (1) on each end bus); (2) 500/230kV auto-transformers each consisting of (3) 500MVA, 1-phase units (space available for a switchable spare unit); (2) 230kV, 5000A line circuit breakers; (2) 230kV lines; a 16ft x 72ft DICM (drop-in control module); relay equipment; AC power system; DC system; ground grid; control cables; conduits; cable trench; power cables; foundations; steel structures; buswork; switches; arresters; PT's; CCVT's; line traps; and other associated items. This new station will be situated within a 1,010ft x 1,060ft fenced area. (Phase 2) Description: Add a 765kV yard to the existing 500/230kV station (see Phase 1 above) having (1) 765kV line; (1) 765kV line circuit breaker; (3) 765kV, 50 MVAr, 1-phase line shunt reactors with a circuit breaker (space available for a future switchable spare unit); (2) 765/500kV auto-transformers connected in parallel (via 765kV and 500kV buswork), each consisting of (3) 750MVA, 1-phase units (space available for a switchable spare unit); (1) 500kV, 5000A circuit breaker; (1) 500kV transformer connection point in a string position; a 16ft x 12ft DICM (drop-in control module) expansion; relay equipment; AC power system additions; DC system additions; ground grid; control cables; conduits; cable trench; power cables; foundations; steel structures; buswork; switches; arresters; PT's; CCVT's; line traps; and other associated items. This station expansion will be situated within a 1,010ft x 570ft fenced area.
Nominal voltage	AC
Nominal voltage	765/500/230

Transformer Information

	Name		**Capacity (MVA)**	
Transformer	Transformer Bank 1		750	
	High Side	**Low Side**		**Tertiary**
Voltage (kV)	765	500		

	Name		**Capacity (MVA)**	
Transformer	Transformer Bank 2		750	
	High Side	**Low Side**		**Tertiary**
Voltage (kV)	765	500		

	Name		Capacity (MVA)
Transformer	Transformer Bank 3		500
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	

	Name		Capacity (MVA)
Transformer	Transformer Bank 4		500
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	

Major equipment description	Construct new “Yeat” 765/500/230kV station near existing Bristers 500/230kV substation. This substation will have: (11) 500kV breakers, (2) 765/500kV transformers, (2) 500/230kV transformers, (2) 230kV CB’s (2) 765kV CB’s.

	Normal ratings	Emergency ratings
Summer (MVA)	2280.000000	2647.000000
Winter (MVA)	2620.000000	2920.000000

Environmental assessment	Land use at the proposed parcel for Yeat Station is predominantly agricultural to the west and forested and forested wetlands to the east. One residence is located on the parcel. The station footprint is situated in the northwestern portion of the parcel. A National Wetlands Inventory (NWI) mapped riverine wetland is located within the station footprint. No National Hydrography Dataset (NHD) mapped streams are located on the station footprint. It is possible that regulated wetlands or streams will be affected as part of this solution. Desktop studies and record reviews will be completed for the development parcel including an environmental site assessment(s), wetland and stream delineation, threatened and endangered species review, and cultural resource study. Following these studies, the station will be sited on the property and designed to avoid impacts to sensitive features. Major regulatory approvals for the proposed solution would not be anticipated to exceed any general performance standard or require any variance to be readily permitted. Appropriate best management practices will be installed prior to construction to manage storm water runoff. Timing of construction will be executed in accordance with state and federal agencies criteria as needed. A General Virginia Pollutant Discharge Elimination System (VPDES) Permit is required for the project, and will be administered by Loudoun County, who is delegated program authority by the Virginia Department of Environmental Quality. The VPDES permit submission will include a SWPPP, erosion and sediment control plan, stormwater management plan, and pollution prevention plan. The stormwater management plan will include a narrative that describes, among other things, the proposed stormwater management facilities, the limits of clearing and grading, and the proposed drainage patterns on the site, proposed buildings, roads, parking areas, utilities, and the total disturbed acreage for the site. The proposed stormwater management facilities and all associated impacts are typical of energy infrastructure projects and would not represent a risk to the overall project schedule, cost, or ability to meet the identified requirements of the RFP.
Outreach plan	Public outreach is a critical component to the Proposing Entity’s siting process, so efforts will include properly informing the public; federal, state, and local agencies; local governments; and other key stakeholders on the need for, and benefits of, this Project. The Proposing Entity’s approach to public outreach is to be always candid and transparent, and to offer a variety of tools and means for directly impacted parties to engage with our staff. The Proposing Entity will provide development updates to local government officials, key stakeholders, and impacted parties as the Project progresses. Public outreach also will involve collecting information about landowner properties and communicating with directly affected landowners during the final siting process.
Land acquisition plan	The proposed Yeat station will be 39-acres in size and located on undeveloped wooded land in rural Fauquier County, Virginia. The proposed station will be purchased in fee.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information.

Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$184,916,621.00
Component cost (in-service year)	$220,800,116.00

Greenfield Transmission Line Component

Component title	Bristers–Ox 500kV, and Meadowbrook–Vint Hill 500kV Tie-in Lines
Project description	Company confidential and proprietary information.
Point A	Bristers & Meadowbrook
Point B	Ox & Vint Hill
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	4224.000000	5515.000000
Winter (MVA)	4357.000000	5515.000000
Conductor size and type	4-bundle 1351.5 kcmil Dipper ACSR	
Nominal voltage	AC	
Nominal voltage	500	

Line construction type	Overhead
General route description	The 500kV tie-ins will be approximately 1.50 miles for each leaving the proposed Yeat Station to the existing Bristers–Ox 500kV (1.03 miles) and Meadowbrook-Vint Hill 500kV (0.52-mile) lines in Fauquier County, Virginia.
Terrain description	The topography for the 500kV tie-ins is rolling hills and forested. Land use in the area encompasses mostly residential parcels in Fauquier County, Virginia. The line crosses low density developed areas, a significant amount of highly vegetated (wooded) rural land, state/county highways, railroads, and existing utilities.
Right-of-way width by segment	The 500kV greenfield tie-ins ROWs will be 175 feet each 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	N/A
Civil infrastructure/major waterway facility crossing plan	The tie-ins will not impact civil infrastructure or major waterways.
Environmental impacts	The tie-in lines have undergone a robust siting analysis, as well as the required environmental and cultural resource surveys.
Tower characteristics	The condition of the existing line is assumed to be in good working order based on the age determination from aerial imagery (less than 20 years). Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations. It is assumed that a total of four (4) three-pole deadend structures supported by concrete pier foundations will be utilized to turn the existing 500kV lines in/out of the proposed Yeat Station.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.

Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$8,600,000.00
Component cost (in-service year)	$10,268,850.00

Greenfield Transmission Line Component

Component title	Yeat–Clover Hill 230kV Greenfield Transmission Line
Project description	Company confidential and proprietary information.
Point A	Yeat
Point B	Clover Hill
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1640.000000	1640.000000
Winter (MVA)	1728.000000	1728.000000

Conductor size and type	6-bundled 795 kcmil 26/7"Drake" ACSS
Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead
General route description	The Yeat–Clover Hill 230kV line will be approximately 11.69 miles long and connect the new Yeat Substation to the existing Clover Hill Substation. The 230kV line will exit the Yeat Substation from the west, turn north, then travel in a northeast direction until it reaches the Clover Hill Substation. The line is entirely located in the state of Virginia and crosses Fauquier and Prince William counties.

Terrain description	The topography for the Yeat–Clover Hill 230kV line is hilly. Land use in the area encompasses mostly residential/agricultural parcels in rural Virginia. The line crosses low density developed areas, a significant amount of highly vegetated (wooded) rural land, state/county roadways, water crossings, and existing utilities.
Right-of-way width by segment	The Yeat–Clover Hill 230kV greenfield route will be 120 feet in width and will parallel/cross existing rights-of-way to include interstates, roads, existing transmission lines/utilities, and best minimizes potential impacts to the natural and human environments.
Electrical transmission infrastructure crossings	Lat: 38°35'11.09"N/Lon: 77°35'33.83"W
Civil infrastructure/major waterway facility crossing plan	The Yeat–Clover Hill 230kV line crosses and runs parallel with multiple roadways and numerous water facilities. The water facilities are on the smaller side and can be located at the following locations: Lat: 38°37'38.75"N/Lon: 77°34'39.89"W Lat: 38°40'5.18"N/Lon: 77°31'46.74"W Lat: 38°41'48.82"N/Lon: 77°30'11.95"W Lat: 38°41'52.20"N/Lon: 77°30'8.37"W
Environmental impacts	Land use along the Bid Route corridor consists of mixed agricultural and wood land uses. The route intersects numerous water features, including FEMA-mapped floodplains and/or floodway, NWI-mapped wetlands, and NHD streams (including Kettle Run and Broad Run). Based on existing aerial photography, the proposed route likely passes unmapped wetland or drainage features. Desktop studies and record reviews will be conducted for wetlands and streams, hazardous materials, and cultural resources. No major environmental impacts or concerns were identified based on a preliminary desktop review. A General Virginia Pollutant Discharge Elimination System (VPDES) Permit is required for the project, and will be administered by Loudoun County, who is delegated program authority by the Virginia Department of Environmental Quality. The VPDES permit submission will include a SWPPP, erosion and sediment control plan, stormwater management plan, and pollution prevention plan. There would be no proposed stormwater management facilities associated with the linear project and therefore the work would not represent a risk to the overall project schedule, cost, or ability to meet the identified requirements of the RFP.
Tower characteristics	This design will utilize BOLD (Breakthrough Overhead Line Design) 230kV design. This design features a monopole structure with two arched crossarm to hold two circuits. The circuit is arranged in a compact delta configuration. These structures are up to 30-percent shorter in height than Traditional monopole structures.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.

ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$45,168,101.00
Component cost (in-service year)	$53,933,075.00

Greenfield Transmission Line Component

Component title	Warrenton-Wheeler 230kV Greenfield Transmission Line
Project description	Company confidential and proprietary information.
Point A	Warrenton
Point B	Wheeler
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1640.000000	1640.000000
Winter (MVA)	1728.000000	1728.000000
Conductor size and type	6-bundled 795 kcmil 26/7 "Drake" ACSS	
Nominal voltage	AC	
Nominal voltage	230	
Line construction type	Overhead	

General route description	The Warrenton–Wheeler 230kV line will be approximately 8.8 miles long and connect the existing Warrenton Substation to the existing Wheeler Substation. The 230kV line will exit the Warrenton Substation from the northeast then travel in a northeast direction until it reaches the Wheeler Substation. The line is entirely located in the state of Virginia and crosses Fauquier and Prince William Counties.
Terrain description	The topography for the Warrenton–Wheeler 230kV line is hilly. Land use in the area encompasses mostly residential parcels in rural Virginia. The line crosses low density developed areas, a significant amount of highly vegetated (wooded) rural land, state/county roadways, and existing utilities.
Right-of-way width by segment	The Warrenton–Wheeler 230kV greenfield ROW will be 120 feet in width and will parallel/cross existing rights-of-way to include interstates, roads, existing transmission lines/utilities, and best minimizes potential impacts to the natural and human environments.
Electrical transmission infrastructure crossings	Based on a desktop review, it does not appear that there are any significant transmission infrastructure crossings other than those typically found along areas such as major roadways.
Civil infrastructure/major waterway facility crossing plan	The Warrenton–Wheeler 230kV line crosses and runs parallel with multiple roadways. There do not appear to be any notable water crossings or railroads along the route.
Environmental impacts	Land use along the Bid Route corridor consists of predominately wood land use, with pockets of agricultural and residential areas. The route intersects numerous water features (i.e., Cedar Run and Kettle Run), including FEMA-mapped floodplains and/or floodway, NWI-mapped wetlands, and NHD streams (including Kettle Run and Broad Run). Based on existing aerial photography, the proposed route likely passes unmapped wetland or drainage features. Desktop studies and record reviews will be conducted for wetlands and streams, hazardous materials, and cultural resources. No major environmental impacts or concerns were identified based on a preliminary desktop review. A General Virginia Pollutant Discharge Elimination System (VPDES) Permit is required for the project, and will be administered by Loudoun County, who is delegated program authority by the Virginia Department of Environmental Quality. The VPDES permit submission will include a SWPPP, erosion and sediment control plan, stormwater management plan, and pollution prevention plan. There would be no proposed stormwater management facilities associated with the linear project and therefore the work would not represent a risk to the overall project schedule, cost, or ability to meet the identified requirements of the RFP.
Tower characteristics	This design will utilize BOLD (Breakthrough Overhead Line Design) 230kV design. This design features a monopole structure with two arched crossarm to hold two circuits. The circuit is arranged in a compact delta configuration. These structures are up to 30-percent shorter in height than Traditional monopole structures.
Construction responsibility	Company confidential and proprietary information.

Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$32,453,120.00
Component cost (in-service year)	$38,754,305.00

Substation Upgrade Component

Component title	Vint Hill-Morrisville Series Reactor
Project description	Company confidential and proprietary information.
Substation name	Vint Hill Station
Substation zone	Dominion
Substation upgrade scope	Install a new 0.1% reactor at Vint Hill on Vint Hill-Morrisville.

Transformer Information

None

New equipment description	(1) 0.1% Series Reactor.

Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$5,760,000.00
Component cost (in-service year)	$6,877,741.00

Substation Upgrade Component

Component title	Vint Hill-Loudon 1 Series Reactor
Project description	Company confidential and proprietary information.
Substation name	Vint Hill Station
Substation zone	Dominion
Substation upgrade scope	Install a new 0.1% reactor at Vint Hill on Vint Hill-Loudon 1.

Transformer Information

None

New equipment description	A new 0.1% series reactor.
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$5,760,000.00
Component cost (in-service year)	$6,877,741.00

Transmission Line Upgrade Component

Component title	Marsh Run–Remington Ct 230kV Line Upgrade
Project description	Company confidential and proprietary information.

Impacted transmission line	Marsh Run-Remington Ct
Point A	Marsh Run
Point B	Remington Ct
Point C	
Terrain description	The topography for the Marsh Run–Remington Ct 230kV line is gently rolling. Land use in the area is mostly rural residential with some scattered agriculture. The line crosses primarily through existing woodlots along the backside of scattered residences, crossing state/county roadways, and along existing utility rights-of-way.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	1640.000000	1640.000000
Winter (MVA)	1728.000000	1728.000000
Conductor size and type	unknown	
Shield wire size and type	unknown	
Rebuild line length	1.7	

Rebuild portion description	Rebuild 1.7 miles 230kV line from Marsh Run–Remington Ct as double circuit.
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$5,831,000.00
Component cost (in-service year)	$6,962,519.00

Transmission Line Upgrade Component

Component title	Wheeler-Linton Tap-Atlantic 230kV Line Upgrade
Project description	Company confidential and proprietary information.
Impacted transmission line	Wheeler-Linton Tap-Atlantic 230 kV
Point A	Wheeler Station
Point B	Linton Tap

Point C	Atlantic
Terrain description	The topography for the Wheeler–Linton Tap–Atlantic 230kV line is hilly. Land use in the area encompasses mostly residential parcels, with some scattered pockets of agriculture. The line crosses low and high density developed areas, a significant amount of highly vegetated (wooded) rural land, Lake Manassas, state/county roadways, and existing utilities.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	1640.000000	1640.000000
Winter (MVA)	1728.000000	1728.000000
Conductor size and type	unkown	
Shield wire size and type	unknown	
Rebuild line length	approximately 2 miles	
Rebuild portion description	Dominion replaces remote end equipment to bring rating up on 230kV line from Wheeler–Linton Tap–Atlantic.	

Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$1,470,000.00
Component cost (in-service year)	$1,755,257.00

Transmission Line Upgrade Component

Component title	Bristers–Yeat 500kV Line Upgrade
Project description	Company confidential and proprietary information.
Impacted transmission line	Bristers-Yeat Line
Point A	Bristers Station
Point B	Yeat Station
Point C	

Terrain description	The topography for the Bristers–Yeat 500kV line is gently rolling. The line crosses primarily through existing woodlots along the backside of scattered residences, crossing county roadways, and along existing utility rights-of-way.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	unkown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	500.000000	500.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	4224.000000	5155.000000
Winter (MVA)	4357.000000	5155.000000

Conductor size and type	unknown
Shield wire size and type	unknown
Rebuild line length	approximately 1 mile
Rebuild portion description	Dominion rebuilds line between Bristers and Yeat (Length depends on site for Yeat, but is a short distance).
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information.

Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$3,332,000.00
Component cost (in-service year)	$3,978,582.00

Substation Upgrade Component

Component title	Wheeler Station 230kV Breaker Upgrade
Project description	Company confidential and proprietary information.
Substation name	Wheeler Station
Substation zone	Dominion
Substation upgrade scope	Dominion installs (2) 230kV breakers at Wheeler substation

Transformer Information

None

New equipment description	(2) 230kV breakers.

Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$1,960,000.00
Component cost (in-service year)	$2,340,343.00

Substation Upgrade Component

Component title	Opossum Creek Series Reactor
Project description	Company confidential and proprietary information.
Substation name	Opossum Creek Station
Substation zone	AEP
Substation upgrade scope	Install 15% reactor at Opossum Creek towards Candlers Mtn.

Transformer Information

None

New equipment description	15% series reactor Re-connect South Lynchburg to position C-C2 at Opossum Creek
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$4,800,000.00
Component cost (in-service year)	$5,731,451.00

Substation Upgrade Component

Component title	New London Station Series Reactor
Project description	Company confidential and proprietary information.

Substation name	New London Station
Substation zone	AEP
Substation upgrade scope	Install 15% reactor at New London towards John Mountain.

Transformer Information

None

New equipment description	15% series reactor.
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$2,800,000.00
Component cost (in-service year)	$3,343,346.00

Substation Upgrade Component

Component title	Broadford Station Upgrade
Project description	Company confidential and proprietary information.
Substation name	Broadford Station
Substation zone	AEP
Substation upgrade scope	Re-connect Broadford XFR 6 to position N-N2 and relocate 765kV breaker “P”.

Transformer Information

None

New equipment description	N/A
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.

Contingency	Company confidential and proprietary information.
Total component cost	$17,640,000.00
Component cost (in-service year)	$21,063,083.00

Substation Upgrade Component

Component title	Skimmer Station Upgrade
Project description	Company confidential and proprietary information.
Substation name	Skimmer Station
Substation zone	AEP
Substation upgrade scope	Replace relay limits at Skimmer for the (2) existing transformers.

Transformer Information

None

New equipment description	Relay limit switches.
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.

Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$1,960,000.00
Component cost (in-service year)	$2,340,343.00

Transmission Line Upgrade Component

Component title	Coco-Capitol Hill 500kV Line Upgrade
Project description	Company confidential and proprietary information.
Impacted transmission line	Coco-Capitol Hill
Point A	Coco Station
Point B	Capitol Hill Station
Point C	
Terrain description	Terrain within the Study Area, and crossed by the Proposed Solution is hilly to gently rolling in a mostly agricultural landscape with large forested tracts and residential development.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	4224.000000	4375.000000
Winter (MVA)	5155.000000	5155.000000
Conductor size and type	1033 conductor	
Shield wire size and type	unknown	
Rebuild line length	2.8 miles	
Rebuild portion description	Rebuild 2.8 miles on Coco–Capitol Hill with 1033 conductor.	
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.	
Construction responsibility	Company confidential and proprietary information.	
Benefits/Comments	Company confidential and proprietary information.	
Component Cost Details - In Current Year $		
Engineering & design	Company confidential and proprietary information.	
Permitting / routing / siting	Company confidential and proprietary information.	
ROW / land acquisition	Company confidential and proprietary information.	
Materials & equipment	Company confidential and proprietary information.	
Construction & commissioning	Company confidential and proprietary information.	
Construction management	Company confidential and proprietary information.	
Overheads & miscellaneous costs	Company confidential and proprietary information.	

Contingency	Company confidential and proprietary information.
Total component cost	$11,799,200.00
Component cost (in-service year)	$14,088,862.00

Substation Upgrade Component

Component title	Joshua Falls Station Upgrade
Project description	Company confidential and proprietary information.
Substation name	Joshua Falls Station
Substation zone	AEP
Substation upgrade scope	Add (2) 765kV breakers at Joshua Falls.

Transformer Information

None

New equipment description	(2) 765 kV breakers.
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.

Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$44,100,000.00
Component cost (in-service year)	$52,657,706.00

Substation Upgrade Component

Component title	Jacksons Ferry–Cloverdale 765kV Breakers
Project description	Company confidential and proprietary information.
Substation name	Jacksons Ferry and Cloverdale 765kV Station
Substation zone	AEP
Substation upgrade scope	At Jacksons Ferry: Replace three 765kV 3000A single phase wave traps with three 765kV 5000A wave traps. Replace two 765kV 4000A circuit breakers with two 765kV 5000A breakers. At Cloverdale: Replace two 765kV 4000A breakers with 765kV 5000A circuit breakers.

Transformer Information

None

New equipment description	At Jacksons Ferry: Two 765kV 5000A breakers and three 765kV 5000A wave traps At Cloverdale: Two 765kV 5000A breakers
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$12,200,000.00
Component cost (in-service year)	$14,567,438.00

Substation Upgrade Component

Component title	Kyger Creek-Sporn 345kV segment #25 & Terminal Equipment
Project description	Company confidential and proprietary information.
Substation name	Kyger Creek Station and Sporn Station
Substation zone	AEP
Substation upgrade scope	Add new terminal Equipment at Kyger Creek, including replacement of 345kV switches, strain bus, and risers to meet 1602 MVA. Complete line settings updates at Sporn Station remote end.

Transformer Information

None

New equipment description	Two 345kV, 3000A 3-phase switches, strain bus, and risers to meet 1602 MVA.

Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$850,000.00
Component cost (in-service year)	$1,014,944.00

Substation Upgrade Component

Component title	Broadford-Jacksons Ferry 765kV Reactor - 3000A Breaker
Project description	Company confidential and proprietary information.
Substation name	Broadford Station
Substation zone	AEP
Substation upgrade scope	Replace (1) 765kV 3000A circuit breaker with (1) 765kV 4000 amp circuit breaker.

Transformer Information

None

New equipment description	(1) 765kV 4000 amp circuit breaker.
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information.
Benefits/Comments	Company confidential and proprietary information.

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information.
Permitting / routing / siting	Company confidential and proprietary information.
ROW / land acquisition	Company confidential and proprietary information.
Materials & equipment	Company confidential and proprietary information.
Construction & commissioning	Company confidential and proprietary information.
Construction management	Company confidential and proprietary information.
Overheads & miscellaneous costs	Company confidential and proprietary information.
Contingency	Company confidential and proprietary information.
Total component cost	$2,000,000.00
Component cost (in-service year)	$2,388,105.00

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W1-GD-S89	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S500	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S499	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S501	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S80	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S87	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included

New Flowgates

Company confidential and proprietary information.

Financial Information

Capital spend start date	01/2024
Construction start date	02/2026
Project Duration (In Months)	69

Cost Containment Commitment

Cost cap (in current year)	Company confidential and proprietary information.
Cost cap (in-service year)	Company confidential and proprietary information.

Components covered by cost containment

1. Joshua Falls-Yeat 765kV Greenfield Transmission Line - Transource
2. Yeat Greenfield Station - Transource
3. Yeat–Clover Hill 230kV Greenfield Transmission Line - Transource
4. Warrenton-Wheeler 230kV Greenfield Transmission Line - Transource

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	Company confidential and proprietary information.
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?	Company confidential and proprietary information.

Additional Comments

None