

Joshua Falls - Yeat 765kV Greenfield Line and Substation

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	904
Project title	Joshua Falls - Yeat 765kV Greenfield Line and Substation
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 wavetrapp 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	12/2029
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes

Project Components

1. Joshua Falls- Yeat 765 kV Greenfield Transmission Line
2. Yeat Greenfield Station
3. Bristers – Ox 500 kV, and Meadowbrook – Vint Hill 500 kV Tie-in Lines
4. Yeat – Clover Hill 230 kV Greenfield Transmission Line
5. Warrenton - Wheeler 230 kV Greenfield Transmission Line
6. Vint Hill - Morrisville Series Reactor
7. Vint Hill - Loudon 1 Series Reactor
8. Marsh Run – Remington Ct 230 kV Line Upgrade
9. Wheeler - Linton Tap - Atlantic 230 kV Line Upgrade
10. Bristers – Yeat 500 kV Line Upgrade
11. Wheeler Station 230 kV 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 500 kV Line Upgrade
17. Joshua Falls Station Upgrade

Greenfield Transmission Line Component

Component title	Joshua Falls- Yeat 765 kV 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	<p>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.</p>	
Terrain description	<p>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.</p>	
Right-of-way width by segment	<p>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.</p>	

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–Yeate 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–Yeate 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	\$671,158,630.00
Component cost (in-service year)	\$755,392,950.00
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 CB & 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 MVA, 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)	\$208,125,286.00

Greenfield Transmission Line Component

Component title	Bristers – Ox 500 kV, and Meadowbrook – Vint Hill 500 kV 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	5155.000000
Winter (MVA)	4357.000000	5155.000000
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 routes 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-ins 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)	\$9,679,376.00

Greenfield Transmission Line Component

Component title	Yeat – Clover Hill 230 kV 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 delta configuration.
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)	\$50,837,096.00

Greenfield Transmission Line Component

Component title	Warrenton - Wheeler 230 kV 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 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	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 delta configuration.
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	\$32,456,119.00
Component cost (in-service year)	\$36,529,649.00

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)	\$6,482,931.00

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)	\$6,482,931.00
Transmission Line Upgrade Component	
Component title	Marsh Run – Remington Ct 230 kV 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) \$6,562,842.00

Transmission Line Upgrade Component

Component title Wheeler - Linton Tap - Atlantic 230 kV 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

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)	\$1,654,498.00

Transmission Line Upgrade Component

Component title	Bristers – Yeat 500 kV 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)	\$3,750,195.00

Substation Upgrade Component

Component title	Wheeler Station 230 kV 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)	\$2,205,997.00

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 5% reactor at Opossum Creek towards Candles Mtn.

Transformer Information

None	
New equipment description	5% 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	\$2,156,000.00
Component cost (in-service year)	\$2,426,597.00
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 5% reactor at New London towards John Mountain.

Transformer Information

None

New equipment description	5% 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	\$4,032,000.00
Component cost (in-service year)	\$4,538,052.00

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)	\$19,853,975.00

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)	\$2,205,997.00

Transmission Line Upgrade Component

Component title	Coco - Capitol Hill 500 kV 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)	\$13,280,104.00	

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)

\$49,634,939.00

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
2022W3-GD-W12	204544	27LINCOLN	204538	27STRABAN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-LLT6	242524	05CLOVRD	242519	05CLOVRD	16	345/500	205/205	Light Load N-1	Included
2022W3-GD-S177	314759	6HOLLYMD	314734	6CASHSCORNER	1	230	345	Summer Gen Deliv	Included
2022W3-N1-LLT6	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-ST25	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1	Included
2022W3-N1-LLT6	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-ST25	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1	Included
2022W3-GD-W42	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-N1-ST25	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Summer N-1	Included
2022W3-GD-W43	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-N1-LLT6	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-ST25	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Summer N-1	Included
2022W3-GD-W12	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-N1-ST95	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST96	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-LLT5	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-ST90	235101	01BEDNGT	235445	01BEDNGT	2	500/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST92	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST93	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-ST214	14912	8LEXNGTN	314854	6LEXNGT1	1	500/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST94	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S1773	14197	6LDYSMITH CT	313837	6SUMMIT	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W1387	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-S1772	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W1388	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD_L3302	242524	05CLOVRD	242519	05CLOVRD	16	345/500	205/205	Light Load Gen Deliv	Included
2022W3-GD_118	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Light Load Gen Deliv	Included
2022W3-GD-W823	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W823	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W1383	314749	6CHARLVL	314772	6PROFFIT	1	230	345	Winter Gen Deliv	Included
2022W3-GD_117	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Light Load Gen Deliv	Included
2022W3-GD-S1780	314901	8BATH CO	314991	8VALLEY SC	1	500	345	Summer Gen Deliv	Included
2022W3-GD_L89	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-GD-S304	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138	205	Summer Gen Deliv	Included
2022W3-GD-W1383	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-N1-ST219	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD_128	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Light Load Gen Deliv	Included
2022W3-GD_122	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Light Load Gen Deliv	Included
2022W3-N1-ST222	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S1663	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S1663	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-N1-ST222	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-GD_L104	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-GD-S1782	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD_L109	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-GD-S1788	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD_L15	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD_L116	237310	01DANSMTN	235504	01RIDGLY	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S94	235523	01BETHEL+	235507	01RIVERT	1	138	201	Summer Gen Deliv	Included
2022W3-GD_L115	237310	01DANSMTN	235504	01RIDGLY	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S329	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138	205	Summer Gen Deliv	Included
2022W3-N1-ST233	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S179	235479	01JUNCTN	235467	01FRNCHM	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S178	214991	8VALLEY SC	314926	8VALLEY	1	500	345	Summer Gen Deliv	Included
2022W3-N1-ST117	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST233	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST118	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-GD-S178	314734	6CASHSCORNER	314758	6GORDNVL	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S88	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S89	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S167	314749	6CHARLVL	314772	6PROFFIT	1	230	345	Summer Gen Deliv	Included
2022W3-N1-ST112	235101	01BEDNGT	235445	01BEDNGT	4	500/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S179	220962	NWEST311	220972	GRANITE1	1	230	232	Summer Gen Deliv	Included
2022W3-GD-W10	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-W10	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-S167	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-GD-S336	235486	01MILLVL	235597	01LOVETT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W10	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-GD_L390	235503	01REID	235505	01RINGLD	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W99	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S179	235479	01JUNCTN	235467	01FRNCHM	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W12	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD_L126	244446	05SOAPSTONE	242792	05SCOTSV	1	138/138	205/205	Light Load Gen Deliv	Included
2022W3-N1-ST127	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD_L137	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-S171	235503	01REID	235505	01RINGLD	1	138	201	Summer Gen Deliv	Included
2022W3-GD_L134	235479	01JUNCTN	235467	01FRNCHM	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W124	235188	01GREENE	235557	01LETTER	1	138	201	Winter Gen Deliv	Included
2022W3-GD_L147	235446	01BLACKO	235103	01BLACKO	3	138/500	201/201	Light Load Gen Deliv	Included
2022W3-GD-W143	235463	01TANEY	235450	01CARROL	1	138	201	Winter Gen Deliv	Included
2022W3-GD_L138	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W123	235463	01TANEY	235450	01CARROL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S180	314934	8SPOTSYL	314916	8MORRSVL	1	500	345	Summer Gen Deliv	Included
2022W3-GD_L148	235446	01BLACKO	235103	01BLACKO	3	138/500	201/201	Light Load Gen Deliv	Included
2022W3-GD_L391	235503	01REID	235505	01RINGLD	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD_L119	237310	01DANSMTN	235504	01RIDGLY	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W182	235469	01GARRET	235449	01CARLOS	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W971	235050	AD2-180 TAP	235501	01PARRN	1	138	201	Winter Gen Deliv	Included
2022W3-GD_L133	235479	01JUNCTN	235467	01FRNCHM	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W126	235120	01ALBRIG	235492	01MTZION	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S179	314749	6CHARLVL	314772	6PROFFIT	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W129	235050	AD2-180 TAP	235501	01PARRN	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT14	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Winter N-1 Thermal	Included
2022W3-GD_L182	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD_L172	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-N1-ST134	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-GD-S180	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD_L142	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S180	242603	05CLIFFR	242613	05COLLEEN SS	1	138	205	Summer Gen Deliv	Included
2022W3-GD_L141	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S190	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-GD_L143	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-N1-ST152	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-S180513837	6SUMMIT	314138	6MINE RD	1	230	345	Summer Gen Deliv	Included	
2022W3-GD-S347313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Summer Gen Deliv	Included	
2022W3-GD-S348244423	05JAMES RIVR	244446	05SOAPSTONE	1	138	205	Summer Gen Deliv	Included	
2022W3-N1-WT15207922	BRIS	204515	27YORKANA	1	230/230	229/227	Winter N-1 Thermal	Included	
2022W3-N1-ST23314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included	
2022W3-N1-ST142235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included	
2022W3-N1-WT15314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included	
2022W3-N1-ST142235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included	
2022W3-N1-WT37314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included	
2022W3-N1-WT15314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included	
2022W3-GD-W799223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included	
2022W3-GD-W160213937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included	
2022W3-GD-W794223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included	
2022W3-N1-ST152235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included	
2022W3-GD-W799223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included	
2022W3-N1-ST160235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included	
2022W3-GD-W795223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included	
2022W3-N1-LLT12314041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Light Load N-1	Included	
2022W3-N1-ST152235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included	
2022W3-N1-ST152205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included	
2022W3-GD_L81 242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load Gen Deliv	Included	
2022W3-N1-WT16235471	01GORE	235512	01STONEW	1	138/138	201/201	Winter N-1 Thermal	Included	
2022W3-N1-ST152235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included	
2022W3-N1-WT16207922	BRIS	204515	27YORKANA	1	230/230	229/227	Winter N-1 Thermal	Included	
2022W3-N1-ST152235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included	
2022W3-GD-S173914916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included	
2022W3-N1-WT62235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included	
2022W3-GD-S1732204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included	

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-WT53	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT54	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST165	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT56	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST46	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST167	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W139	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-ST47	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT58	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT60	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-LLT25	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Excluded
2022W3-N1-LLT28	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT27	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-WT72	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-LLT29	242603	05CLIFFR	242613	05COLLEEN SS	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT22	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT21	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT24	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT23	242563	05BOXWD	242603	05CLIFFR	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-W97	204515	27YORKANA	208048	OTCR	1	230	227/229	Winter Gen Deliv	Included
2022W3-N1-WT64	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT65	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W140	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W174	235120	01ALBRIG	235492	01MTZION	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W173	235120	01ALBRIG	235492	01MTZION	1	138	201	Winter Gen Deliv	Included
2022W3-N1-LLT37	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT39	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT38	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-W100	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-N1-LLT30	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138/138	205/205	Light Load N-1	Included
2022W3-N1-LLT33	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load N-1	Included
2022W3-GD-W99	242701	05LEESVI	314667	4ALTVSTA	1	138	205/345	Winter Gen Deliv	Included
2022W3-GD-W99	242701	05LEESVI	314667	4ALTVSTA	1	138	205/345	Winter Gen Deliv	Included
2022W3-GD-W19	235469	01GARRET	235449	01CARLOS	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W10	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-N1-WT9	3314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT9	5314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included
2022W3-GD-W10	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-N1-LLT4	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-W10	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-N1-WT8	6204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W10	223938	DICKH230	223937	DICK 230	2	230	233	Winter Gen Deliv	Included
2022W3-N1-WT8	8204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W18	314991	8VALLEY SC	314926	8VALLEY	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W10	313440	8VINTHIL	314125	6VINTHIL	2	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W77	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W19	235469	01GARRET	235449	01CARLOS	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT10	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W88	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-W15	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT10	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W79	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Winter Gen Deliv	Included
2022W3-GD-S37	2244446	05SOAPSTONE	242792	05SCOTSV	1	138	205	Summer Gen Deliv	Included
2022W3-GD-W79	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Winter Gen Deliv	Included
2022W3-GD-S18	314918	8NO ANNA	314911	8LADYSMITH	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S38	4314138	6MINE RD	314137	6FREDBRG	1	230	345	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-WT18205	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W94	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-N1-WT19204	235463	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-S1742	235467	01FRNCHM	235592	01HAMPS1	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1820	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S2123	14138	6MINE RD	314137	6FREDBRG	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S3823	14138	6MINE RD	314137	6FREDBRG	1	230	345	Summer Gen Deliv	Included
2022W3-N1-WT3	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT19218	23938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-WT4	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT20218	23938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-WT19218	23938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-WT20218	23938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-W904	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT20218	23938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-ST183	314912	8LEXNGTN	314856	6LEXNGT2	1	500/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1742	235467	01FRNCHM	235592	01HAMPS1	1	138	201	Summer Gen Deliv	Included
2022W3-N1-WT19204	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-S1742	235592	01HAMPS1	235471	01GORE	1	138	201	Summer Gen Deliv	Included
2022W3-N1-WT19204	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-S1742	235592	01HAMPS1	235471	01GORE	1	138	201	Summer Gen Deliv	Included
2022W3-N1-WT19205	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-S13	235484	01MESSCK	235490	01MORGAN	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S2312	242603	05CLIFFR	242613	05COLLEEN SS	1	138	205	Summer Gen Deliv	Included
2022W3-GD-W98	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-N1-WT19204	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-S14	235484	01MESSCK	235490	01MORGAN	1	138	201	Summer Gen Deliv	Included
2022W3-N1-WT19218	23938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included

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2022W3-N1-ST180	314919	8OX	314068	6OX	1	500/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT192	228938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-WT123	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included
2022W3-GD-W1231	31440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT153	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included
2022W3-GD-W1231	31440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT163	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Winter N-1 Thermal	Included
2022W3-GD-W1411	31440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W1301	31440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-S39	235467	01FRNCHM	235592	01HAMPS1	1	138	201	Summer Gen Deliv	Included
2022W3-N1-ST192	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT202	228938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-WT202	228938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S175	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W1361	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT202	228938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S34	235467	01FRNCHM	235592	01HAMPS1	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W23	235050	AD2-180 TAP	235501	01PARRN	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT232	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-W78	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD-S168	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S176	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-W79	235523	01BETHEL+	235507	01RIVERT	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W162	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-S121	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W79	235523	01BETHEL+	235507	01RIVERT	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W17	235471	01GORE	235512	01STONEW	1	138	201	Winter Gen Deliv	Included
2022W3-N1-LLT52	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-W1	235471	01GORE	235512	01STONEW	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S270	242613	05COLLEEN SS	244423	05JAMES RIVR	1	138	205	Summer Gen Deliv	Included
2022W3-N1-LLT54	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-W28	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-LLT53	244423	05JAMES RIVR	244446	05SOAPSTONE	1	138/138	205/205	Light Load N-1	Included
2022W3-GD-S1468	14939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S2018	14916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S1762	242563	05BOXWD	242603	05CLIFFR	1	138	205	Summer Gen Deliv	Included
2022W3-N1-WT20	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-W806	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S1122	235523	01BETHEL+	235507	01RIVERT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W31	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-S1132	235523	01BETHEL+	235507	01RIVERT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W22	235050	AD2-180 TAP	235501	01PARRN	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S264	242603	05CLIFFR	242613	05COLLEEN SS	1	138	205	Summer Gen Deliv	Included
2022W3-N1-ST79	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST80	314916	8MORRSVL	313440	8VINTHIL	1	500/500	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST20	223937	DICK 230	314290	6EDFERRY	1	230/230	233/345	Summer N-1 Thermal	Included
2022W3-N1-ST20	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included

New Flowgates

Company confidential and proprietary information

Financial Information

Capital spend start date 09/2023

Construction start date 04/2027

Project Duration (In Months) 75

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

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	No
ROW / land acquisition	No
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
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